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ABSTRACT

This report examines information from a broad base of literature and research and from three Delphi surveys of the views and opinions of small, highly select groups of knowledgeable educational leaders in order to highlight a number of key issues and arguments related to the appropriate roles and functions of public vocational education. It concludes that record levels of unemployment, declining economic development and productivity growth, and sharp declines in the number of new labor market participants in the decades ahead, coupled with an aging labor force, are all forcing greater emphasis on vocational education's role in meeting the nation's economic development needs. The dominant effect of these conditions has been to move vocational education toward greater emphasis on the development of highly specialized skills for specific occupations. At the same time, another group of knowledgeable people believe that secondary vocational education's emphasis should be on general education and preparation in broad occupational areas rather than in specific jobs, while postsecondary vocational education's focus should be on preparation for specific jobs, especially highly skilled jobs for emerging industries, for a wider spectrum of the population. These opposing viewpoints raise some policy implications for federal and state governments and lead to questions, which, the report indicates, should be researched in the coming decade. (KC)

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# THE ROLES AND FUNCTIONS OF VOCATIONAL EDUCATION: SOME CURRENT PERSPECTIVES

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# FOREWORD

The issues and questions surrounding the appropriate roles and functions of vocational education are complex and often controversial. This report focuses on several of the major questions and issue areas facing vocational education.

The report identifies current thinking and perspectives of a small, highly select group of educational leaders on several of these major issues and questions. In so doing, it attempts to describe some of the alternative positions and major arguments related to these issues and, where possible, to identify some of their potential implications for the roles and functions of vocational education in the future.

It is hoped that the report can serve as a stimulus for constructive debate and dialogue among vocational education policymakers at local, state, and national levels, as well as among researchers and graduate students in vocational education, and that this will lead to greater clarification, understanding, and possible resolution of the issues.

The National Center is deeply indebted to a number of people who contributed to the project. We thank the U.S. Office of Vocational and Adult Education for its support of the project. We greatly appreciate the invaluable time and effort the Delphi survey respondents gave in sharing their views and insights on the role and function of vocational education. We are also most appreciative of the commissioned papers prepared for the project by Paul E. Barton of the National Institute for Work and Learning, and by Robert E. Taggart of the National Council on Employment Policy. We wish also to thank Brandon Smith, University of Minnesota, and Henry Brickell, Policy Studies in Education, for their reviews and critiques of early drafts of the report.

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in Vocational Education

## EXECUTIVE SUMMARY

This report examines information from a broad base of literature and research and from three Delphi surveys of the views and opinions of small, highly select groups of knowledgeable educational leaders in order to highlight a number of key issues and arguments related to the appropriate roles and functions of public vocational education. It concludes that record levels of unemployment, declining economic development and productivity growth, and sharp declines in the number of new labor market participants in the decades ahead, coupled with an aging labor force, are all forcing greater emphasis on vocational education's role in meeting the nation's economic development needs.

There is a growing fear that development of our human resources is not keeping pace with technological change and occupational developments, and is resulting in a growing imbalance between the supply of workers and the skills demanded. The poor performance of the economy overall is masking the fact that a portion of our record-level of unemployment is due to tehnological development and changes in the work place. These changes are making some skills obsolete and are expanding the need for new skills and the retraining of workers displaced by failing industries and by technological change. Whereas many occupations, especially in high-technology fields, seem to require more highly specialized skills, there is, at the same time, an increased need for greater individual flexibility and adaptability in adjusting to new jobs and occupational requirements.

The population of the United States is aging and enrollments in elementary and secondary schools are dropping. The needs of the postwar baby boom cohort have shaped educational policy for over two decades. Now that this cohort of Americans has passed out of the schools and is in the labor market, their needs as adults are likely to affect national education and employment policy in the decades ahead. This is especially likely for those lacking basic skills, those whose job skills become obsolete, and those displaced by new technologies and automation.

The nation does not have a comprehensive, unified human resource development policy or education and training system. Instead, we have a diverse and essentially uncoordinated and independent array of employment and training-related programs and services about which we know little. For example, we do not know the extent to which this pluralistic, decentralized nonsystem represents healthy diversity and multiple options for education and training, or the extent to which it represents a haphazard and inefficient system. We do know that there has been little coordination or collaboration among the agencies in their

policies, practices, or services, and that the role and function of public vocational education must be viewed in this broader institutional context.

Without a doubt, the dominant effect of the economic conditions, technological changes, and demographic shifts facing the nation has been to move vocational education toward greater emphasis on the development of highly specialized skills for specific occupations. Vocational educators are urged to expand specialized skill training in high-technology areas, to play a vital role in state and local economic recovery plans, and to be aggressive in seeking ways to increase the involvement and cooperation of business and industry in their programs.

At the same time, there seems to be a growing consensus among an increasing number of knowledgeable people that the economic, technological, demographic, and educational conditions in the nation require secondary and postsecondary vocational programs to serve different roles and functions. The consensus among this group, though by no means clear and widely articulated, seems to be that vocational education at the secondary level, should be integrated better with general education, and that emphasis should be on the development of broadly applicable skills useful to all students in a wide range of future occupations. This group believes that, while the focus should be on strengthening vocational education's contributions to general education, preparation in broad occupational areas (rather than in specific jobs) should be available to secondary students who choose it and can benefit from it.

While many seem to support this direction and emphasis at the postsecondary level, the dominant theme seems to be that postsecondary vocational programs should expand their capacity to serve a broader clientele and a broader range of training needs. By and large postsecondary institutions are being urged to work more closely with business and industry to emphasize and improve programs for highly specialized skill development, especially those needed in new and emerging occupations in the service sector and in high technology areas.

It is highly probable that these issues and distinctions will continue to be at the heart of dialogue and debates about the roles and functions of vocational education throughout this decade. This report, in the hope that it will help to stimulate and contribute constructively to that dialogue, raises a number of policy implications and questions and identifies several areas of needed research.

## Some Policy Implications

If vocational education is to strengthen significantly its technical skill development capacity, a number of policy implications seem evident. At a minimum:

- Substantial federal and state vocational funds must be earmarked for updating and modernizing vocational education equipment and facilities at both secondary and postsecondary levels in order to reflect adequately technological and occupational changes in the labor market.

- Federal legislation should target funds for specialized skill training to those most in need; that is, to displaced and unemployed adult workers and to poor, disadvantaged youth.

- Federal and state vocational legislation must also emphasize and provide funds to supplement salaries for vocational faculty in new and emerging occupational areas in order to make their salaries more competitive with those available in business and industry. Additionally, funds should be earmarked to support a variety of approaches for updating and retraining vocational faculty in new technological developments and occupational changes in their fields of expertise.

- Federal vocational legislation should include provisions requiring close and significant cooperation and involvement of vocational education in state and local economic recovery plans. Included in these provisions should be requirements for demonstrating that vocational education programs are responsive to national, state, and local labor market demands, especially in areas of critical skill shortages, and that they are sensitive to the other sources in their areas that supply trained workers.

- Federal and state vocational legislation should encourage even greater collaboration and involvement than it now does of business, industry, and labor in all aspects of vocational education programs.

If, on the other hand, vocational education is to strengthen its educational role significantly at the secondary level and is to seek to improve the educational achievement of students, then a very different set of policy implications will follow. At a minimum:

- Federal legislation should more clearly define and distinguish the principal roles and functions of

vocational education at the secondary and post-secondary levels, and funding provisions should reflect these key differences.

- Federal and state vocational legislation must emphasize and provide funds for upgrading and retraining of vocational faculty in the latest techniques and approaches for teaching a broad range of fundamental skills.

- The evaluation criteria in the current federal vocational law must be revised; instead of measures of training-related placement and employer satisfaction, alternative measures of educational achievement will be needed as success criteria.

- Federal vocational legislation should include provisions and earmark funds for secondary and post-secondary institutions in order to establish joint, collaborative arrangements whereby postsecondary institutions can provide preparation in specific job skills for secondary students who choose to pursue job training and can benefit from it.

- Federal and state vocational legislation should encourage and provide funds for a broad range of research, development, and dissemination activities focusing on new and innovative techniques for improving educational skill achievement in vocational education programs and for developing more effective methods and techniques for measuring the educational achievement and outcomes of vocational education.

## Some Questions

Among the several key questions noted in the conclusions of the report are the following:

- What should be the optimum role and function of each of the major programs or agencies engaged in job preparation? What changes will be required in current programs if these roles and functions are pursued?

- How does the optimum role and function of each agency or program influence which problems of national importance and priority will be addressed and how they will be addressed?

- To what extent should these various job preparation agencies and programs be coordinated and articulated? How can greater articulation be achieved?

- What should be the role of business, industry, and labor in public vocational education, and in particular, what should be their role in public secondary vocational education?
- How can public vocational education better measure and demonstrate its labor market effects and its educational effects?

## Some Areas of Needed Research

Each of the questions noted above has a research agenda implicit within it. Two additional areas of needed research and policy analysis are described in the report. These two areas--the educational effects of vocational education, and the articulation and coordination of public secondary and postsecondary vocational education--are singled out because they are areas in which little research has been done to date, and because they are areas important to the future of vocational education, regardless of whether one believes vocational education should pursue an emphasis of labor market outcomes or an emphasis of educational outcomes.

# INTRODUCTION

Without a doubt, the dominant effect of the major economic conditions, technological changes, and demographic shifts facing the nation has been to move vocational education toward greater emphasis on the development of highly specialized skills for specific occupations. Vocational educators are urged to expand specialized skill training, especially in high-technology areas, to play a vital role in state and local economic recovery plans, and to be aggressive in seeking ways to increase the involvement and cooperation of business and industry in their programs.

At the same time, there seems to be a growing consensus that the economic, technological, demographic, and educational conditions in the nation require secondary and postsecondary vocational programs to serve different roles and functions. The consensus among this group, though by no means clear and widely articulated, seems to be that vocational education, at the secondary level, should be integrated better with general education, and that emphasis should be on the development of broadly applicable skills useful to all students in a wide range of future occupations. This group believes that, while the focus should be on strengthening vocational education's contributions to general education, preparation in broad occupational areas (rather than in specific jobs) should be available to secondary students who choose it and can benefit from it.

While many seem to support this direction and emphasis at the postsecondary level, the dominant theme seems to be that postsecondary vocational programs should expand their capacity to serve a broader clientele and a broader range of training needs. By and large postsecondary institutions are urged to work more closely with business and industry to emphasize and improve programs for highly specialized skill development especially those needed in new and emerging occupations in the service sector and in high technology areas.

It is highly probable that these issues and distinctions will continue to be at the heart of dialogue and debates about the roles and functions of vocational education throughout this decade. It is our hope that this report will help to stimulate and contribute constructively to that dialogue.

To that end, the report first summarizes briefly some of the critical national problems and needs that make up the social and economic context of vocational education as it enters the decade of the 1980s. It then examines information from a broad base of literature and research and from three Delphi surveys of the views and opinions of small, highly select groups of knowledgeable educational leaders in order to highlight some of the major arguments and positions on a number of key issues related to the appropriate roles and functions of public vocational education.

## THE SOCIAL AND ECONOMIC CONTEXT

As the nation enters the decades of the 1980s and 1990s, we face severe problems of economic growth and development reflected in record and near-record levels of unemployment--levels that are critically high among youths, and especially among disadvantaged youths. We also face a near zero rate of growth in productivity.

The overall stabilization and aging of the population, sharp declines in the number of new participants entering the labor force in these decades, rapid technological and occupational changes, development of state and local plans for economic recovery, and the increased involvement and support of business, industry, and labor in vocational education are all expected to help stimulate productivity and economic revitalization in the longer term. Among the shortfalls accompanying many of these conditions are significant worker displacement, increasing skill obsolescence, lagging human resource development, mismatches between the supply of workers and the skills demanded by the labor market, and high youth and adult unemployment and underemployment.

Improvement in the quality of the labor force is a major determinant of increased productivity and economic development. High-quality vocational education that is suited to individual needs, interests, and abilities, and that is realistic in light of actual and anticipated employment opportunities is seen as an urgent and critical national priority.

### Unemployment

The Employment and Training Report of the President (U.S. Department of Labor 1981) reports that unemployment hovered near the 6 million level throughout 1978 and 1979, then sharply increased in 1980 as the number of jobless persons reached nearly 8 million--7.5 percent of the labor force--at year's end.* The employment-population ratio (the percentage of the working age population that is employed) stood at 58.2 percent in 1980--the lowest level in two years. The drop in this ratio reflected declines in employment among adult men and teenagers, with adult men absorbing a major proportion of the increased cutbacks.

*In November 1982, at about the time of this writing, the nation's unemployment stood at 10.7 percent. This is the first time that the unemployment figure has reached this level since 1932, the time of the Great Depression.

Unemployment figures alone do not reflect the severity of the problems and the resulting hardships. Over 4 million people were employed but were reported working on involuntary part-time schedules during 1979. Of the 82.5 million persons who worked for fifty weeks or more during 1979, Taggart (1981) reports that 15 million failed to achieve minimum wage earnings during their hours of availability. Moreover, "4.6 million had earnings so low that, even when combined with the wages and salaries of other family members, their earnings were below the poverty level" (Taggart 1981, p. 2). Most of these underemployed and unemployed workers were not individuals with only casual or marginal attachments to work.

## Economic Development and Productivity Growth

One measure of the economic health of the nation is its annual rate of productivity gain--the percent of increase in productivity compared to the previous year. Productivity is an estimate of the value of all our economic output, divided by the work hours needed to produce it. Thus, increasing productivity means increasing the ability to produce more efficiently (Striner 1982), and national economic development implies a net increase in national income per capita. Unless there is growth and development in the national economy each year, we will not have the means to maintain or raise the national standard of living.

Although the United States remains at the highest level of productivity of any major industrial nation in the world, during the last decade or so, the rate of productivity gain has gradually fallen. In 1980, productivity growth declined for the third consecutive year. The Employment and Training Report of the President (U.S. Department of Labor 1981) points out that the period since 1973 has been marked by dramatic declines in productivity growth. For example, from 1945-1965 productivity grew at an average annual rate of 3 percent a year. This growth rate fell to 2 percent in the 1965-1973 period. By late 1977, the annual gain approached zero and has since then remained around zero (Striner 1982). If productivity had continued to grow at the rate it grew prior to 1967, family income would have been $4,200 higher in 1979, and we would have had a gross national product of almost $300 billion more than we did (Sullivan 1981). Instead, the result has been high unemployment, high inflation, reduced wages, and the loss of our competitive position in some international markets.

Improvements in the quality of the labor force, the accumulation of capital, and the pace of technological change--all major determinants of productivity--are essential if national productivity and economic development are to be improved and if problems of unemployment and underemployment are to be solved.

Large investments in research and development, new federal tax incentives to spur capital investment and modernization, reform of government regulations, more rapid application of new technologies in industry, and new philosophies and styles of management coupled with increased worker participation in job decisions are all strategies being implemented (1) to create new jobs, products, and services to meet consumer needs, and (2) to use existing resources such as labor, capital, technology, and natural resources more effectively in order to improve and revitalize national economic development.

These strategies and changes are resulting in a revolution in the American work place. Both work and workers are affected. On one hand, the needs of society and the economy are affected by economic conditions and technological developments that are changing the nature and content of available jobs and work requirements (i.e., labor market demand). On the other hand, those changes, coupled with significant demographic shifts, are affecting changes in the supply side of the labor market and the skills and training needs of individual workers. All of these changes have significant implications for the provision of high-quality vocational education.

Many older, declining industries will change dramatically with the increased use of automated equipment and the introduction of completely new technologies and occupations. If they do not, they will rapidly fall by the wayside. Meanwhile, new productive industries in high-technology fields and automated information processing are resulting in major shifts in employment from manufacturing and blue-collar jobs to the service sectors and white-collar occupations.

These rapid and dramatic changes in the work place are making the skills of a growing number of adults obsolete and are greatly expanding the need for new skills and for retraining of displaced workers for new technical fields. The changes promise to increase work specialization (with its attendant need for highly specialized skill development), and at the same time to increase the need for greater individual employment flexibility and adaptability. On the one hand, education and training for work must be directed toward providing programs for the development of technical skills required by specialized occupations. On the other hand, education and training must simultaneously provide preparation and skills required by changing labor market conditions and opportunities. They must direct attention to what they can do to prepare workers better not only for specific jobs, but also for improved chances of adapting effectively to new jobs and occupational requirements when changes are desirable or necessary.

According to a Congressional Budget Office study (1981), "the skill level and health (or human capital) of the work force is a major determinant of productivity growth. Better trained, more knowledgeable, healthier workers mean higher productivity" (p. vi).

With regard to policies affecting the quality of the labor force, the Congressional Budget Office indicates that policies that would encourage occupational training and better quality secondary education seem likely to be effective means of stimulating productivity. Another approach recommended by the Congressional Budget Office is to strengthen policies and programs that help workers in the process of adjustment to economic change. The Congressional Budget Office suggests that this approach "would stimulate productivity by raising the productivity of displaced workers, and by encouraging workers to accept new technology without fear of unemployment as a consequence" (p. 58).

There is a growing fear, however, that the development of our human resources is not keeping pace with rapid developments in other areas. A serious and growing imbalance between available jobs and trained technical workers may stifle the rapid application of high technology and choke national efforts aimed at economic development and revitalization.

Striner (1982) is among those who feel that a major issue confronting the nation right now "is the growing obsolescence of our labor force in the midst of a growing shortage of key skills" (p. 25). According to Miller (1982), more and more policymakers are recognizing what they call a "serious mismatch between jobs and workers. A shortage of trained technical workers, they fear, may stifle the growth of high-technology firms" (p. 865).

Developing skilled personnel to enter high-technology occupations is also important according to Senator Lloyd Bentsen. He concludes that

> We've concentrated so much on the machines and the tools, and then to turn around and neglect the human resources is a serious mistake. You'll find that we'll pay a high price in loss of production. . . . Shortages of skilled workers could choke economic growth by causing inflationary wage increases, high labor turnover, and underuse of human resources. (p. 865)

Citing an article in the Washington Post by Dan Morgan, Congressman Long of Louisiana stated his view before the U.S. House of Representatives on the importance of keeping training current with the latest technological and occupational developments in the labor market."

> Just as we have emphasized the importance of putting the most modern equipment into up-to-date factories, I believe we must now be equally concerned with making sure that our work force is prepared to make the most of the opportunities that technological change and high rates of investments will make possible. (Long 1981, p. H6274)

In his article, Morgan (1981) reports that a business round table task force (headed by R.G. Metler, chairman of TRW, Inc.,) representing a blue chip roster of American corporations has called for "a national policy to deal with a growing imbalance between the supply of workers, and the skills demanded." Metler notes that the nation "has skimped on its investments in training and educating workers and that the economy could face serious difficulties as a result" (p. H6274).

The Joint Economic Committee of the United States Congress (1980) concluded that

> Significant adjustments will be required and retraining promises to be at the top of the list. . . . The jobs created . . . will require a greater degree of technical training . . . and training and education programs which are more carefully coordinated with market developments will be needed. (p. 36)

Robert Worthington (1982), Assistant Secretary for Vocational and Adult Education, has expressed many of these same concerns for the development needs of a skilled, up-to-date work force. He notes that the overall approach of the United States Office of Vocational and Adult Education "is to focus on economic revitalization and other national skilled work force needs." He further points out that within this context "our emphasis is shifting to these areas: program quality and technical scope, closer collaboration with business, industry, and labor, and retraining adults" (p. 34).

## Demographic Shifts

In addition to the major economic conditions and technological changes discussed previously, major demographic shifts will have increasing impact on the labor market. During the 1960s and 1970s, the nation had a supply of youth that was viewed as a surplus rather than a valued resource. The baby boom generation was followed, however, by significantly lower birth rates. The decline from 4.3 million births in 1961 to 3.1 million births in 1976 is the largest and most rapid demographic change on record according to the Joint Economic Committee of the United States Congress (1980).

Thus, the median age of the nation's overall population is aging and throughout the 1980s, fewer youth will be available for the labor force. Ruff, Shylo, and Russell (1981) point out that "between 1977 and 1985, the relative number of young people between the ages of sixteen and twenty-four will drop sharply" (p. 12). Over 2 million fewer teenagers will enter the labor force in this decade (Mangum 1982). At the same time, Ruff, Shylo, and Russell point out that "there will be a rise in the relative share of the population of those aged thirty-five through forty-four and those sixty-five and over" (p. 12).

Thus, older persons entering the late career and retirement years will increase. Their main problem will be the need to remain employed in decent jobs in order to survive economically. For many this may mean changing jobs or accepting underemployment at a time when such situations are least welcome.

Thus as labor force growth rates decline, we will face a shortage rather than a surplus of entry-level workers within a decade. The promising factor for the years directly ahead is that yesterday's surpluses, and what Taggart (1981) describes as today's "leftovers"--persons who have traditionally been discarded and ignored because of limited employability prospects--will become a scarce and valuable resource. Education, employment, and training programs once provided largely out of compassion for disadvantaged persons may now be needed for economic reasons (Mangum 1982).

During the past several decades the labor market has created record numbers of new jobs. It has absorbed the bulk of the persons from the unprecedented baby boom generation as well as record numbers of women entering and reentering the labor market. According to the Congressional Budget Office study (1981), these rapid increases in the number of relatively inexperienced workers are thought to have contributed to the slowdown in productivity growth since 1965. Other implications of the movement of the baby boom cohort into the labor market are unknown but as Hudson-Wilson (1979) points out, "this cohort has faced the most difficult transition of any cohort to date and many of the members of the cohort never successfully made the move from youthful to adult labor market behavior" (p. 29).

By 1985, nearly 50 percent of the work force will be between the ages of twenty-five and forty-four (Ruff, Shylo, and Russell 1981). While this group typically has "higher labor force participation rates and the most stable attachment to the labor market," Hudson-Wilson (1979) issues this caution:

> If the economy continues to operate below capacity, large numbers of these workers will face the prospect of unemployment or underemployment. If unemployed they

will create political pressure for adult training and retraining programs. If underemployed, they are likely to displace younger and less-advantaged workers. (p. 30)

The size of the nonwhite population has increased faster than the population as a whole, and "the relative number of minorities among the younger age groups will be increasing" (Ruff, Shylo, and Russell 1981, p. 12). Thus, nonwhite minorities and women will constitute a growing proportion of the work force and "the needs of these traditional target groups will not subside and may increase" (Hudson-Wilson 1979, p. 30).

For example, women remain heavily concentrated in traditional jobs. Marshall (1982) points out that about 40 percent of all women in the labor force are concentrated in ten occupations where women constitute over 50 percent of the employees. Moreover, women who work full-time earn only about 59 percent as much as men who work full-time.

Thus, women will continue their struggle to compete for an equal footing with males for top jobs and for equal pay. Their unwillingness to take dead-end positions will continue to grow. At the same time, the relative number of female heads of households and displaced homemakers will increase, as will the number of households that depend on two wage earners. The main problem is that many women returning to the labor force may be unskilled and may lack knowledge of how to get and keep jobs.

Additionally, the problems of youth unemployment will continue and are likely to be exacerbated for nonwhite youths. "Minorities will increase their proportions of sixteen- to twenty-four year-old workers from 15.8 percent in 1980 to 18.3 percent in 1990" (Marshall 1982, p. 22). The Congressional Budget Office (1982) notes that while the unemployment rate among white youths in 1981 was more than twice the average rate for the labor force as a whole (15.0 percent), nonwhite youth unemployment was 34.6 percent, or more than four times the average rate for the labor force as a whole.

The Congressional Budget Office study (1982) points out that this group of nonwhite youth "is disproportionately black and poor [emphasis added], and many of them lack basic academic skills" (p. x). Although blacks of all ages have consistently had the worst unemployment record of any racial group, black youths are likely to continue to suffer debilitating unemployment and economic hardships unless the economy improves sustantially.

Moreover, Hispanic youth unemployment is estimated to be substantial. Additionally, Hispanic youth have the worst school dropout rate of all groups. Traditional teaching methods and

programs have not been successful in retaining the increasing Hispanic youth population in the nation's schools. The middle-aged, predominantly white work force is likely to continue to cause downward displacement in jobs, leaving both unskilled and uneducated Hispanics and blacks in dead-end jobs, plagued by low pay and recurrent unemployment in later years. Thus, their patterns of accruing large deficits in employability development may become exacerbated.

The Congressional Budget Office study (1982) notes three approaches to dealing with the youth unemployment problem: "increasing employment demand for youth; enhancing their job qualifications; or improving their ability to negotiate the transition from school to work and from one job to another" (p. 19). While the study describes these three approaches as necessarily interdependent, it cautions that

> A strategy of increasing employment demand will fail if those in need of help are not ready for jobs. Improvements in the qualifications of youths will be ineffective if too few jobs are available. Improving matching mechanisms will be futile if there are not jobs or employable youths to be matched. (p. 19)

While the employment problems of youth are not likely to go away in the near future, the Carnegie Council (1979) signals a note of optimism when it points out that "instead of growing explosively as it did in the 1960s, the youth population will be declining." This, the Council feels, will make it possible "to devote more resources to the solution of what have been intractable youth problems, within a budget of stable or even declining expenditures for youth in toto" (p. 1).

## PERSPECTIVES ON THE ROLES AND FUNCTIONS OF VOCATIONAL EDUCATION

All of the economic conditions, technological changes, and demographic shifts discussed in the previous section affect the nation's human resource development needs, how the nation goes about meeting those needs, and the role and contributions of vocational education to the enterprise. Some idea of the roles and potential responsiveness of public vocational education to meeting national needs and priorities was obtained through three Delphi surveys conducted by the project. Respondents (nine per survey) were asked for their views and opinions about (a) the strengths and relative emphasis given to different skills by public secondary and postsecondary vocational education (Delphi 1), (b) the strengths and relative emphasis given to different skills by the other key agencies and programs that provide job training (Delphi 2), and (c) the appropriate role of secondary and postsecondary vocational education in addressing national needs and priorities.

Some of the details about the surveys and additional findings are included in Appendix D. Only the major results are summarized and highlighted here. Because each of the surveys was limited to nine respondents, these results should be treated cautiously and should not be overemphasized.

### Relative Strengths and Emphasis of Vocational Education

Figure 1 includes descriptive excerpts from the respondents' comments to summarize and highlight major comparisons and contrasts among the key agencies and programs that provide preparation for work.

All respondents agreed secondary vocational education should include job skill training along with employability skill development and occupational exploration. Some felt that the emphasis should be greater on employability skills development and occupational exploration. Most agreed that development of basic computational and communication skills in all secondary level students should be the primary goal. Several individuals stressed that secondary-level vocational education must prepare participants for two possible options: further education or entrance into the labor market.

Job-specific preparation was seen as the most typical type of occupational training now provided by secondary vocational education programs. The respondents felt, however, that broader-based preparation in occupational areas is what should be

| EDUCATION AND TRAINING AGENCIES | EMPHASIZES -- | HAS-- | SERVES-- (Role and population) |
|---|---|---|---|
| Secondary vocational education | • work values and attitudes (e.g., dependability, cooperation, grooming, work norms)<br>• basic skills (e.g., reading, writing, computing)<br>• within technical job skills:<br>- occupational area preparation (materials and methods common to a group of occupations)<br>- world of work preparation (basic tool skills, occupational survival skills) | • access to large numbers of young people<br>• trained cadre of staff<br>• contacts with business industry<br>• mixed job placement record*<br>• inadequate and obsolete equipment and facilities in some cases | • in-school youth*<br>• as an integration of general and vocational education*<br>• to provide socialization at appropriate time in life*<br>• adults (through adult education programs that are administered by secondary vocational education) |
| Postsecondary vocational education | • technical job skills specific to a particular job (e.g., secretary, computer programmer, keypunch operator)<br>• basic skills<br>• work values and attitudes | • technical capacity and facilities<br>• flexibility<br>• linkages with business and industry<br>• supportive services<br>• good placement record*<br>• ability to provide training for specific industries<br>• use of part-time faculty from industry | • nontraditional students<br>• 18-21 years old<br>• an older, more job-ready, population<br>• as a provider of training for jobs requiring a postsecondary level of expertise |
| CETA | • teaches job skills specific to a particular job (to a lesser degree than other providers, however)<br>• work values and attitudes<br>• basic skills<br>• English as a second language<br>• job search training | • ability to leverage resources from a variety of agencies<br>• single purpose function<br>• supportive services<br>• weak quality standard for training* | • as a coordinator and broker for a unique at-risk population<br>• as a second chance for out-of-school youth* |

*Comments added by researchers

FIGURE 1. Key Comparisons of Various Education and Job Training Agencies and Programs

| EDUCATION AND TRAINING AGENCIES | EMPHASIZES-- | HAS-- | SERVES-- (Role and population) |
|---|---|---|---|
| Job Corps | • job entry, maintenance, and advancement skills (e.g., how to complete a resume, behave in an interview)<br>• basic skills<br>• world of work skills (e.g., basic tool skills, occupational survival skills) within the technical job skills area<br>• technical job skills<br>• socialization<br>• competency-based instruction methods | • residential, highly structured setting<br>• high dropout rate (at beginning)*<br>• high individual cost*<br>• ability to motivate<br>• good record of labor market effects for completers | • targeted population (hard core unemployed, disadvantaged youth) |
| Apprenticeship | • technical job skills specific to a particular job (to a greater degree than other providers) | • correlations with economic conditions<br>• linkages with public postsecondary education<br>• classroom training combined with on-the-job training<br>• earn while you learn feature<br>• high relevance to the work place<br>• small range of industries/ occupations*<br>• highly individualized training*<br>• highly restrictive entrance | • adults*<br>• small numbers of persons*<br>• as provider of training in skill areas that are technical in nature but still require a great degree of discretion |
| Proprietary schools | • technical job skills specific to a particular occupation | • relatively higher cost to trainee*<br>• only job related instruction*<br>• restrictive entrance requirements*<br>• ability to quickly adapt to market forces<br>• strong links with employers<br>• good placement records*<br>• short-term, up-to-date, employer-specific training* | • as provider of training for occupations not addressed through public postsecondary programs or apprenticships (e.g., bartending, locksmith)<br>• as provider of training for highly marketable occupations and for occupations requiring a postsecondary level of expertise |

*Comments added by researchers

| EDUCATION AND TRAINING AGENCIES | EMPHASIZES-- | HAS-- | SERVES-- (Role and population) |
|---|---|---|---|
| Community-based organizations | • work values and attitudes<br>• English as a second language*<br>• strong race and ethnic identity*<br>• basic skills remediation | • role models<br>• involvement with the community<br>• no consistency in quality*<br>• little emphasis on job specific technical skills<br>• highly individualized approach*<br>• outreach components | • persons not served by other systems |
| Business/industry | • technical job skills specific to a particular employer's needs and their equipment<br>• skills for upgrading employees<br>• skills for new technology | • trainers with expertise<br>• high job relevance<br>• internal/closed systems*<br>• capability of interfacing with the education community<br>• earn while you learn feature | • adults, employees (restrictive)* |
| Military | • basic skills<br>• job specific skills<br>• employer/equipment specific skills<br>• by means of competency-based instruction<br>• socialization | • ability to invest in curriculum development<br>• controlled environment<br>• unique mission<br>• earn while you learn feature<br>• internal/closed system*<br>• credibility with civilian employers as proxy for maturity and for some occupational skills* | • out of school youth and adults* |

*Comments added by researcher

emphasized and can be done best at this level. Employer- and equipment-specific preparation received low ratings both for current and future emphasis at the secondary level.

The reasons respondents gave for why secondary-level vocational education should provide occupational skill training varied. Some respondents emphasized occupational skills acquisition for use in the labor market upon graduation from high school. Others emphasized "transferability" and said that learning to do a job well will transfer to knowing what goes into doing any job well later on in life. Additionally, some felt that secondary occupational skills training aligned with John Dewey's philosophy that vocational education, at its best, is a process of learning that all high school students should experience.

The viewpoints of the respondents toward postsecondary vocational education were more homogenous. Consensus was high that postsecondary vocational education is doing what it should be doing--providing technical job skills specific to particular occupations.

Based upon the responses of the Delphi participants, the primary differences between the roles and functions of secondary and postsecondary vocational education are as follows:

- Secondary vocational education is a multipurpose program intended to provide technical skills, and at the same time, foster good work attitudes, facilitate the transfer of skills needed in all jobs, motivate disenchanted learners, enhance basic skills attainment, serve as an exploration into the careers arena, and compensate for discrimination in society against special needs populations.

- Postsecondary vocational education is more single purposed in that its main function is to teach technical job skills specific to particular occupations.

When asked to describe the optimum role for secondary vocational education, most of the respondents focused on career education, exploration, basic skills, work values and attitudes, and on skills to enable a worker to move from one technology to another. A few respondents stressed technical job skills training and/or cluster occupational training. The strengths and unique characteristics of secondary vocational education that were mentioned included access to large numbers of young people (some of whom will not pursue any further formal education activities), a trained cadre of staff, and contacts with business and industry.

For postsecondary vocational education, the optimum roles suggested were development of specific job skills; service to an older, more highly motivated and job-ready population; and provision of training for jobs requiring postsecondary training. One individual suggested the creation of vocational centers that could also serve secondary students with training in classrooms and in cooperative arrangements with business and industry. The strengths of postsecondary vocational education noted by the respondents included technical capacity and facilities, flexibility, linkages with business and industry, and good support services. A third respondent said that vocational educators should rely less on federal dollars and that business/industry should provide monies to vocational education. Still another respondent stressed that the federal government should play an information role (by telling schools and states what works and what does not work) and should promote equity. The same respondent was in favor of states' providing performance-based incentives to reward institutions and organizations that coordinate with other agencies.

When addressing the issue of coordination and articulation between secondary and postsecondary vocational education, some respondents indicated that this process could and should take place at the local level. Another respondent commented that coordination occurs as a result of a mandate or a crisis and that there are no readily apparent benefits to secondary-level personnel for working towards articulation. Most of those who felt that secondary vocational education should provide technical skills thought secondary and postsecondary vocational education must necessarily be duplicated to be able to serve all ages. They also felt that learning accomplished at the high school level should be recognized and credited by postsecondary institutions.

The suggested, ideal roles to be taken by the federal and state governments in regard to vocational education varied widely. One respondent said the federal government should set policy and goals, and the state should be responsible for setting standards. Another said the federal government and the states should be equally involved in secondary and postsecondary vocational education, but that states needed to attend more to the postsecondary level to ensure that access to programs is geographically equitable.

## Appropriate Roles in Addressing National Needs

Clearly, the Delphi study respondents felt that secondary and postsecondary vocational education should address different national priorities and needs. Youth unemployment, equity and access, and basic skills were the top priority problem areas or

needs where secondary-level vocational education was deemed to have an appropriate role to play. Problems or needs associated with displaced workers, high technology, and critical skill shortages were seen as the top priority areas that should be addressed by postsecondary-level vocational education.

In selecting these particular areas, the survey respondents seem to be suggesting that in general, secondary vocational programs should improve their capacity to focus primarily on what are longer term educational needs and outcomes. Postsecondary vocational programs, on the other hand, should focus on what appear to be more immediate needs of the labor market for skilled technical workers.

## The Contributions of Secondary-Level Vocational Education

Youth unemployment. Because secondary-level vocational education is a part of the compulsory education system through which almost all youth must pass, it has the opportunity to provide early interventions such as counseling, occcupational information, and training that may help to alleviate employment problems for some youth. The respondents suggested that because secondary vocational education is charged with educating and preparing students to become productive and contributing members of society, and because the instructional process or approach of vocational education appeals to the learning style of many students, it is in a good position to have a positive impact on many of the problems of youth unemployment. In general, the respondents felt that vocational education at this level should ensure that its programs reflect labor market needs and that it should provide motivation, occupational information, and an appropriate foundation for further training and employment.

The respondents noted the following among the changes that secondary-level vocational education would need to make to better fulfill these functions: improving the quality of training and ensuring that it is better oriented to actual employment possibilities; integrating basic skills with general and occupational skills; helping create a more comprehensive system of education at the secondary level with larger, more flexible organizational patterns; linking on-the-job learning with in-school instruction; and increasing the coordination and cooperation within the broad educational and counseling functions of the school with business and industry and with local government.

Equity and access. Equity and access were felt to be high priorities for secondary vocational education. The Delphi study respondents suggested that if steps are to be taken to promote equity and access, the secondary schools are the position to

do it and it must be done before students drop out of the educational sequence. It was also suggested that better quality vocational programs are needed (especially for less able students) in order to help ensure their access to and ability to compete for jobs in the labor market. One respondent noted that, "It is important at the secondary level to begin to plant the seeds for minorities, handicapped, disadvantaged, and both boys and girls to consider opportunities that previously they may not have regarded as reasonable goals for them."

In the comprehensive high school, vocational education should seek better integration of college preparatory students and vocational education students. "The vocational program must neither become a dumping ground for less able students nor an elite preserve." Vocational education must take advantage of the fact that, at the secondary level, its program "is still largely an elective program and members of all groups can participate in it and, it should make it possible for students to perceive themselves in a variety of occupational roles, to provide youth with an opportunity to explore these different roles, and to provide them with support and assistance when and if they choose a non-traditional role."

In order to facilitate secondary vocational education's ability to address equity and access goals more effectively, the respondents suggested that administrators and teachers need to examine their own attitudes and values with regard to these goals and to alter them if needed. One respondent noted that "legislation should provide fiscal incentives for integrated programs in which students from all social classes will be represented, rather than encouraging their separation as is the case in present legislation."

Basic skills. A focus on basic skills development by secondary vocational education was considered to be a high priority. One respondent's comment that seemed to capture much of the sentiment of the group was the point that "a refocus on this area would be the best investment for reducing youth unemployment." Basic skills for employment were felt to be paramount to youth. In particular, basic skills were considered essential at this point in the educational process as younger students have not yet acquired all of the communications skills needed for life and work.

It was also pointed out that since part of the unique value of vocational education is in its being a process of learning, and since learning should go from the simple to the complex, vocational education could encourage acquisition of basic skills so that students could then move on to acquiring occupational skills. Another respondent suggested that

Vocational education can also engage students in cooperative projects that bring them in contact with people who are different from themselves, where they must interact and cooperate as a team to complete their projects, where they must listen to get instructions straight, where they must communicate with quantitative symbols, and where they must prepare memos and engage in written communication to succeed.

Because vocational education can serve as a motivating force for student learning and because "the teachers are practical as opposed to theoretical in their approach," one respondent felt that secondary vocational educators could deal effectively with basic skills acquisition. Secondary vocational educators can provide "a practical arena where the connection between basic skills and job demands is more clearly apparent to young people."

Suggestions on the changes needed in order for secondary vocational education to deal better with basic skills acquisition included the following:

- Development of "standarized measures" of basic skills by occupational area. Such measures, it was felt, could serve as "quality control" measures.

- Access to business, industry, and public agencies so that vocational activities can be carried out (to the extent possible) in community settings and can help to ensure that students are better able to see the relevance of basic skills to occupational and community requirements.

## The Contributions of Postsecondary-Level Vocational Education

Displaced workers. The needs of displaced workers were rated as the highest priority problem area that should be addressed by postsecondary-level vocational education. One respondent explicitly noted the close interrelationship between the problems of displaced workers and the problems of productivity growth and economic revitalization.

The "flexibility" of postsecondary institutions in responding to the training needs of adults was cited as a key reason why postsecondary vocational education has an important role to play in meeting the needs of displaced workers. For example, postsecondary institutions are felt to have the necessary flexibility or "elasticity" to accommodate large

numbers of adults who may periodically seek training due to such emergencies as local plant closures.

One respondent noted that because the problems of displaced workers may take on increased importance through the remainder of 1980s, those problems should be a primary focus of postsecondary vocational education. Because of the growing needs of displaced workers, one respondent felt that the 1980s could become the "golden age" for postsecondary vocational education. It should play an "assertive role" in becoming a part of the "rebuilding fabric" for displaced workers; it is "the natural resource" for retraining displaced workers.

Among other things, postsecondary institutions were urged to seek out displaced workers and provide training in new and emerging industries and occupations. Additionally, it was suggested that postsecondary institutions provide counseling and personal assessment to assist displaced workers in identifying their "transferable skills," refer them to suitable training opportunities, and assist them with placement in other types of employment.

Among the special characteristics and capabilities of postsecondary institutions that should enable them to address these problems and needs, the following were noted:

- The capability to provide instruction "around the clock" with personnel drawn from education, labor and industry
- The adult environment for training, and the regional availability of institutions
- The greater resources felt to be available for adult career counseling and placement services

The respondents felt that a number of changes are needed in order for postsecondary institutions to be more responsive to the needs of displaced workers. Here are a few examples:

- Working more closely and cooperatively with employers, private agencies, vocational rehabilitation agencies, CETA programs, employment services, and other community-based organizations.
- "Tuning in" to local labor market phenomena and the key actors in the local labor market.
- Providing for such special needs of displaced workers as job search skills and assistance and remedial education.

- Developing mechanisms to respond quickly and effectively to unplanned disruptions in local labor markets such as plant closings and lay-offs.

- Convincing state and local policymakers and officials that postsecondary vocational education is flexible and capable of meeting the needs of displaced workers.

- At the local level, institutions are going to have to be able to demonstrate a greater open-entry open-exit concept. Secondly, local programs are going to have to show the capacity to enroll both secondary and post-secondary level adults into the same program where training stations are available. Third, the local level will have to learn how to run programs on multiple shifts.

- At the state level, it will be required that caps be taken off of programs in growth areas. Currently, the greatest drawback that public postsecondary vocational education has in serving the displaced worker is that states have placed a uniform cap of growth on programs, and thus prevented enrollment expansion, particularly in those occupational programs that could lead to employment.

- At the national level there needs to be an effort to link the United States Employment Services and vocational education closer together so that displaced workers, very early in their unemployment, are enrolled in a training program rather than waiting until unemployment benefits have expired. Secondly, there has to be a recognition that existing postsecondary level institutions are operating, for the most part, at maximum capacity, and there has to be federal investment in expanding the capacity of programs. Thirdly, the national level has to give some leverage to states to allow growth and expansion of postsecondary-level vocational programs for displaced workers.

High technology. The survey respondents noted that training requirements for high-technology areas are changing rapidly, that training in many areas of high technology requires a firm foundation in mathematics and science, and that higher education and postsecondary institutions are the appropriate and most realistic places for providing this training. More advanced instructional content, together with experienced faculty, and appropriate equipment and facilities, should make it possible for postsecondary programs to provide effective training for high-technology occupations.

To provide the trained technicians needed for these occupations, postsecondary-level vocational programs will need to translate research results into step-by-step operating instructions that will be useful in defining the scope and content of high-technology jobs for which training is needed. They will also need to develop state programs to tie vocational programs closer to the development work of colleges and universities and make more extensive and better use of advisory committees.

Critical skill shortages. Because many areas of critical skill shortages are in high-technology fields, postsecondary vocational programs have a related role to play in this area. The respondents felt that postsecondary vocational education institutions will need to determine where critical skill shortages exist, close out programs in which a demand no longer exists, and build their instructional capacity in conjunction with other postsecondary institutions and the private sector in order to provide specific technical skills effectively in areas where critical shortages exist.

Postsecondary vocational programs have demonstrated flexibility in program planning and management and the necessary diversity of program offerings, faculty, and equipment to respond to critical skill shortages. Additionally, the respondents felt that many adult students in postsecondary institutions are there because they are ready to enter specific occupations as quickly as possible--"they know what they want and where they are going."

Among the changes respondents felt were needed in order for postsecondary vocational education to improve its responsiveness to critical skill shortages were the following:

- Greater leadership and emphasis on practical experience as a part of instructors' credentials and institutional hiring criteria.
- Greater program and management flexibility to meet relatively rapid changes in skilled worker demands better.
- Provisions for both short-term and long-term training opportunities.
- Greater cooperation with business, industry, and public organizations.
- A commitment not be tied too tightly to existing offerings, equipment, or faculty.
- At the local level, greater emphasis on the needs of individuals and of the work place as opposed to the needs of the institutions must prevail. Secondly, dollars

that can be utilized to begin new programs, to mount short term programs, and develop employer specific programs must be available for local managers. Third, local level managers must have the ability to state whether or not they can meet the needs of a given or expanding industry.

- In regards to state level changes, encouragement, leadership, and support curriculum development will be needed if local postsecondary programs are to have the flexibility, the start up capacity, and the resources needed to address critical skill shortages in a timely and efficient manner.

- At the national level, federal dollars that support critical skill shortages that are essential in the nation's defense and economic growth must receive federal support. States are more likely to fund programs that meet their standard formulas of allocating funds through full time enrollment equivalence and are less likely to have a funding pattern for funding programs for preparing people for new and expanding industry, and for mounting short term intensive programs for addressing areas of critical skill shortages. There must be some direct funds to provide these kinds of programs. Increasingly it will require the states to also set up flexible funding patterns to support such efforts as well.

## Strengths and Emphasis of Other Key Agencies and Programs

### Apprenticeship

The optimum role as described by the Delphi respondents for apprenticeship programs was as the provider of specific job training in skill areas that are technical in nature but still require a great degree of discretion. Apprenticeship programs, more than any other program, are expected to provide primarily technical job skills training. The strengths of the apprenticeship system include the partnership arrangement (earn and learn); the provision of classroom training in related areas; the on-the-job nature of learning, and the relevance of training to the work place.

### Training Provided by Business and Industry

The Delphi survey respondents felt that training by business and industry was optimally for work skills needed on the job. It

might also be upgrading in nature, or be in response to the development of new technology. Ideally, it is interfaced with the education community in order to ensure quality. The strengths of training provided by business and industry are that knowledgeable trainers address real needs, that the training is practical and relevant, and that there are incentives to learn.

## Proprietary Schools

The optimum role for proprietary schools, according to the Delphi respondents, is the provision of technical job skills and specific job training in areas not addressed through public postsecondary programs or apprenticeship programs. Their strengths lie in their ability to quickly adapt to market forces, their strong links with employers, and their programs designed specifically for employment.

## Military Job Training

The Delphi survey respondents felt that military training is designed optimally for the specific needs of the military. One respondent noted a remedial emphasis available in military training and another noted the optimum role of military job training would include transition services to the nonmilitary sector. The strengths of military training are seen to be the nature of its mission, its controlled environment, the fact that students earn and learn at the same time, the use of competency-based instruction, and an ability to invest substantially in curriculum development because of the size and resources of the military establishment.

## Government Training Programs

The optimum role described for CETA by the Delphi respondents was as a coordinator and broker of training for unique, at-risk populations. Special attention was focused on the provision of basic skills, work values and attitudes, labor market information, and specific occupational skills. The strengths of CETA were indicated to be their ability to leverage resources from a variety of sources to help their students, their single-purpose function, and their capacity to provide supportive service.

The optimum role of the Job Corps, was described by the respondents as a highly structured alternative education and training program for those needing residential and multifaceted programs. The strengths cited included the controlled environment, the targeted population, and the ability to motivate learners.

For community-based organizations respondents noted the distinction between the storefront types of program and national programs and organizations. The optimum roles mentioned were job attitude and basic skills training, working with whole families, and a broad-based approach to making a person employable. The strengths of community-based organizations are in their service to persons not served by other systems, their community involvement, and the provisions of important role models.

## SOME IMPLICATIONS FOR THE FUTURE

A number of themes and issue areas are evident throughout the Delphi results and in much of the literature reviewed by the project that seem to have important implications for the roles and functions of vocational education. This section attempts to summarize briefly several of the major themes and issues, to describe some of the alternative positions or arguments related to them, and where possible, to identify some of their potential implications for vocational education.

### The Role of Vocational Education as a Component of the Public Education System

#### General Versus Specialized Skill Development

A key unresolved issue is the appropriate role of secondary-level vocational education and whether it should give greater emphasis to more generally applicable skills or to more specialized job skills. As noted earlier in the report, severe national problems growing out of declining economic development and productivity growth, and rapid and dramatic technological changes and occupational developments are affecting the nature and content of many jobs and the skills and training needs of workers.

Many believe these changes promise to increase work specialization, with its attendant need for highly specialized skill development, and that this requires vocational education to emphasize the more immediate and pressing employment needs of individuals and society. Others believe that these economic conditions and technological changes require higher levels of basic skills and that the appropriate role of secondary level vocational education is to emphasize development of basic and generally applicable skills.

Another set of equally severe problems grows out of the widespread belief that the public schools have not done an adequate job of providing a good basic education to students. As noted above, this is felt to be occurring at exactly a time when life and work are demanding even higher levels of skills in basic subject areas. This set of problems is reflected in long-term declines in scholastic aptitude test scores and in employer complaints about the lack of basic skills and abilities among new entrants to the labor market. It has resulted in a strong "back to basics" movement throughout the nation and in the adoption of minimum competency standards for graduation in many states. It is putting additional pressure on secondary level vocational

education to strengthen longer-range educational goals and to emphasize its role in improving the broad educational preparation and basic skills achievement of students.

While this report cannot say precisely what proportion of vocational educators support the emphasis of specialized skill development at the second level of vocational education, that proportion is probably substantial. In an earlier section of the report, it was noted that many feel that our "underinvestment in human capital accounts for current woeful rates of productivity growth as much and perhaps more than our underinvestment in machine capital" (Carnevale 1981). Like Carnevale, they feel that "if we want to increase economic returns from human capital investment, that investment must be more job specific" (p. 4). Vocational education, it is argued, should give primary emphasis to highly specialized skill development. The more these job-specific skills can be tied to particular employers, pieces of equipment, or production processes and the more they can be emphasized in vocational education programs, the better.

There seems to be little question that this position and direction has many supporters among vocational educators in an increasing number of states where "customized vocational training," "industry-oriented programs," and "made-for-industry" training have sprung up and are receiving considerable support and backing.* Moreover, Stuart Rosenfeld (1982) is alarmed by the few complaints expressed about the fundamental shift in purpose from education to training represented by the emergence of these types of programs.

Perhaps the most recent example of vocational education's expected responsiveness to national economic needs and the related need for specialized skill development is reflected in the Vocational and Adult Education Consolidation Act of 1982 (S. 2325), a bill introduced in the United States Senate in March 1982 by Senator Orrin Hatch. The purpose of the act is to authorize state and national programs that will promote economic development. Part A--"Economic Development and skilled Work Force Training"--for which at least 30 percent of the appropriated funds must be used, has as its purpose assisting states "to provide vocational education programs, projects, services, and activities that foster state and local economic development by training persons in the occupational skills needed by business and industry" (p. S3196).

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*See, for example, the analysis and description of statewide efforts in Mississippi, South Carolina, North Carolina, Oklahoma, Colorado, and Massachusetts provided by Stevens (1982).

In introducing the bill to the United States Senate, Senator Hatch (1982) highlighted its purposes as follows:

- Development of vocational skills and basic skills for persons whose employment would sustain or improve work force productivity and economic growth
- Modernize vocational and adult education delivery systems to better meet the national need to provide trained individuals for employment related to national economic growth and development
- Redirect federal support to focus on the role of vocational and adult education in economic development
- Bring vocational and adult education more in tune with our economic needs (p. S3193)

Nevertheless, it was noted in the previous section that the preponderance of the evidence from the Delphi surveys suggests that there is a growing consensus that secondary-level vocational education should give greater emphasis to improved educational preparation and basic skills achievement. Support of this position is also found in a growing body of literature and research.

Those holding this view seem to feel that, while occupational skills preparation should be provided, at least through high school vocational education should emphasize educational objectives. Individual student growth and development should be the focus with the aim being to prepare youth for a lifetime of work in a dynamic economy where the only real certainty is the certainty of change itself. Those advocates believe that education is the end and the primary purpose of secondary vocational education is "to promote full human development through exposure of the learner to work experience as part of the education process" (Silberman 1982, p. 299). For example, as Silberman sees it, "the purpose of the work is to further the education of the student; the work is subordinate to the education process; it is work for education" (p. 299).

Among all the various education and training programs for work, secondary school vocational education is felt to be unique in that "no other occupational training system seeks to enhance general education" (Evans 1982, p. 267). Evans notes that only 30 percent of secondary vocational education is classified as "occupational" and that vocational high school students spend one-half to three-fourths of their time in general education classes. As Walsh (1979) points out:

Vocational education for students who have not yet entered the labor market on a full-time basis is

> only one component of a total education program--a component that stresses preparation for employment. The immediate objective of such a program is not economic but educational in nature . . . it is exploratory in nature, because one of the principal objectives of education is to increase student options. This does not mean that students should not be trained in specific occupations . . . but skills training is not the sole objective--or even the most important objective--of an education program with a vocational component. (p. 238)

Paul Barton (1981) suggests that federal policy should capitalize on this unique educational capacity. It should "encourage the maximum integration possible between vocational instruction and general education" (p. 19) because this would increase general education opportunities for those terminating their education with high school and expand vocational offerings to those planning to go on to postsecondary education.

Lester Thurow (1979) believes that vocational education should offer development of saleable skills in some areas. But he also feels that the literacy standards and standards of "industrial discipline" for vocational education students must be as high or higher than those of students who come from academic education tracks.

Barton (1981) feels that the first priority is for vocational education to "be good education--in reading, in writing, in computing, in listening, and in problem-solving" (p. 9). It has a responsibility, he feels, for ensuring that young people are equipped with the basic skills needed for employment, as well as for life. "No one who talks with employers can miss getting the message that they are concerned about basic skills and count them as much a part of employment preparation as specific occupational skills" (Barton 1981, p. 68).

Ironically, some of the greatest interest and concern about the educational goals and effects of vocational education seems to come from the public and, in particular, from employers in business and industry. Consider, for example, that in a recent survey of 775 manufacturers and members of the National Association of Manufacturers, Nunez and Russell (1981) report that few of the respondents selected support for economic development or increased collaborative retraining efforts as areas of vocational education that most need improvement.* Instead, 63 percent

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*These results do not necessarily mean the respondents do not endorse these activities; they may think that other improvements are more important, and/or that vocational education is already doing an adequate job in these areas.

stressed teaching of the basics as the most important improvement that secondary vocational education should make. Moreover, 40 percent also felt this was most important for postsecondary vocational education, as well. As Nunez and Russell point out:

> Many manufacturers believe that the young population's mastery of reading, writing, and computing skills is unsatisfactory. Basic skills, employability skills, and occupational skills are all seen by manufacturers as important employee attributes . . . are regarded as vital preparation for work . . . and are not perceived as mutually exclusive. (p. xi)

A broad-based survey (McKinney et al. 1981) of over 5,000 respondents in 62 local education agencies in seven states reports that "in general, job-related placement is not believed to be the primary purpose of secondary vocational education programs by educators, students, parents, or employers" (p. xix). The survey found that the greatest percentage of respondents ranked the goals of secondary vocational education in the following order of descending importance:

1. Provide skills needed to obtain a job
2. Create awareness of various occupations
3. Provide an opportunity to explore various jobs
4. Place students in jobs related to training
5. Place students in jobs not necessarily related to training

Useem (1982) reports that, much as with other employers across the country, "high technology executives believe that schools are not doing a particularly good job in training students in basic subject areas" (p. 26). She further reports:

> Although educators accuse industry of wanting to turn their schools into narrow technical trade institutes, what employers want first is students who have thorough grounding in writing, reading, mathematics, science, problem solving and critical thinking. (ibid.)

Peter Elliman's (1982) comments at the annual vocational educator's workshop in Florida allow us to look behind some of the survey statistics and gain insight into how some employers feel about vocational education. Elliman is general manager of Lucas CAV FIE, a multi-billion-dollar, international conglomerate with operations in thirty-five countries. Elliman notes that

> As I look at vocational schools, I'm a little concerned with some of the things I've seen that you're attempting to do, concerned that vocational schools are overarching themselves [emphasis added]. We were talking last night

about training in laser technology. I've never yet met vocational teachers who were qualified to teach laser technology. I say that because I have a great deal of difficulty with that area in industry, and we work every day trying to keep up with the technology. Why are you concerned with that? Surely your role is to teach the basics, and not to get that far advanced into all these peripheral areas. . . . Your role as a teacher is to maximize the potential of any individual. I believe that is your only goal. Whether the potential for a student is to become president of the company or to be a dishwasher, your job as an educator is to get the most out of that person. (p. 14)

Moreover, such highly specialized skills have limited application and use. The more specific they become, the less transferable they are to other occupations. Thus, it is argued, that heavy emphasis of highly specialized job skills at the secondary school level can significantly reduce or restrict student work-related options. Moreover, as Stuart Rosenfeld (1982) points out:

> The more specialized and technical the skills, the more difficult it is for the public schools to stay current with rapidly changing technologies--to the point where even vocational administrators are wondering how they can keep pace. Equipment and course materials grow obsolete quickly. (p. 47)

These problems have been well documented in two recent studies conducted by Useem (1981 and 1982) and they are cited in the References to this report.

Thus, it is argued that the idea that one set of occupational skills can be learned once and should last a lifetime is no longer valid--if indeed it ever was valid. Rather, there is a need to help students prepare not only for a job, but for work careers characterized by change.

While schools cannot prepare students for all unknown future contingencies, it does seem reasonable to expect them to help students develop generally applicable, transferable skills and individual attributes to levels of proficiency useful in a wide range of situations. By such development they may be adaptable and better able to perform successfully in changing environments. Additionally, to the extent that students are able to transfer their skills and knowledge effectively, the time and costs associated with supplemental training or retraining should be reduced and should reflect a savings to employers and individuals alike (Pratzner 1978).

Perhaps most importantly from a practical perspective, it is argued that it doesn't make sense for vocational education to focus on specialized skill development at a time when jobs simply do not exist. A national unemployment rate currently averaging a record 10.7 percent--with every likelihood that it could go even higher in the next months--together with projections for significant national economic recovery ranging from five to seven years in the future, mean that specific jobs are not now available and are not likely to become available for some time in the future.

Under these conditions, it is argued that vocational education should strengthen development of broadly applicable, fundamental skills (e.g., reading, writing, speaking, listening, computing, science, problem solving, critical thinking, decision making) that are likely to be needed for effective performance in a wide range of new and emerging occupations when the economy turns around and jobs do become available. A recent National Assessment of Educational Progress (1982) report points out that these kinds of skills, now considered "high level" by educators, are likely to become "basics" for workers in the future. The report cautions that, "clearly we are not cultivating the raw materials--our future workers--who will be vital both for economic progress and ultimately for economic survival."

Robert Taggart (forthcoming) notes that "basic academic competencies are a determinant of success in even a tight labor market, but these skills become more critical in a recession when employers push up their credential requirements" (p. 11). He feels that economic conditons have changed so markedly in the last two years, they have altered the needed prescriptions. "It now makes sense to . . . prepare for future jobs through education rather than for immediate jobs through training. . . . Whereas occupational skills training can be wasted if there is no immediate placement in training related employment, education can be stockpiled because it is transferable" (p.12). Taggart recommends that

> Given what we know about the importance of education in the employment equation, and the logical imperative of focusing on transferable competencies in a slack labor market when specific jobs are not available, the most obvious large-scale initiative should be a national "Competencies Crusade" which would provide basic skills for the up to 30 million adults and young adults who are functionally illiterate. . . . . A national, state, or local "Competencies Crusade" would . . . prepare the work force so that five years from now when the economy recovers, when there are few entry workers, and when the new growth occupations become clear, workers will be ready to take advantage of the opportunities. (p. 16-17)

## The Role of the Private Sector in Public Vocational Education

A major issue closely related to the issue of whether secondary vocational education should emphasize general or specialized skills concerns the appropriate role of business, industry, and labor in secondary school programs. While this issue does not appear to be as pervasive or devisive an issue as the skills issue discussed previously, several authors note the need for cautious and thoughtful consideration of the involvement of the private sector.

Historically, business, industry, and labor have played a significant role in shaping public vocational education. Their continued involvement is felt by many to be critical if vocational education is to keep current with the latest technological and occupational developments in the labor market.

It was pointed out earlier in this report that the need for continued and improved coordination, articulation and involvement of business, industry, and education is highlighted by a growing fear that development of this nation's human resources is not keeping pace with rapid developments in other areas. A serious and growing imbalance between available jobs and trained technical workers may stifle the rapid application of high technology and choke national efforts aimed at economic revitalization.

The Joint Economic Committee of the United States Congress (1980) feels that increased involvement of business, industry, and education is needed for occupational training to keep current with the latest technological and occupational developments in the labor market. They note that labor market changes

> Suggest the need for continued examination of the relationship between work and education . . . new links must be forged between education institutions, training programs, and private employers. . . . The future employment market will require not only competency in the basic skills, but also attention to increasingly complex job related skills that enable employees to adapt to changing technology, employment patterns and job opportunities. (p. 26)

In hearings on the reauthorization of vocational education before the United States House of Representatives, Anthony Carnevale (ASTD 1982) testified on behalf of the American Society for Training and Development that, "the content of training intended to be responsive to specific job needs should be governed by the training specifications of employers" (p. 2). He went on to say:

> Employers are the ultimate consumers of vocational training and should be the principal influence over curriculum content in education and training for occupations. In order to close the gap between skills taught by vocational education institutions and job specific skill requirements, ASTD favors a range of incentives to promote greater collaboration between vocational education institutions and private firms.

On the other side of the issue, Silberman (1982) feels that

> The assumption that greater cooperation of education, training, and employment services with business and industry will reduce unemployment and better match the supply of skilled graduates to the needs of the labor market, makes education and training the servant of the labor market; it is education for work. (p. 298)

While Paul Barton (1981) feels that to serve students, secondary vocational education has to equip them "in light of what works in the market place" (p. 9), he agrees with Silberman. He feels that "twelve years of education is for more than just finding a first job in the skill that was studied last in high school" (p. 16). He also notes that

> Education is responsible for making independent judgements about what constitutes an education, and in no way should become subservient to narrowly defined needs of individual employers. Its aim is vocational preparation to launch a lifetime of work, not to shape a worker for a narrow set of skills good for only one employer. (p. 10)

In his discussion of customized, industry-oriented vocational education programs, Stuart Rosenfeld (1982) cautions that:

> It would be unfortunate if this impoverished, big-business oriented form of vocational education became the goal of all programs, particularly in the high schools where aspirations and attitudes are the stock in trade and opportunities can be so effectively expanded or cut off. And it would be sadder still if public funds earmarked for schools were diverted to programs that can barely be called "education", for companies that are not particularly interested in anything but higher profits. (p. 48)

## Secondary and Postsecondary Articulation

Improved articulation between secondary and postsecondary vocational education is a major area of concern with potentially significant implications for the future. Most of the Delphi survey respondents and much of the literature and research suggests that cooperative training programs between vocational education and business and industry are effective ways to provide occupational preparation. Most seem to agree that while these kinds of training arrangements are fairly common, they can and should be extended and improved. Less common, and at least equally important, are cooperative job training provisions between secondary schools and postsecondary community colleges and technical institutes.

Two related reasons for seeking greater articulation between secondary and postsecondary vocational education were noted.

First, the emergence and growth of two-year, postsecondary institutions, beginning in the late 1950s and early 1960s, significantly broadened the institutional context within which public vocational education operates. With the growth and accessibility of two-year, postsecondary institutions, high school has become less of a "terminal" education program than it once was for many students. While it is true that many students drop out before completing high school and others leave high school for immediate employment, many go directly into two-year postsecondary programs, and many others return at a later time to two-year institutions or combine employment with a postsecondary education.

In fact, Campbell, Gardner, and Seitz (1982) point out that "a majority of high school graduates, both vocational and nonvocational, enroll in some type of postsecondary program" (p. ix). Moreover, these investigators report finding "no pattern of significance that suggested that more intensive vocational preparation [in high school] was systematically associated with reduced levels of postsecondary attendance" (p. ix).

The fact that high school is no longer the "terminal" education program it once was, together with the growth of two-year, postsecondary institutions and a range of other education and job training opportunities available to adults (e.g., apprenticeship, military, and business and industry training programs), has two related consequences. First, it points out that vocational education in the United States has developed, by and large, into an adult enterprise. Second, it highlights the need to clarify the role and function of vocational education at both secondary and postsecondary levels.

In the United States, youngsters who are not going on to college and professional careers can simply wait until they get older and leave high school to obtain formal preparation for work, they can try to obtain part-time work while still in high school and hope to learn skills and knowledge that can lead to full-time work in decent jobs, or they can enroll in a high school vocational education program. Secondary level vocational education is virtually the only formal system of job training available to youth in this country. It is the mainstream system for youth to obtain education and training for work that requires less than a baccalaureate degree.

While there are other avenues to "employment" for youth--such as through family connections or part-time jobs--there are no other avenues to education and training for work for the great majority of youth in this country who have not yet reached the age for high school graduation. All of the major job training programs, such as those offered through apprenticeship, the military, employers, proprietary schools, and community colleges are adult programs. They are only available to adults or to older youths who have completed high school and/or are at least seventeen-to-eighteen years of age.

For a minority of youth whose family income is below the federal poverty level, Job Corps and other training programs are available under CETA. However, CETA programs are only available to eligible participants; they are primarily employment rather than training programs; the options, duration, and quality of the training actually provided through CETA is minimal and largely of a remedial nature; and those most knowledgeable about CETA training now call for greater reliance on and use of mainstream institutions and training programs to provide preparation for work (Taggart 1980).

Second, tight money supplies at all levels, declining school enrollments and new entrants to the labor market, problems associated with replacing obsolete equipment and facilities with new and expensive technology, and the difficulties of retaining high quality faculty in the face of higher salaries and improved benefits in business and industry are among the practical concerns that seem to many to mitigate against high quality, specialized skill training within secondary schools. Instead, far greater consideration than has been the case to date should be given to cooperative types of arrangements for technical skill training.*

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*An examination of various kinds of cooperative arrangements among several types of job preparation institutions is provided in the commissioned paper prepared by Paul Barton, and included in Appendix B.

Third, much of the literature and the Delphi surveys suggest the kinds of distinctions between secondary and postsecondary vocational education as shown in figure 2. These kinds of distinctions reflect the position that because specialized skill training typically is located at the end of general education, much of specialized vocational skill development should occur at the postsecondary level. These distinctions suggest further that perhaps vocational education is best thought of in terms of an individual's developmental process. This process extends beyond the bounds of either institutional setting, and while secondary- and postsecondary-level vocational goals and programs are quite different, it is these differences

| Secondary | Postsecondary |
|---|---|
| • This level of program is driven by individual needs; it tries to match programs to individuals; its goal is educational; its program is exploratory. | • This level of program is driven by labor market needs; it tries to match individuals with programs; its goal is training; its program is specialized job skills development. |
| • To meet its goal, the program must--<br>(a) be suited to individual needs, interests, and abilities, and<br>(b) offer the widest possible range of occupational experiences. | • To meet its goal, the program must provide specialized technical skills related to actual and anticipated opportunities for gainful employment. |
| • If it increases student options and is suited to individual needs, interests, and abilities, then students completing this program should be expected to pursue a very wide range of employment and educational options. | • If the program meets society's needs for skilled workers and is related to actual and anticipated opportunities for employment, then graduates should have high placement in occupations related to training. |

Figure 2. Distinctions between Secondary and Postsecondary Vocational Education

that permit the two levels of programs to be viewed as complementary components of this larger individual development process and of a larger instructional sequence. Thus it would seem that neither secondary nor postsecondary vocational programs alone are sufficient. Instead, provision of a broad-based vocational education program can be viewed developmentally and both levels of programs can compliment each other as logical components of a coordinated and articulated instructional sequence.

Secondary schools might consider supporting and making greater use of the faculty, facilities, and programs of these postsecondary institutions for their students who seek specialized job preparation. Cooperative arrangements can be made whereby these students can leave their high schools for parts of days and/or parts of years to obtain specialized job training at nearby community colleges and technical institutes.

Among the potential advantages of such secondary-postsecondary cooperative training programs are the following:

- Potential cost reductions realized through consolidation and elimination of unnecessary duplication of expensive faculty, equipment, facilities, and programs at both levels

- Greater coordination and articulation between secondary and postsecondary curriculum and instruction leading to greater training efficiencies as reflected in such things as credit and advanced standing for high school students in subsequent postsecondary-level training, and the reduction of duplication and wasted instructional time for both students and institutions

- High school students learning adult job skills in adult environments surrounded by and interacting with appropriate adult role models

- More instructional time and resources available at the secondary level so that vocational education can be available to all students as an alternative instructional technique for improving broad educational and career objectives such as improving technological and economic literacy; application, practice, and transfer of basic skills to practical pursuits; development of appropriate work values, attitudes, and habits; knowledge of one's interests, abilities, and needs; career choice and knowledge of how to access further education, training, or employment effectively; and development of avocational interests and skills

## The Role of Vocational Education as a Component of the Nation's Job Training System

One of the most important and least understood roles of vocational education is its role as a component of the nation's decentralized education and job training system. As the nation enters the decade of the 1980s, it does not have a "coordinated" system to provide education and training for work, nor does it have a "comprehensive and unified" human resource development policy to guide its efforts in meeting the employment and training needs of its citizens.

Instead, it has developed a wide array of diverse and essentially independent, uncoordinated employment and training-related agencies, programs, and services. These include the key agencies and programs that were discussed briefly in the previous section.

Collectively, these agencies and programs are a very large and very diverse enterprise spending billions of dollars annually. Such huge diversity in programs and services is not necessarily bad; it can contribute to the broader goal of providing multiple service deliverers at the local level so that individuals at different ages or stages of their lives have options that meet their specific developmental and employment needs. But much of the potential value of this diversity may be lost because of the independence with which they operate and the apparent lack of models, incentives, or mandates for effective collaboration, cooperation, or linkage.

Moreover, the smorgasbord of extant programs and services complicates development of a comprehensive policy for human resource development and contributes to the creation of a "vicious cycle." On the one hand, as noted by the National Commission on Employment and Unemployment Statistics (Frazer 1980), "Inadequate information on the utilization and effectiveness of the education and training programs further hinders the formulation of public policies to promote the effective use of our human resources" (p. 65). On the other hand, lack of a comprehensive human resource development policy may lessen the potential impact and contributions of these programs and services to the education, employment, and training needs of the nation.

Sixteen years ago, Howard Rosen (1966) observed that

> we casually accept the fact that millions of our workers are learning their skills in a haphazard and inefficient manner. As a nation, we have never faced the fact that we were tolerating an unequal training program that was either bypassing millions of future workers or was providing them with inadequate skills and education. The preparation of workers for jobs has been almost left to happenstance. We have tolerated shoddy workmanship and incompetency even though we possess the ability to train the best qualified labor force in the world. (p. 45)

Charles Stewart (1980) expressed many of the same views as Rosen, suggesting that not much has changed in the last sixteen years, and noting that "no other major industrial country evidences such narrowness in training policies and programs or such apparent lack of concern over the risks of failing to take adequate measures for enhancing work skills for productivity and for adaptability" (p. 62).

In Herbert Striner's view (1982):

> Nothing so encapsulates our nation's problems as our traditional shortsighted unwillingness to provide adequate funds for developing the skills necessary for an effective labor force. Refusing to invest sufficiently in all sorts of vocational education and training is more than just being penny-wise and pound foolish. It is refusal to face up to the fundamental requirements of a major technological society: to support the continuing investment necessary to provide an up-to-date, labor force. (p. 24)

Given the magnitude of the economic, technological, and demographic changes in our economy and society, Striner (1980) concludes that

> We must adopt a philosophy, supported by the necessary legislation and funds, which sees education and training throughout our life as an absolutely necessary national investment strategy, or we will continue to be plagued by unemployment, underemployment, low productivity, and inflation. (p. 9)

Silberman (1982) notes:

> Most policymakers agree that the effective development of vocational skills in both young and adult members of our society cannot succeed through the lone efforts of the public schools. The very nature of the task requires the cooperative efforts of employers, unions, government, education, and other community-based organizations, each performing what it does best. The resources and an attitude among legislators that waste all levels. (p. 279)

Taggart (1981) feels that if the employability problems of youth and adults are to be cured rather than simply mitigated, "it is necessary to pay much more conscious attention to, and place more priority on, human resource development" (p. 361). He feels that "there needs to be a new vision of what can be or should be achieved in the future through human resource development" (p. 338).

Taggart, Silberman, and David each offer similar thoughts and recommendations about the need for and development of a comprehensive human resource development policy. In Taggart's view (1981):

> We must begin thinking about long-term impacts and "quantum leaps," not just immediate outcomes and marginal gains. A stable training system is needed rather than an ever changing array of separate training programs. There must be long-term strategies, both locally and nationally, a range of new opportunity tracks . . . quality, not just quantity, needs to be emphasized. (p. 10)

Silberman (1982) feels that "fragmented programs wherein one needs a local coordinating council to put pieces together that should never have been separated in the first place show the need for legislative reform at state and federal levels" (p. 305). He recommends that

> a centralized preventative approach to reducing fragmentation of programs is necessary; there is little hope that local cooperative action will remedy the jurisdictional problems ensuing from proliferating programs at the state and federal levels. . . . If policymakers did a more thorough job, many local problems of cooperation and coordination would be avoided. (p. 305)

Henry David (National Institute of Education 1981) believes that one of the most important signals for program coordination is provided by the Vocational Education and the CETA Amendments of 1976 in the charge given to the National Advisory Council on Vocational Education, the state advisory councils, and the National Commission on Employment Policy. That charge is

> to identify training needs and assess the extent to which all the programs conducted under all the pertinent federal programs represent a consistent, integrated, and coordinated approach to meeting such needs . . . [it] may be said to invite the adoption of a new conception of a comprehensive and unified federal policy for human resource development and employment. . . (p. v-26)

Such a charge poses a formidable challenge. We know surprisingly little about the current structure of education and training opportunities for work and how well this structure serves the needs of individuals and the labor market. It is clear, however, that in a decade of tight money supplies at all levels, shortages of new labor market entrants and declining labor force growth rates, displacement of growing numbers of adult workers, and high rates of unemployment and underemployment, vocational education will need to learn a great deal more

about the decentralized education, training, and employment delivery system of which it is a key part.* This is especially important if vocational education is to capitalize appropriately on the strengths and specializations of various agencies and institutions and to establish effective linkages and articulation for avoiding unnecessary and unplanned duplication and redundancy in the delivery of programs and services.**

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*An important step toward obtaining such information was achieved through the first in a series of Annual Policy Forums conducted by the National Center in October 1981. This Policy Forum was the first attempt to examine comprehensively the contributions of this country's diverse education and training institutions to the common goal of preparing workers for the world of work. The proceedings of the Policy Forum--Job Training for Youth: The Contributions of the United States Employability Development System (Taylor, Rosen, and Pratzner 1982)--provide a single source document of authoritative, in-depth chapters describing each of the key education and training sectors. Each of the chapters was prepared by experts in each sector. The editors have included explicit policy implications and recommendations related to each sector.

** The paper commissioned by this project and prepared by Paul Barton addresses this set of issues related to linkages and articulation among vocational agencies, and suggests a number of potential ways in which linkages could be strengthened. The paper is included as Appendix B.

## CONCLUSIONS

Throughout the report we have attempted to show that economic conditions, technological change, and demographic shifts have had and will continue to have significant effects on the role and function of vocational education. Without a doubt, the dominant effect has been to move vocational education toward greater emphasis on the development of highly specialized skills for specific occupations. Vocational educators are being urged to expand specialized skill training in high technology areas, to play a vital role in state and local economic recovery plans, and aggressively to seek ways to increase the involvement and cooperation of business and industry in their programs.

At the same time, there seems to be a growing consensus among an increasing number of knowledgeable people that the economic, technological, demographic, and educational conditions in the nation require secondary and postsecondary vocational programs to serve different roles and functions. The consensus among this group, though by no means clear and widely articulated, seems to be that vocational education at the secondary level should be integrated better with general education and that emphasis should be on the development of broadly applicable skills useful to all students in a wide range of future occupations. While the focus should be on strengthening vocational education's contributions to general education, preparation in broad occupational areas (rather than in specific jobs) should be available to secondary students who choose it and can benefit from it.

While many seem to support this direction and emphasis at the postsecondary level, the dominant theme seems to be that postsecondary vocational programs should expand their capacity to serve a broader clientele and a broader range of training needs. By and large, postsecondary institutions are urged to work more closely with business and industry to emphasize and improve programs for highly specialized skill development, especially those needed in new and emerging occupations in the service sector and in high technology areas.

It is highly probable that these issues and distinctions will continue to be at the heart of dialogue and debates about the roles and functions of vocational education throughout this decade. It is hoped that this report will help to stimulate and contribute constructively to that dialogue.

To that end, we would like to pose a number of policy implications and questions that have been raised or are implicit in the report. They are not exhaustive lists, merely suggestive of some of the kinds of policy issues and questions that will need to be addressed ultimately, either by conscious choice or by default. Finally, we conclude by noting several areas of needed research.

## Some Policy Implications

If vocational education is to strengthen its technical skill development capacity significantly, a number of policy implications seem evident. At a minimum:

- Substantial federal and state vocational funds must be earmarked for updating and modernizing vocational education equipment and facilities at both secondary and postsecondary levels in order to reflect technological and occupational changes in the labor market adequately.

- Federal legislation should target funds for specialized skills training to those most in need; that is, to displaced and unemployed adult workers and to poor, disadvantaged youth.

- Federal and state vocational legislation must also emphasize and provide funds to supplement salaries for vocational faculty in new and emerging occupational areas in order to make their salaries more competitive with those available in business and industry. Additionally, funds should be earmarked to support a variety of approaches for updating and retraining vocational faculty in new technological developments and occupational changes in their fields of expertise.

- Federal vocational legislation should include provisions requiring close and significant cooperation and involvement of vocational education in state and local economic recovery plans. Included in these provisions should be requirements for demonstrating that vocational education programs are responsive to national, state, and local labor market demands, especially in areas of critical skill shortages, and that they are sensitive to the other sources in their areas that supply trained workers.

- Federal and state vocational legislation should encourage even greater collaboration and involvement than it now does of business, industry, and labor in all aspects of vocational education programs.

If, on the other hand, vocational education is to strengthen its educational role at the secondary level significantly and is to seek to improve the educational achievement of students, then a very different set of policy implications will follow. At a minimum:

- Federal legislation should more clearly define and distinguish the principal roles and functions of

vocational education at the secondary and post-secondary levels, and funding provisions should reflect these key differences.

- Federal and state vocational legislation must emphasize and provide funds for upgrading and retraining vocational faculty in the latest techniques and approaches for teaching a broad range of fundamental skills.

- The evaluation criteria in the current federal vocational law must be revised. Instead of training-related placement and employer satisfaction, alternative measures of educational achievement will be needed as success criteria.

- Federal vocational legislation should include provisions and should earmark funds for secondary and postsecondary institutions to establish joint, collaborative arrangements whereby postsecondary institutions can provide preparation in specific job skills for secondary students who choose to pursue job training and can benefit from it.

- Federal and state vocational legislation should encourage and provide funds for a broad range of research, development and dissemination activities focusing on new and innovative techniques for improving educational skill achievement in vocational education programs and for developing more effective methods and techniques for measuring the educational achievement and outcomes of vocational education.

## Some Questions

- What should be the optimum role and function of each of the major programs or agencies engaged in job preparation? What changes will be required in current programs if these roles and functions are pursued?

- How do the optimum roles and functions of each agency or program influence which problems of national importance and priority will be addressed and how they will be addressed?

- To what extent should these various job preparation agencies and programs be coordinated and articulated? How can greater articulation be achieved?

- What should be the role of business, industry, and labor in public vocational education, and what in particular, should be their role in public secondary vocational education?

- How can public vocational education better measure and demonstrate its labor market effects and its educational effects?

## Some Areas of Needed Research

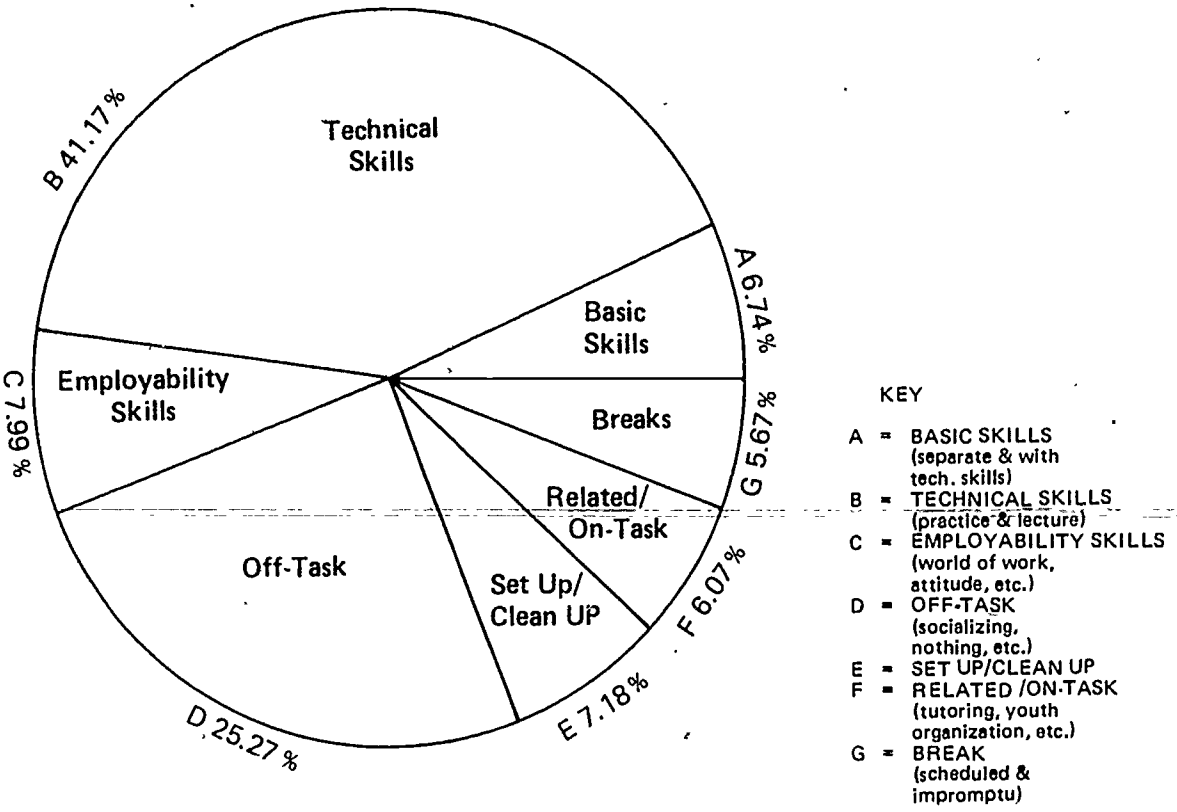
It should be obvious that each of the questions posed in the previous section has a broad research and development agenda implicit in it. Each of these agendas will not be itemized. Instead, two areas will be discussed briefly that were touched on in the report. These two areas especially seem to warrant future research and development by vocational educators.

### The Educational Effects of Vocational Education

There is very little research and evidence related to the educational goals and effects of vocational education. What little evidence is available shows mixed results, and few firm conclusions can be reached on the basis of this evidence.

One reason for the lack of a strong impact of vocational education on basic skills achievement may be that vocational programs currently spend little time on the development of these skills. For example, Halasz and Pehm (forthcoming) report the results of 200 hours of observation of 168 students' time on task in ten vocational education classes. Their results, shown in figure 3, indicate that these students spent very little time on basic skills. In fact, they spent about as much time on "breaks" as they did on basic skills, and slightly more time on "employability skills" than on setting up and cleaning up the shop or laboratory facilities.

A related reason may be the way in which basic skills have been traditionally defined and measured. When defined at all, basic skills are usually defined by example--typically as reading, writing, and/or arithmetic. Sometimes, however, these definitions may include only one of the above skill areas, and other times they may include different sets of skills. Besides the obvious confusion this causes in the rhetoric on basic skills, the more important problem with this kind of definition-by-example is that it does not answer the fundamental question of what makes any skill basic. In the absence of a clear definition of basic skills, much of what is thought and done about their development may be relatively ineffective.




SOURCE: Halasz and Behm forthcoming

Figure 3. Average Percentages of Time Spent On or Off Task in All Classes During Two Weeks of Observation

It seems clear that there is nothing inherent in the nature of skills to suggest that some are basic and some are not. Rather, it seems, it is the range of potential application and use of a skill that allows one to sort out or characterize some skills as more basic or general skills. Obviously, the application and use of a skill can range from specific, limited application and use to broad or widespread application and use.

Thus, basic skills can be defined as those skills having the broadest applications and multiple uses. Potentially, they are highly transferable skills that are useful in a wide range of situations.

Given this definition, it is apparent that what is termed basic skill is relative. There is no fixed list or set of basic skills waiting somewhere to be discovered. Their "basicness" is a function of their range of potential application and use.

One implication of the foregoing definition--versus the traditional definition-by-example--is that more skills should be appropriately thought of as basic skills. Certainly, reading, writing, and computation are important basic skills, but so are listening and speaking, problem solving, decision making, and a long list of others that are useful in a wide range of life and

work settings, but often are not thought of as basic skills. Thus, one line of research suggested by this alternative view of basic skills is the systematic identification of skills needed to perform successfully in a wide range of life and work situations.

The broader definition of basic skills suggested here implies that their development does not fall conveniently into any one program or service area of the school. It is a total school responsibility, not just the concern of the elementary school or of a single discipline area within the school. The risk here is that the combination of the broader based definition and derivation of basic skills with the compartmentalization and disciplinary base of education--especially secondary education--could easily mean that the development of basic skills is not seen as anyone's explicit responsibility. A range of research, development, and policy analyses is needed at the elementary and secondary school level to better identify the specific skills various school programs and levels are attempting to develop, to uncover commonalities among programs and levels, and to develop improved policies and approaches to ensure more systematic development of critical skills.

Additionally, more research and development attention needs to be given to mastery learning and teaching for transfer as ways of increasing the range of functional applicability and usefulness of skills. Renewed research interest should be given to the study of mastery learning and the transfer of learning. At a minimum, it seems highly desirable that schools provide learners with opportunities to reflect on what is being learned and to practice the application and use of skills and knowledge under a wide variety of conditions and circumstances so that the potential for transfer and wider use of those skills in various and novel situations is increased. It also seems desirable to inform learners that skills developed to levels of mastery are potentially broadly applicable skills, and to provide them with a range of examples or instances in which the skills they are developing could be applied. In so doing, learners should be informed of the skills they have acquired, their level of proficiency in those skills, and of skills not acquired or not developed to higher levels of proficiency that represent remaining developmental needs and that should serve as personal objectives for the continuous learning of the individual.

Statewide tests of minimum competencies for graduation are being developed and suggest alternative and perhaps more meaningful and useful definitions of "basic" skill areas. Research and development may be of value to examine minimum competency test results systematically across states that now use these tests. Comparisons of results on these tests with results on more traditional measures of so-called basic skills would be of interest. Additionally, comparisons of the performance of vocational, academic, and general education students within and across states could provide an alternative estimate of the skills achievement and relative effectiveness of high school programs.

## Articulation and Coordination in Vocational Education

The report points out that in times of tight money supplies at all levels, the nation cannot afford to duplicate expensive vocational education training equipment, faculty, facilities, and programs. This is especially true for public secondary and post-secondary institutions.

Secondary vocational programs are reported to be declining in quality as equipment and facilities become outdated and cannot keep up with technological change and occupational developments in the labor market. If this trend continues, greater attention and resources will be directed to postsecondary programs--especially to meeting the retraining needs of an aging population and the ever-increasing numbers of displaced adult workers. Moreover, secondary school enrollments will continue to drop and faculty will leave for more lucrative jobs in industry. This will most likely add to the demise of secondary-level vocational programs. Additionally, the waste of time and resources of both students and institutions resulting from a lack of coordination and articulation between secondary and postsecondary programs and lack of mechanisms for getting advanced standing and credit for relevant secondary vocational education and training can no longer be justified or tolerated.

Alternative models for the coordination or consolidation of secondary and postsecondary technical skills training should be developed and their feasiblity should be examined. For example, research, development, and policy analyses should be conducted to examine alternative models for coordination or consolidation for each of the types of arrangements currently in operation in the states for providing public vocational education. Thus, for example, in states where vocational education is principally offered through postsecondary programs, few major changes in delivery may be required. In states where both secondary and postsecondary vocational programs operate in parallel (but are independent and uncoordinated), and where secondary-level area vocational/technical shcools are the dominant institutions, coordination or consolidation could require substantial change and may be impossible in all but theory. For example, consolidation in these cases could require changing area schools into postsecondary, associate's degree-granting institutions. In addition, new types of co-op arrangements could be developed between comprehensive (home) high schools and the new postsecondary institutions for specific occupational preparation of secondary school students integrated with adult vocational preparation. In any case, development of alternative models for meaningful secondary and postsecondary coordination or consolidation and examination of their feasiblity under various conditions could be extremely valuable undertakings.

* * * * * *

The decades of the 1980s will be difficult for the nation as it struggles to reverse the decline in productivity growth, to revitalize economic development, to adjust to rapidly changing technological and occupational developments, to reduce record levels of unemployment and underemployment, and to accommodate significant demographic shifts. All of our major institutions will need to devise new approaches for dealing with old problems.

In education and training, new and innovative approaches and programs will be needed. Where public vocational education adapts to the changing social and economic context in which its programs and services are required and delivered, it will become a stronger and more viable educational and training enterprise.

# APPENDIX A

## LIST OF DELPHI SURVEY RESPONDENTS

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APPENDIX B

# YOUTH SKILL DEVELOPMENT:

# CRAZY QUILT OR DESIRABLE DIVERSITY

Paul E. Barton

Prepared for the National Center
for Research in Vocational Education

April 1982

Youth Skill Development: Crazy Quilt or Desirable Diversity?

Vocational education, as used in this discussion, is in lower case. It refers to skill development at that stage when youth are preparing to enter employment, entering it, and becoming "established" in the work world, in a phrase used by Marcia Freedman.

This paper identifies the many modes of skill development. It includes the several forms of organized instruction in the public school and post-secondary education systems. It extends, however, to the formal efforts at skill development provided in non-school settings. It includes as well a gray area between formal skill development and work itself: the acquiring of skills through experience.

The first task is to develop a road map to youth skill development. Its purpose is not to achieve statistical accuracy in measuring the amount of skill development in each area of the map,* but to convey to the reader the vast scope of skill development and the many organizations involved. The second is to examine this array of delivery arrangements from the standpoint of whether it should be considered a "crazy quilt" that shows little rationality in the allocation of effort, whether it instead represents

*There would be usefulness in this, but resources were not available for this time-consuming enterprise.

a desirable diversity, or whether there are better connections that could be made among its elements, that would create a more effective total system.

## The Road Map

It is not the purpose of this paper to provide an up-to-date quantification of all the entries and exits in the separate elements of the total skill development system. That requires the piecing together of overlapping data sets, with some of the pieces missing. And even the best of attempts requires the use of studies made in different years.* But it will aid the examination here to identify the components, and assign some orders of magnitude where that is possible.

| Occupational Skill Development System | Comment |
|---|---|
| The General High School | About 11,000 offering fewer than five vocational programs |
| The Comprehensive High School | About 5,000 such schools offering five or more vocational programs |
| The Area Vocational Center | About 1,400 offering vocational instruction, with academic instruction received from regular high schools (or elsewhere) |
| The Community College | Over 700 two year institutions offering both general and vocational education |

*One such comprehensive effort has been made for adults, and partially for youth. See Worklife Transitions, by Paul Barton and the National Institute for Work and Learning, McGraw-Hill, 1982.

| | |
|---|---|
| The Technical Institute | About 160 two year institutions with primarily vocational and technical education |
| The Area Vocational School | About 500 post-secondary non-degree granting institutions offering only vocational education |
| Specialized Vocational Schools* | About 300 offering training in only one or two occupational areas |
| Proprietary Schools | Estimates of enrollments in such vocational, trade, business, and flight schools range from 820,000 up, depending on the source |
| Private Employers | No count for all of industry is available separately for youth |
| • Formal classroom | |
| • Formal on-the-job training | |
| • Informal on-the-job training | |
| • Skills acquired through experience | |
| Labor Organizations | |
| • Registered apprenticeship programs | About 300,000 enrolled |
| • Unregistered apprenticeship programs | About 200,000 enrolled |
| • Union education department courses | No separate estimates for young adults |
| Federal employment and training programs | A variety of delivery institutions involved |
| • On-the-job training | Provided by private employers |
| • Institutional training | Provided by vocational education and "community-based organizations" |

*Data for these first seven taken from the AVA Fact Sheet.

| | |
|---|---|
| • Work experience | These programs have varying amounts of skill development content |
| • Vocational rehabilitation | Would include disabled and handicapped youth; a variety of institutions are used |
| Government Employers | |
| • Federal government | No separate estimates of youth trainees available (that I am aware of) |
| • Armed forces | |
| - Military training | Around 1.6 million |
| - Voluntary education programs | Around 575,000 |
| • State and local governments | No estimates of youth training available |
| Community Organizations | Includes vocational offerings, but no detailed statistics available; for 1972 NCES estimated total enrollments of all ages and all kinds of courses at over 10 million |
| • Churches | |
| • Y's and Red Cross | |
| • Civic groups | |
| • Social service groups | |
| Correspondence instruction | Separate figures by age not available; estimates below are for <u>all</u> courses and <u>all</u> ages, and are for 1973 |
| • National Home Study Council member schools | Over 1 million enrolled |
| • Other private schools | About 250,000 enrolled |
| • Federal and military | Just under 2 million enrolled |

| | |
|---|---|
| • Colleges and universities | About 400,000 enrolled |
| • Business/industry | About 30,000 enrolled |
| Private Instruction | No estimates for youth |

It should be said again that there is some overlap among the above categories, and, as indicated, it is often not possible to break out the youth or occupational component. But the map is adequate to give a rough idea of the breadth and diversity of the present skill development system.

How Much Order Should We Seek?

What should we make of the fact that the imparting of work skills occurs in so many different places? Is this diversity a good thing or is it wasteful? Is there too much duplication of effort, or does our system have the advantage of providing different options, different avenues to the work world? Is it faster (or cheaper) to travel on some of these avenues than it is on others? I raise these questions because we should be thinking about them, but I don't believe very much analysis and systematic thinking has occurred to answer them at the present time.

There is also the matter of how one would approach getting answers. The academic, conceptualizing approach would be to create some kind of "conceptual framework," a set of definitions of variations in types of skill development, distinctions among the various capabilities of the

performers of skill development, as well as distinctions as to what are the relative responsibilities of these performers. To complicate this further, there are questions about who should pay--public school budgets, corporations, or recipients of skills.

An attempt at conceptualization is a thicket that I have not entered in preparing this paper, but will walk around and try to establish its dimensions. My guess is that in entering it, one would just get stuck in the bramble. That is to say, the objective of conceptual distinction, rationality, and consistency sought by the social scientist is beyond reach in this instance.

There is the political element to consider. There are differences in industry preferences and practices. There are different histories and traditions in different occupational areas and industry sectors. It is a vast pluralistic country, not used to the uniformity experienced in a smaller one with cultural homogeneity (such as Japan).

An example of being caught in bramble is the frequent attempt to make a distinction between general education (or basic skills) and specific job skills. This is a traditional approach of economists and the enunciated principle is clear to them: that the public should pay for the former and the corporation (or individual) the latter. But I defy any practical application. What is a basic skill and what is a job skill? In many areas, corporations do very little entry level training, expecting that a

draftsman out of a publicly supported two-year technical institute would be able to do work on the drafting table from day one. And even corporations that make the largest point of doing all their own training ("Just give us people who can read and write."), such as AT&T, will hire secretaries out of the public school and expect them to be able to type and take shorthand, as a result of their public education.

Employers vary tremendously in how much investment they make in entry training. How would any uniformity be forced upon them? If all skill-specific training were withdrawn from publicly subsidized education, how many young people would suffer until "natural" adjustments were made? And what would we do about present critical skill shortages--of machinists, for example?

Another area that seems helter skelter is the lack of order in the location of occupational training among secondary schools, two-year community colleges, and proprietary schools. The same kinds of courses can be found at all these, or in some communities it is possible that desired courses in some occupational areas will be found in none of them, or only in one of them. Each institution springs from a different source, with different funding, and often with a completely different locus of decision making. Is there a need for one system or a super governing body to create a "rational" allocation of effort? While the answer most people would give to this is no, either for reasons of

theory or practicality, there remains a legitimate concern about the fragmentation and lack of connectedness among these institutions.

Some Steps Toward More Integration

If it is not productive to clear out the thicket of dispersed and unrelated skill development organizations and systems, should we then not enter it at all, leaving the present structure much as we find it today? My own answer would be no. There are improvements that should be attempted, although there should be no grand scheme for forging the separate parts into a single, smooth, functioning whole. What follows are a few areas where initial effort might be concentrated.

1. Separate governance and funding sources for secondary and post-secondary education create needs for extra effort to inter-relate levels of occupational education.

Occupational education in community colleges, and even in two year, post-secondary technical institutes, is relatively new, a development principally of the last 25 years. Secondary education, on the other hand, has been providing occupational education for a long time. The two levels have different modes of behavior, with the new post-secondary institutions less tradition-bound than secondary institutions.

A high percentage of students from secondary vocational education go directly into the job market. A high

percentage of young students entering community college and technical institutes come directly to them without prior occupational education in the public school system.

There has been, over a long period of time, some understanding between high schools and colleges about the "fit" between an academic track in high school and entry into college. This understanding permits some orderly progression from one level to another. This same evolution has not generally occurred in occupational education. There is need for more of it, through community based articulation committees with membership from all secondary and post-secondary occupational education. The attempt would be to jointly define levels of skill development and routes of progression up the ladder through high school and into post-secondary institutions. There are outstanding models to follow here; it would perhaps be useful to subject a few of them to case studies in order to provide communities with practical approaches and arrangements worked out on the basis of solid experience.

2. Much more classroom vocational education needs to be integrated with industry training, through joint programs of cooperative education and internships.

There are a number of benefits to be derived through more joint school-industry effort. There is substantial experience with cooperative education, and it is expanding at the community college level. At the secondary level, such approaches remain a fraction of the vocational

education effort and are not growing significantly. But the models are well tried out and are long standing.

Classroom training by itself is frequently too abstracted from the reality of the workplace. The work context is not there. The newest equipment is on the factory floor. Most job-specific training in the U.S. is done by employers at the work place.

From the employer side, entering into such cooperative relationships requires a lot of effort. Work stations have to be provided. What goes on at the workplace and at the school classroom has to be coordinated. In large firms using co-op students, a staff person is often assigned to supervise the co-op program. But the employer, by becoming a party to the skill development of the student-worker has a hand in shaping the result. The employer, rather than just expressing dissatisfaction with the products of the school has a chance to communicate with the school while the young person is still enrolled, and when something can still be done about math, or spelling, or grammar, or the basics of drafting.

The student ends up with the best of both worlds, the basics and theory in the classroom and on-the-job training and experience at real workplaces. There are other large benefits to the student:

- The trying on of different co-op jobs provides experience that will better inform career choice.

- The contact with employers will ease the job search and smooth the transition to work.
- Classroom theory takes on meaning when there is an opportunity to apply it at the workplace.

The allocation of relative responsibilities is not theoretical; it must be worked out between individual school systems and individual employers. It depends on the nature of the industry. It depends upon the teaching approaches of individual schools and individual teachers.

3. It would be desirable to have improved relationships, cooperation, and collaboration between regular public vocational schools/programs and newer programs provided by community based organizations.

The amount of skill development provided by community based organizations ("CBO's" as they are generally called) to young people from disadvantaged backgrounds has grown tremendously in the last 15 years. I refer to the OIC's of America, the Urban League programs, 70001, Jobs for Youth, and the Vocational Foundation in New York City, to name a few. These organizations provide job skills as well as other services to help disadvantaged youth get into jobs. Many follow up after initial job placement.

The clientele of CBO's are school dropouts, recent, or years ago. They may also include unemployed high school graduates, some of whom are deficient in basic skills. The programs have been designed around the particular needs of these young people and the pragmatics of what works for them. The pedagogy of formal public instruction has been thrown out the window.

These new programs have provided a back-up to the public school system, and have picked up hundreds of thousands the schools couldn't hold, or couldn't succeed with. These CBO's became supported by Federal money through the CETA program; they are now having to find a broader base of financial support. While the going is rough, it now looks as if most of them will emerge as regular components of the skill development system.

There is an appreciation for what these CBO programs are doing among leaders in public school vocational education. Yet, there is also a concern. They see public funds going to such new teaching structures at a time when they consider funds to be inadequate for public education. They ask: how can the schools do a better job for disadvantaged youth when the resources are inadequate and public funds are being diverted to new competitors?

There is inevitably some tension between this large established public system and this fledgling system operating now just about every place in the United States. That tension, to a degree, is probably healthy. A lot of changes have taken place in the public schools to respond to the needs of minority and disadvantaged youth.

It would also be healthy for there to be more recogniton within each of these systems of the value of the other. There is a lot public vocational education could learn (and probably is learning) from the approaches of the CBO's.

There may be many opportunities for CBO's to work cooperatively with the public schools to, for example, extend some services to the school building itself to help more youth maintain the school connection until graduation. More integration of effort is an area for improving the use of total resources for skill development.

4. There would be benefit from a closer integration of apprenticeship and formal occupational education.

The apprenticeship system is one of the important skill development systems in the United States. It has some very important strengths that have application to other skill development systems. There is, in apprenticeship, a tradition of combining formal instruction with on-the-job training. There is also a strong tradition of joint planning between the union and the employer. The employment context in which the training takes place provides a natural progression of pay as skills increase. A firm belief in developing well rounded craftsmen avoids narrow skill training for a single element in a work process.

In fact, there are Western European countries where apprenticeship is the principal skill development system. This is particularly the case in West Germany. It provides a sure and orderly transition from school to work. The principal problem, from the American viewpoint, is the early tracking that occurs in these countries.

In the United States, the apprenticeship system is largely self contained. The fact that entry into

apprenticeship is, on the average, much later than in Europe, means that there is often a gap between the leaving of public school and entry into apprenticeship. The average age of apprentices in the U.S. is about 26.

Yet, there are many points where vocational education and apprenticeship do meet. There are high school programs worked out with the unions/employers in which credit is given against the time required to become a journeyman in an apprenticeship program. The more such formal arrangements are forged between public schools and apprenticeship programs, the smoother the movement from school to skilled trades will be for youth aiming in that direction, and the earlier that transition will occur. There are now typically several years between leaving high school and entering an apprenticeship program.

There are also solid beginnings in collaborative programs between community colleges and apprenticeship programs. One notable example is the joint effort between a number of community colleges and the Operating Engineers. It is called a "dual enrollment" program, and a young person both attends a community college and is enrolled in an apprenticeship program. After meeting specified requirements, the community college awards the two-year degree to the apprentice. This is another area where integration can usefully continue among skill development systems.

5. A better articulation between post-secondary occupational education and employers/unions could provide more progression in skill development for young adult workers through tuition-aid programs.

For tens of thousands of young people there is a familiar pattern of career entry. It is a pattern in which formal schooling ends with high school, or dropping out of high school, then entry into a low skill job without obvious routes of promotion. These are teenagers who likely went through general tracks in high school, or dropped out of vocational programs before they acquired a saleable skill.

These teenagers will likely mill around through age 17 and 18 in casual type youth jobs, and slowly work their way into larger businesses by around 20 or 21 where they take on jobs that more nearly resemble those of the adult workforce. But if they are to go anywhere, their skill development needs to continue.

If they are in an enterprise that has a progression of skilled jobs and offers formal on-the-job training or classroom training to upgrade employee skills (as a great many do) they will progress in the natural course of their employment. For large firms, hiring at entry levels, upgrading skills, and promoting from within are standard practices.

But a lot of others will not be so fortunate as to find themselves entering with no skills and placed on an escalator to skilled, higher paying jobs. There is another route for many of them. A growing percentage of employers offer

tuition refund for employees who go back to school part-time (and on their own time). The percentage of employers offering tuition refund varies by size of firm, rising to about 90 percent of firms with 500 or more employees.

But while the availability of these tuition refund programs grows, the participation rates in them remain in the range of 4 or 5 percent. The participation of those with the least education, and in blue collar occupations is even lower, in the range of 1 or 2 percent.* Having had the least success with the school system, these workers seem to have the least inclination to return on a part-time basis. However, the research of the National Institute for Work and Learning establishes that by the removal of a few barriers to participation, more workers will return to school part-time. The steps include providing better information about their eligibility (about half don't know they are eligible), some advice on what kind of occupational education is available, and some help in negotiating the educational system (often called "educational brokering").

Helping workers take advantage of these opportunities to go back to school and upgrade their employment requires that the schools, the employers, and the unions work together. There are good examples of where this has,

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*For a full description of blue collar participation in tuition aid, see An Untapped Resource, Ivan Charner, et al, National Manpower Institute, 1978.

in fact, happened. The occupational education received in the school enables the young workers either to progress where they are employed, or to acquire a skill that will facilitate switching to another firm.

6. There needs to be a better integration of vocational education and general education.

On the one hand, there has been the separate development of vocational education. On the other hand, there have been cycles of bringing vocational instruction together with general education in comprehensive high schools... and then separating them out again.

It should be clearly recognized that good basic education is a vital ingredient of our industrial skill development system. Ask almost any employer what young people lack today and they will refer immediately to deficiencies in basic skills of reading, writing, arithmetic, and communication generally. They are often not ready for the training that an employer will willingly give them.

Vocational education does not ignore the need for good basic education. But on the other hand it is also the case that the principal preoccupation has been with occupational skill training. There are two avenues where better integration can improve the whole of the skill development system:

A. By doing a better job of building basic skill instruction into regular vocational curricula.

Ken Hoyt has talked about "infusing" career education into general education. We also need more infusing of basic education into vocational courses.

For students with the least interest in abstraction, and the greatest interest in the practical, the vocational education setting offers the largest opportunity to improve basic skills.

If there is interest in machine shop and becoming a machinist, there is easy recognition that a considerable amount of mathematics is necessary, and it can be taught in machine shop. If there is interest in retail trade, there is easy recognition of the practical value of learning communication skills.

B. By a closer integration of the offerings in vocational schools with those of general education programs. A greater degree of working together between vocational education systems and general education improves the basic educational skills of vocation education graduates. In fact, the graduates of vocational programs should be judged as much on their abilities in reading, writing, and arithmetic as they are on strictly occupational skill competencies, and basic educational outcomes should become a regular part of the assessment of vocational graduates.

7. There is need for a better relationship between the military skill development system and the public secondary and post-secondary occupational education systems, to smooth transitions from the military to civilian employment.

One of the most systematic skill development systems in the country is that of the military. The range of training and educational offerings has greatly expanded, particularly as the military has relied on volunteer recruits who on the average have had less formal education, and may be in need of English as a second language. There are extensive relationships between military and civilian educational institutions, and I will not detail them here. One creative arrangement is the Servicemen's Opportunity College, which involves a consortium of community colleges with transferability of credits among them.

Only one aspect of collaborative effort is addressed here. A significant percentage of the military assignments for which recruits are provided training have civilian counterparts. In fact, the Army MOS system has been bridged to the civilian DOT job classification system, so the civilian job nearest the military job can be identified. One additional step could be of value both to the military and to the young person who spends several years in the military before returning to civilian life. Whenever a person in the military is being trained for a job that has a reasonably close civilian counterpart, there would be supplementary instruction to prepare for the civilian job as well.

The advantage to the military is that it would be an effective recruitment device to be able to promise that all military training would have supplementary training to equip young people for civilian jobs. The U.S. has high unemployment rates in the teen years, and there would be considerable advantage from having both income and civilian job preparation while in the service. This would appeal to a different group than would be attracted to a GI bill type benefit, paying for college after leaving service. Half of all youth never enter college, and don't expect to. That half would be interested in jobs after service, not education.

What this would require is close collaboration between military training and the civilian school system. Civilian vocational education specialists would have to review Army training programs and design add-on curricula to create the civilian counterpart skills. A motor pool training course in army vehicle maintenance would have added to it, for example, instruction in differences in servicing civilian vehicles and foreign imports. It might involve outstationing of vocational education personnel on military bases. Or it might require off-base supplemental instruction at a civilian school.

8. We need better ways of recognizing the skill development that occurs during actual employment experience.

Of all the skill development systems in the United States the one that produces the most job/occupation-specific skills is hardly recognized as part of the skill development

system at all. That is the system that provides skills through actual experience on the job. While there has been some systematic measuring of the quantity of on-the-job training that is provided in industry by the Bureau of Labor Statistics (in the metal working industries), the identification of something to measure has necessitated the identification of formal on-the-job training programs. The predominant mode, however, is probably through informal methods of doing the job under close supervision until a skill proficiency is attained. A worker may be no less skilled because the skill was acquired through these informal means.

There are two important elements here. One is that there are likely many situations where the addition of formal instruction would be more cost efficient, although there would be no assumption warranted that this would be true in all or even most cases. Regular communication between vocational/occupational school systems and the employers in the area served by these systems might lead to joint undertakings at skill upgrading within the employer's establishment. A good example is the excellent relationship that exists between the Milwaukee Area Technical School (MATS) and a number of Milwaukee employers. This has led to employers inviting the school into the establishment to provide skill training in the factory.

The second important element in this situation is that workers who acquire skills in this informal system have no real record or certification of skill level. Of course,

they do in the sense that when they apply for jobs in other firms, they can reference their past work experience. To the extent that there is some standardization among employers as to how production processes are broken into skill components, the skill level can be inferred from the prior experience. This system obviously "works" in that it is widely used.

The question of whether there is utility in going beyond this, or whether it is practical to do so, is raised here for further discussion. Without such discussion and examination there would be insufficient basis for a recommendation. There are now, developed over the last decade, new arrangements in post-secondary education for awarding academic credit for knowledge acquired outside the school in work and life experiences.* There has been some of this on an experimental basis fostered by the CETA legislation around 1979. While there are likely instances of examining work experiences for academic credit in vocational education, it is not a practice much developed in vocational education. Would there be merit in more developmental work in assessing specifical occupational skills acquired informally in employment for certification by vocational schools?

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*Most notably through the efforts of the Council for the Advancement of Experiential Learning.

If such assessment were feasible, two purposes might be served. The skills learned in employment might be more portable to other employers. And these skill assessments might also facilitate entry into schools of vocational education, as credit is given for what has already been learned.

* * *

Looking at the whole of the youth skill development system and suggesting optimum arrangements is no simple task, for it is not a simple system. It is far-reaching and far-ranging. Its separate components spring from different eras, traditions, and constituencies. It is useful, however, to try to get a birdseye view of the whole of it, and to commence to think about a better fit of the parts.

It is the modest objective of this paper to contribute to a beginning of such a consideration and to capture enough of the whole of the system and its complexity so as to avoid any oversimplified approaches.

APPENDIX C

# SECONDARY AND POSTSECONDARY VOCATIONAL EDUCATION: PERSPECTIVES FROM A COMPETING DELIVERY SYSTEM

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## The Lessons for Vocational Education from YEDPA

Under the Youth Employment and Demonstration Projects Act, a range of research, evaluation and demonstration activities were mounted to better determine the nature of the youth employment problems and what works best for whom in overcoming these problems. While the primary focus was on severe labor market difficulties of minorities and the disadvantaged, as well as on the CETA remedial work and training programs which were the primary means of reaching these groups, there was also substantial attention to the needs of less disadvantaged youth as well as to the secondary, alternative and vocational education programs which served them. Lessons were learned which may be useful in determining the relative future roles of various institutions, particularly secondary and post-secondary vocational education.

The primary lessons might be briefly summarized as follows:

1. Competencies are a critical factor in the employment equation. Race, sex and age are the primary products of labor market success, along with labor market conditions, but those who demonstrate greater capacity on written and oral tests of academic and world of work knowledge are much more likely to find and hold jobs once they leave school, even after adjusting for education attainment. Those with work experience in high school, all else being equal, are more likely to get jobs immediately upon school leaving, in part because a minority of student workers retain in-school jobs after school leaving. The importance of vocational -- as opposed to academic and pre-employment -- competencies is not known because there are no accepted or widely used tests of occupation-specific skills. However, employers uniformly responded to various employer surveys that what they sought most in young recruits was the ability to read and write at a basic level, plus the maturity to show up for work on time and

to take directions. Specific vocational skills were mentioned by only a small minority of employers. Most said they would provide (and in some cases preferred to provide) job-specific training once the youths were hired.

2. Vocational training has not been a major element in remedial job training programs for youth. CETA youth participants enter with limited academic and world-of-work skills (an estimated 8.0 grade level average reading attainment) which minimize their vocational training possibilities. They also stay for a mean of less than five months (excluding summer programs). Practitioners claim, correctly, that they cannot provide any meaningful vocational training under these circumstances. As a result, out of all persons under 22 entering CETA in fiscal 1980, only a fourth received any occupational skills training. Even for out-of-school, year-round participants, the proportion was only 38 percent. In contrast, nearly half received basic education, ESL, GED or college preparation, while nine of ten received subsidized work. Likewise, the studies of vocational education/CETA linkages reveal that most of the "linked" programs for the disadvantaged focused on employability skills development rather than occupational training, and vocational educators respond, like CETA practitioners, that they cannot provide meaningful training in the CETA participation timeframe to those who begin with such deficits.

3. The school-to-work transition process is highly volatile and a large element of chance is involved. For most youth, the first step of successful transition is a part-time in-school or a summer job in quite menial work. The next step is usually a bridge job after school leaving which usually serves as a stepping stone. Only a few school leavers go directly into a career position. It is only after aspirations and options

become more focused and realistic that meaningful career choices are really made, usually in the early twenties as families are formed and stable, full-time work patterns emerge. The industry and occupation of full-time jobs immediately after school leaving are quite different on average than for part-time in-school jobs. Likewise, there is a dramatic shift in industry/occupation patterns over the late teens and early twenties. Because teenagers lacking a track record of trial and error and performance in the labor market, it is difficult to predict and counsel them about specific possibilities and difficult for employers to choose between them except on the basis of credentials. Transferrable competencies are therefore critical, since so many divergent paths lie ahead and few will make a permanent or even intermediate choice until they get some experience.

4. Interventions which provided remedial education and employability skills for school age youth were quite effective in improving subsequent labor market success. Indeed, the impacts apparently exceeded the estimated effects of secondary vocational education. As a baseline, the Grasso/Shea study yielded a weighted net impact of $500 increase in annual earnings for vocational and commercial graduates compared to general graduates (controlling for most other factors) and a breakeven when compared with graduates of college preparation programs who attained no further education. The benefits apparently fade out rapidly according to the National Commission on Employment Policy study from the class of 1972 survey.

The evidence from school-to-work transition programs emphasizing employability skills and remedial education is that they increased earnings of all participants by $400-$500 in the first post-program year, with the net impacts increasing over the year. It should be noted that

most school-to-work transition programs consist of only a single course once a day during the school year, compared to the numerous course hours averaged by vocational graduates. The earnings gains were twice as large in programs which emphasized placement and participant follow-up after school leaving. Interestingly, there was no apparent payoff from more intensive or multi-year transition programs, or for "gold-plated" projects offering more comprehensive services. Short-term job search assistance interventions for a month or less yielded the same immediate employment net impacts as full school-year interventions, although the fade-out was more rapid. Apparently, transition programs have the effect of focusing students' minds on jobs, providing them direction, motivation and the limited skills needed to overcome application hurdles. The follow-up programs are able to provide support when youth subsequently falter, as many will inevitably do, with the result that the youth immediately return to the labor market rather than withdrawing to "lick their wounds" after a failure in the labor market.

5. CETA classroom training yielded gains of $350 in annual earnings in the first post-program year, increasing to $450 in the second. The gains of those trained over 40 weeks were six times those of persons trained 11-20 weeks. These longer stayers might best be compared to those who are classified as vocational education graduates. The net gains of these long-stayers averaged around $8000 in current value. For participants 22 and under, gains averaged $200 per year, with the earnings effects mitigated by an increased rate of return to school contrasted with the declining post-secondary enrollment apparently resulting from participation in secondary vocational education.

6. The vocational components of CETA programs were not very successful in securing training-related placements. The gains were predominantly from increased weeks and hours of employment, not from securing better paying jobs. First, two-fifths of CETA classroom trainees received academic instruction, ESL or world-of-work rather than vocational training. Among those with vocational training, over a third subsequently left the labor force or were unemployed in the year following termination. Less than half of classroom trainees with an occupational emphasis and with subsequent jobs had post-program employment experience in the same general occupational classification as their training (and many of these had worked in the same occupation prior to entry into CETA). In Job Corps, only one in seven enrollees completed an entrie vocational program and was placed in a training-related job. School-to-work transition programs included almost no vocational-specific training. Yet in a multi-site structured experiment which tested the effectiveness of vocational exploration by a cluster training rotation approach in contrast to classroom instruction in job seeking and job holding skills, or worksite visits and job shadowing, or combinations of these activities, the cluster training approach had the least impact on tested employability skills and post-program employment. Finally, in the Ventures in Community Improvement Demonstration, where union journeymen were supervisors of structured worksite training in construction skills, there was an increase of only 7 per hundred in the number with union jobs and an increase of only 3 per hundred in the number employed in skilled construction, enough to increase the net earnings impacts substantially but hardly a demonstration of an ability to access skilled manual work.

7. The key factors in explaining the positive impacts of CETA training were placement, sorting, and credentialling. CETA screened in the disadvantaged, many of whom simply could not master challenging skills. It was functional for dropping out to occur, so that the remainder with potential could, in fact, receive the attention they needed within the program, and the distinction subsequently that they had greater skills than other disadvantaged. A fault of CETA was that its regulations discouraged the termination of ineffective performers, while the allowance structure encouraged participation by those with little desire for skill enhancement. Placement was a critical factor, with lasting, not just immediate, net impacts. Apparently, CETA was able to access some more stable and primary jobs (albeit with the same entry level). There was also some sorting in placement, in that the most advantaged, and particularly the completers, were more likely to be placed. Finally, substantial benefits to those who stayed longer were in part the result of certifications achieved. For instance, those in academic programs could get a GED while those in vocational programs could sometimes access an apprenticeship position. Without a credential and without a placement, participants apparently did not fare better in the labor market because any skills they acquired could not be documented to employers.

8. CETA programs were able to produce their substantial net impacts even though they were targeted on the low SES, low achievement, disadvantaged and minority groups least effectively served by vocational education. Among 1980 enrollees under age 22 (85 percent of whom were 19 or less), three-fifths were minority, 15 percent were dropouts, and four-fifths had family incomes below 70% of the BLS Lower Living Standard. In school-to-work transition programs, the post-program success rates of the less disadvantaged

participants were far lower than those of the more disadvantaged, but the more disadvantaged had greater gains when compared to like non-participants. In CETA classroom training, the earnings gains of females were double those of males, and for white males they were double those of black males -- a pattern similar to that of vocational education impacts -- but all segments gained relative to their matched controls.

Applying the Lessons to Remedial Activities

Based on these experiences, and after a massive reassessment and review effort, the White House Task Force on Youth Employment under the Carter administration recommended, in the Youth Act of 1980, a pyramidal youth employment system. The ideas were incorporated in the Jeffords bill proposed as a rewrite of CETA in 1982, and were then adopted into the youth section of the Jobs Training Partnership Act. The first tier in the proposed system would offer unstipended and short-duration employability skills and job search assistance. This would be focused on 14 to 16 year-olds and would be widely available. It would aim to push as many as possible into the regular labor market. The second tier in the youth system would provide a first work experience to those who completed the first tier but unable to get a private sector job because of limited skills or slack labor markets. The subsidized employment would be combined with unstipended academic instruction and functional skills training. This would be a limited duration intervention, perhaps 250-500 hours in total. The third tier in the youth system would be school-based transition programs for seniors in high school that would seek to line up jobs before the end of the school year and to assure functional competencies before school leaving. The next tier would be short term (i.e. roughly six months) classroom programs which would be much like the classroom training activi-

ties currently available for out-of-school youth under CETA. These would be available for dropouts and graduates of limited skills. There would then be added a final tier of advanced training options, delivered on a voucher basis or in corporate-sponsored training programs, for a selected minority of completers from the short-term training programs who had proved their ability to benefit from training and had demonstrated their commitment to a specific vocation. The advanced training, focused primarily on young adults aged 19-24, would be secured from mainstream institutions as far as possible. It would last up to four years, with strict standards of performance but remedial help to the disadvantaged to increase their likelihood of successful participation.

The system would be pyramidal in its participant flows. Hundreds of thousands of youth would be provided first tier employability services. A subset would need subsidized work experiences. If these were provided, only a subset of youth would reach the end of high school lacking basic world-of-work and functional competencies and needing transition assistance. A subset of these would then participate in short-term remediation. And only a minority of these would be adjudged capable and in need of advanced training. Moving up the pyramid, the participants served in each tier would be older, on average, and they would also be more demonstrably in need. First-tier pre-employment services would be broadly available with very little targeting. First jobs would be provided for those who could not get them on their own, with the low compensation achieved by combination of work with unstipended instruction being the allocative mechanism. Post-school components would be targeted to the economically disadvantaged.

Competencies would be pyramidal. The four strands -- academic competencies, employability skills, life skills, and vocational skills -- would be emphasized to varying degrees in all tiers. But at the lowest levels,

transferrable skills (such as academic and world-of-work training) would be given the greatest emphasis, while most vocational preparation would occur in the top two tiers, focusing on persons in their early twenties rather than teenagers.

This proposed system would be consistent with the developmental pattern of youth. It would be consistent with the demand side of the equation -- i.e., that employers of teenagers on a part-time and summer basis require different skills and have different expectations than employers in bridge jobs, or than those hiring youth for career entry jobs. The pyramidal system would have a built-in sorting process since completion of one step would be needed for entry to the next, since competencies would be specified at each level, and since the incentives in terms of stipends and allowances would be increasing to encourage movement up the pyramid of skills. The system would make sense of the existing youth delivery system, broadening the base of low-cost early interventions, adding a tier of advanced vocational offerings, and formalizing the linkages and flows between levels. The system would increase long-term training for those capable of it without creaming from nondisadvantaged (a frequent flaw in the few advanced training programs offered by CETA, usually under the Private Sector Initiative Program). It would seek to assure greater penetration into the mainstream for the disadvantaged recipients of this advanced training.

Implications for Vocational Education

Secondary and post-secondary vocational education would play a primary role in this federally-funded system. The evidence suggests conclusively that secondary vocational education disproportionately serves low-income and disadvantaged youth with limited academic and world-of-work

competencies. Vocational education students would thus be disproportionately represented in any transition programs funded under remedial job training programs. The secondary vocational education system would be the obvious provider of like skills training, employability development, placement and follow-up for seniors. Federal funds would provide for additional services for already enrolled and eligible vocational students. The federal funds would, thus, bolster the components now adjudged to be weakest in secondary vocational education -- remedial education, occupation information, functional skills instruction and placement.

The secondary vocational education system could also be a primary provider of the employability skills and remedial education components combined with first jobs, as well as providers of the short, first-tier employability development courses, since these would be school-based programs and since the vocational educators are the only staff in many secondary schools who have the necessary skills and orientations.

The secondary vocational education would have an advantage because of its ability to train and certify staff in individualized, self-paced remedial education and basic life skills training approaches. The vocational education establishment could take the lead in setting statewide standards for entry employability (i.e. completion of the first tier) as well as the standards for functional and world-of-work competency attainment of school leavers, since the vocational system is familiar with competency-based approaches.

Post-secondary vocational education would be the primary provider of occupational training for the disadvantaged. The federally-funded system at the state and local level would pay for tuition and other participation costs, plus living stipends where appropriate, for economically disadvantaged participants in post-secondary education. Contracting with

the post-secondary institution, or in partnership with a community-based or other organizations, remedial education and other support services would be provided (although the advanced trainees would already have received academic instruction in the previous tier so that they could at least meet minimal entry requirements and move directly into training). Post-secondary institutions might also be the contractor for public/private partnership programs, providing the classroom instruction which would be combined with advanced on-the-job training offered by employers following the predominant German apprenticeship model.

There is no conflict between these proposed roles and current funding and governance patterns in vocational education. All the types of activities outlined are currently being supported under CETA (now JTPA), the difference would be an expansion and rationalization of these relationships. However, in the long haul the proposed arrangements would be consistent with the likely trends of federal vocational education as anticipated by the National Commission on Employment Policy and, presumably, the administration. It does not require a crystal ball to see that the Office of Management and Budget will continue to push for reduced vocational education funding with greater concentration of federal resources on those components which alter, improve or supplement existing state and locally-funded programs, to target on those with greatest need, and to provide for qualitative improvements. The NCEP also proposes shifting federal emphasis to post-secondary training delivered under a voucher-purchase approach. Legislation to achieve such ends is reportedly under consideration. But it is entirely possible to achieve these ends through budgetary policies by gradually reducing funds for vocational

education and shifting resources to the Jobs Training Partnership Act, which would then purchase advanced training from state and locally-funded post-secondary institutions.

Applying the Lessons to Secondary and Post-Secondary Vocational Education

But the lessons of youth employment and training programs may be adopted by vocational education whether or not there are changes in legislation, federal policy, and funding patterns. At the secondary level, the lessons are particularly relevant because the vocational education system shares many of the flaws of CETA:

Vocational education screens in students who have below average skills and abilities relative to all youth. The state funding formulae are based on average daily attendance, so there is every incentive to retain as many students as possible whether they perform only marginally. Few states have competency standards for vocational training, only a handful have functional skills requirements, and only those with statewide academic competency standards have them for vocational students. Remedial academic instruction and world-of-work training is infrequently offered by vocational education to enhance the prospects of its students. Placement is not emphasized enough because teachers are hired on a school-year basis and are rarely able to job develop during the school year or to provide follow-up during the summer months -- services which alone can yield greater employment impacts than current vocational education. Finally, only a minority of vocational education students participate substantially enough to really learn job skills. Many transfer to a vocational curricula in the senior year; others dabble (or explore) various occupations. Persons with very limited training are classed with those who receive much more extensive and specific training. At the same time, there are limited

placement linkages to post-secondary training, so that vocational students are less likely than general students to continue their training after secondary school leaving.

The current federal vocational education resources could be used to purchase individualized, self-paced and computer-based instruction materials of proven effectiveness in remedial academic and functional skills instruction. Staff training resources under the existing law could focus on integrating those components into regular training. State vocational education agencies could formulate standards (in addition to those existing in regular academic programs) for the academic and functional competencies required for certification of vocational mastery, in addition to completion of minimum course hours and mastery of specified vocational competencies (whether for a single occupation or a cluster of occupations). The federal resources could be used by states to establish placement/transition programs for vocational graduates using the successful Jobs for America's Graduates program model for organizing and delivering the service. Finally, federal resources (including FIPSE monies) could be used for "paired" programs matching secondary and post-secondary institutions. Arrangements would be made so that high school vocational graduates would be sorted and screened into advanced post-secondary programs with agreed-upon performance standards at both the secondary and post-secondary levels. Placements would be mandatory (i.e. training slots could not be refilled unless placements attained a pre-designated level) for these long-term paired training programs. In other words, vocational education could fashion its own pyramidal system simply by linking traditionally existing institutions.

These changes probably make sense for vocational education just as they do for employment and training programs. They will facilitate service to the disadvantaged and can probably increase substantially the earnings gains experienced by vocational graduates. The competency-based approach should result in greater accountability, while making it easier to market the vocational education product to private employers. The vocational education system will be better prepared to compete for funds under the Job Training Partnership Act. It will also begin to move in the directions outlined for federal policy by the administration, thereby justifying continued funding. There is, thus, a high degree of consonance between the vocational education policies which will best some youth, particularly economically disadvantaged youth, and those which will best benefit the vocational education system.

# APPENDIX D

## DESIGN AND METHODOLOGY OF THE DELPHI SURVEYS

## DESIGN AND METHODOLOGY OF THE DELPHI SURVEYS

The Delphi technique was pioneered as a futures forecasting method in the early 1950s by Olaf Helmer at the Rand Corporation. Helmer (1967) defines the Delphi technique as

> a carefully designed program of sequential individual interrogations (usually best conducted by questionnaire) interspersed with information and opinion feedback. Delphi . . . operates on the principle that several heads are better than one in making subjective conjectures about the future, and that experts will make conjectures based upon rational judgement and shared information rather than merely guessing, and will separate hope from likelihood in the process. (pp. 7-36)

In this case, three separate Delphi instruments were designed to address variations on similar issues. The first Delphi examined the relative emphasis and strength of public secondary and postsecondary vocational education. The second Delphi compared key United States employability development systems. The third Delphi assessed the potential of public secondary and postsecondary vocational education to address national needs and priorities.

The traditional Delphi process involves three rounds of instrumentation by mail. Feedback is given to the respondents between each round and includes the results of the previous round. This process was modified for this research effort in that for each Delphi (a) the instrument was mailed to the expert participants, who then returned their responses by mail, (b) a summary of all of the responses was mailed to each participant (this provided feedback), and each participant was telephoned by project staff to review their reaction to the summary (which constituted the second round of information gathering), and (c) the summary was modified as appropriate according to the second round results.

The Delphi instruments were designed to gather the opinions of the expert participants. Each instrument was field tested internally with National Center staff. The instruments were open ended and collected opinions narratively, although some numerical data were collected. All three instruments are included in this Appendix.

The analysis of the surveys was conducted according to the style of the Delphi. The numerical data were tallied, and means and ranks were generated where appropriate. For the more narrative data, similarities across the respondents comments were noted and included in the summaries.

Delphi participants totaled twenty-seven; nine for each Delphi survey. As shown in the following table, each survey included a balanced representation of perspectives (i.e., secondary and postsecondary vocational education perspectives, and national education and employment training policy perspectives).

TABLE 1

NUMBER AND REPRESENTATION OF SURVEY RESPONDENTS

| Perspective: | Delphi 1 | Delphi 2 | Delphi 3 | Total |
|---|---|---|---|---|
| Secondary/ postsecondary vocational education | N=5 | N=5 | N=4 | N=14 |
| National educational and employment training policy | N=4 | N=4 | N=5 | N=13 |
| Total | N=9 | N=9 | N=9 | N=27 |

The respondents (and alternates) were primarily knowledgeable educational leaders selected from a long list of potential candidates, recommended by numerous National Center staff, to represent the major perspectives noted previously. The names and organizational affiliations of the respondents are included in Appendix A.

## Delphi Survey One

The purpose of the first Delphi was to assess the emphasis and strength of public secondary and postsecondary vocational education by delineating roles and functions of the two systems. The Delphi's design included requests for several rankings of current and preferred emphases at both levels of vocational education and asked respondents to describe their idealized vision for vocational education in the future.

This first Delphi was structured along the assumption that vocational education can provide a variety of emphases within the curricula. Broad skill, knowledge, and attitude areas addressed by vocational education include the following:

- Basic skills--e.g., for survival in any job, reading, writing, computing

- Work values and attitudes--e.g., dependability, cooperating with others, dress and grooming, work norms

- World of work knowledge--e.g., knowledge of labor market operation, economic principles, work norms, collective bargaining, salary and benefits

- Job entry, maintenance, and advancement skills--e.g., knowing how to prepare a resume, search for a job, complete a job interview, how to leave a job

- Technical job skills--e.g., to perform a particular job or occupation, to use the tools, equipment and materials of a job

Preparation within the technical job skills area can vary from general to specific types of preparation:

- World-of-work preparation--basic tool skills, occupational survival skills

- Occupational area preparation--skills and knowledge of materials and methods common to groups of occupations (e.g., office occupations, printing occupations, construction occupations)

- Job specific preparation--skills and knowledge specific to a particular job (e.g., secretary, computer programmer, keypunch operator, etc.)

- Employer-equipment-specific preparation--skills and knowledge specific to a particular employer or piece of equipment

Essentially, respondents were asked to provide several comparative estimates of what is and what should be the relative emphasis and strength of secondary and postsecondary vocational education in providing education and training in these several skill areas.

As was the case for each of the three independent surveys, the responses to the first mailed survey instrument were summarized to best reflect the group's consensus. A copy of the group summary, together with a copy of the respondents' original responses was sent to each respondent. Each respondent was then telephoned, their individual responses were reviewed and discussed in light of the group's consensus, and their additional comments and clarification were used to modify or expand the group summaries. The key results of each survey were discussed in the body of the report.

Delphi Survey Two

The purpose of the second Delphi was to get a sense of how the different agencies and programs that provide education and training for work are perceived to fit together and to distinguish their roles, functions, and strengths. This Delphi's design asked respondents (N=9) for opinions in three major areas:

- The relative emphasis and strength given by each of the agencies and programs to basic skills; work values and attitudes; world of work knowledge; job entry, maintenance, and advancement skills; and to the several levels of technical job skills preparation.
- The type of technical job skills (i.e., world of work preparation, occupational area preparation, job-specific preparation, and employer-specific preparation) provided by each of these education and training agencies and programs.
- The preferred, optimum role of the several agencies and programs in providing education and training for work.

Delphi Survey Three

This survey focused on the potential responsiveness of public secondary and postsecondary voctional education to national needs and priorities. Respondents were asked to indicate which national needs and priorities were most appropriate for secondary vocational education to attend to and which were most appropriate for postsecondary vocational education emphasis. To do so, they were first asked to distribute an imaginary $100 among the needs secondary programs should address and another $100 among the needs that postsecondary programs should address. Eight important needs or problem areas were listed, with space provided for the respondents to add other problems or needs they felt were important. Each respondent was then asked to explain each of the top three problems or needs they felt that secondary and postsecondary programs should address. For each level of vocational education and each problem area selected, respondents were asked to explain the following:

- Why they thought it was appropriate for that level of vocational education to address the problem
- What the appropriate role or function should be in responding to problem
- What the special characteristics of that program level were for fulfilling the role or function

- What changes, if any, would be needed at each level of program to fulfill this role or function effectively

As with the other Delphi surveys, a summary of the mean distribution of funds for each problem area, together with a brief summary of the rationale for the top three priority areas appropriate for each level of vocational education was sent to respondents along with a copy of their original responses. The respondents were then telephoned, their individual responses were discussed in light of the groups consensus, and their additional comments and clarifications were used to modify or expand the group's summaries.

## Brief Highlights of Respondent Ratings

The key results of the surveys, based upon respondent ratings and their narrative explanations of those ratings, were summarized and disucssed in the body of the report. Some additional respondent ratings are provided in the following tables.

Table 2 summarizes the respondent's ratings of the relative emphasis and strength of the several agencies and programs in five broad skill areas. The table shows that the greatest attention to and emphasis of basic skills preparation was felt to be provided by the Job Corps, public secondary vocational education, and by military training programs. Basic skills were felt to receive the least amount of attention in training provided by business, industry, and labor.

Although work values and attitudes were seen as being emphasized relatively uniformly by all agencies and programs, they were felt to receive greatest emphasis in public secondary vocational programs. Somewhat less emphasis was felt to be given to this area of preparation by apprenticeship programs.

World-of-work preparation was seen as being emphasized most in public secondary vocational programs, and least in military training programs. Job entry, maintenance, and advancement skills were rated as receiving relatively uniform emphasis by most programs and agencies; Job Corps was seen as giving the most emphasis to this area, and training in the military and in business, industry, and labor as giving the least amount of emphasis.

All of the agencies and programs give greatest emphasis to preparation of technical job skills. Apprenticeship programswere seen as giving slightly greater emphasis to this area, while community-based organizations were seen as giving least emphasis to this area.

TABLE 2

MEAN RATINGS OF THE EMPHASIS AND STRENGTH OF VARIOUS AGENCIES AND PROGRAMS IN BROAD SKILL AREAS

| Skill Areas | Secondary Vocational Ed. | Postsecondary Vocational Ed. | CETA | Job Corp | N=8 Apprentice-ship | Proprietary Schools | Community Based Organizations | Business Industry, Labor | Military |
|---|---|---|---|---|---|---|---|---|---|
| 1. BASIC SKILLS—needed by all for survival in any job; e.g., reading writing, computing. | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.2 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.0 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.0 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 5.3 (○) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 2.3 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 2.7 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.8 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 1.8 (□) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.1 |
| 2. WORK VALUES AND ATTITUDES—e.g., dependability, cooperating with others, dressing and grooming, work norms. | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 5.0 (○) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.6 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.1 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.8 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 2.8 (□) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.3 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.2 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.9 | 0 1 2 3 4 5 6<br>$\bar{x}$ = 3.9 |
| 3. WORLD-OF-WORK KNOWLEDGE—e.g., knowledge of labor market operation; economic principles, work norms, collective bargaining, salary and benefits. | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.6 (○) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.2 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 2.6 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.0 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.1 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 2.6 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 2.4 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 2.9 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 1.6 (□) |
| 4. JOB ENTRY, MAINTENANCE, AND ADVANCEMENT SKILLS—e.g., knowing how to fill out a resume, search for a job, complete a job interview, how to leave a job. | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.0 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.0 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.9 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 5.1 (○) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 2.3 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.0 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 4.0 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 1.8 (□) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 1.8 (□) |
| 5. TECHNICAL JOB SKILLS—needed to perform a particular job or occupation; e.g., use of the tools, equipment and materials of a job. | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 5.9 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 6.7 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 5.0 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 5.9 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 6.8 (○) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 6.3 (N=8) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 3.4 (□) | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 6.3 | 0 1 2 3 4 5 6 7<br>$\bar{x}$ = 6.1 |
| 6. OTHER (Please specify) | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 |

Scale: 0 = No emphasis is given to this skill area
7 = Substantial emphasis and greatest strength in this skill area

Key: ○ = Highest mean rating for the row, N=9
□ = Lowest mean rating for the row, N=9

Table 3 summarizes the respondent's ratings of the extent of emphasis given to four different types of technical job skills preparation by the several agencies and programs. The table shows that the greatest attention to world-of-work preparation was felt to be provided by public secondary vocational education and by the Job Corps. Training provided by business, industry and labor was felt to give the least amount of emphasis or attention to world-of-work preparation.

Broad occupational area preparation was rated as being emphasized most in public secondary vocational programs. It is least attended to or emphasized in community-based organizations according to the respondents.

As expected, all of the agencies and programs emphasized job specific preparation. Moreover, of the four areas of technical preparation, job specific preparation was rated as the highest area of emphasis and greatest strength of all agencies except public secondary vocational programs which, as noted above, gives greatest emphasis to occupational area preparation.

Employer-/equipment-specific preparation was felt to be emphasized most in business, industry, and labor training programs, but it is also an area emphasized in apprenticeship and military training programs. It is emphasized least in community-based organizations and in the Job Corps.

Table 4 shows the rank order the respondents assigned to major national problems that public secondary and postsecondary vocational education should address. Based upon the mean number of dollars assigned to each problem area, the respondents felt that the most appropriate and important problem areas that should be addressed by secondary vocational education were youth unemployment ($\bar{x}$ = 30.63), basic skills ($\bar{x}$ = 20.50), and equity and access ($\bar{x}$ = 14.80). The needs associated with displaced workers ($\bar{x}$ = 33.75), high technology ($\bar{x}$ = 31.25), and critical skill shortages ($\bar{x}$ = 20.63) were seen as the most appropriate and important problem areas that should be addressed by postsecondary vocational education.

TABLE 3

MEAN RATINGS OF THE EMPHASIS AND STRENGTH OF VARIOUS AGENCIES AND PROGRAMS IN THE AREA OF TECHNICAL JOB SKILL PREPARATION

| Skill Areas | Public Secondary Vocational Ed. | Public Postsecondary Vocational Ed. | CETA | Job Corp | N=8 Apprentice-ship | Proprietary Schools | Community Based Organizations | Business Industry, Labor | Military |
|---|---|---|---|---|---|---|---|---|---|
| 1. WORLD-OF-WORK-preparation—basic tool skills, occupational survival skills. | 0 1 2 3 $\bar{x}$ = 2.0 | 0 1 2 3 $\bar{x}$ = 1.8 | 0 1 2 3 $\bar{x}$ = 1.6 | 0 1 2 3 $\bar{x}$ = 2.0 | 0 1 2 3 $\bar{x}$ = 1.0 | 0 1 2 3 $\bar{x}$ = 1.3 | 0 1 2 3 $\bar{x}$ = 1.2 | 0 1 2 3 $\bar{x}$ = 0.9 | 0 1 2 3 $\bar{x}$ = 1.1 |
| 2. OCCUPATIONAL AREA preparation—skills and knowledge of materials and methods common to group of occupations (e.g., office occupations, printing occupations, construction trades). | 0 1 2 3 $\bar{x}$ = 2.4 | 0 1 2 3 $\bar{x}$ = 2.2 | 0 1 2 3 $\bar{x}$ = 1.7 | 0 1 2 3 $\bar{x}$ = 1.8 | 0 1 2 3 $\bar{x}$ = 1.3 | 0 1 2 3 $\bar{x}$ = 1.6 | 0 1 2 3 $\bar{x}$ = 0.9 | 0 1 2 3 $\bar{x}$ = 1.2 | 0 1 2 3 $\bar{x}$ = 1.3 |
| 3. JOB SPECIFIC pre-preparation—skills and knowledge specific to a particular job (e.g, secretary, computer programmer, keypunch operator). | 0 1 2 3 $\bar{x}$ = 2.1 | 0 1 2 3 $\bar{x}$ = 2.9 | 0 1 2 3 $\bar{x}$ = 2.3 | 0 1 2 3 $\bar{x}$ = 2.6 | 0 1 2 3 $\bar{x}$ = 2.8 | 0 1 2 3 $\bar{x}$ = 2.7 | 0 1 2 3 $\bar{x}$ = 1.7 | 0 1 2 3 $\bar{x}$ = 2.4 | 0 1 2 3 $\bar{x}$ = 2.4 |
| 4. EMPLOYER/EQUIPMENT SPECIFIC pre-paration—skills and knowledge specific to a particular employer or position. | 0 1 2 3 $\bar{x}$ = 1.0 | 0 1 2 3 $\bar{x}$ = 1.2 | 0 1 2 3 $\bar{x}$ = 1.2 | 0 1 2 3 $\bar{x}$ = 0.7 | 0 1 2 3 $\bar{x}$ = 2.1 | 0 1 2 3 $\bar{x}$ = 1.2 | 0 1 2 3 $\bar{x}$ = 0.6 | 0 1 2 3 $\bar{x}$ = 2.9 | 0 1 2 3 $\bar{x}$ = 2.0 |

Scale: 0 = Does not provide this type of training
3 = Almost all training is of this type; this is what the agency does best

Key: ○ = Highest mean rating for the row, N=9
□ = Lowest mean rating for the row, N=9

TABLE 4

NATIONAL PROBLEMS AND NEEDS APPROPRIATELY ADDRESSED BY SECONDARY AND POSTSECONDARY VOCATIONAL EDUCATION

(Rank and Mean Number of Dollars Assigned by Program Level)

| National Problems and Needs | Secondary Vocational Education | | Postsecondary Vocational Education | |
|---|---|---|---|---|
| | Rank | Mean No. of Dollars | Rank | Mean No. of Dollars |
| a. Displaced workers | 9 | 2.00 | 1 | 33.75 |
| b. High technology | 6 | 6.75 | 2 | 31.25 |
| c. Productivity and economic revitalization | 5 | 9.00 | 4 | 10.00 |
| d. Equity and access | 3 | 14.80 | 7 | .63 |
| e. Basic skills | 2 | 20.50 | 6 | 1.25 |
| f. National defense | 10 | -0- | 8 | -0- |
| g. Youth unemployment | 1 | 30.63 | 5 | 2.50 |
| h. Critical skill shortages | 4 | 9.50 | 3 | 20.63 |
| i. Other | | | | |
| - Basic technolgical preparation | 7 | 3.63 | | -0- |
| - Personal development | 8 | 3.13 | | -0- |

THE NATIONAL CENTER
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THE OHIO STATE UNIVERSITY
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# COMPARATIVE ANALYSIS OF U.S. EMPLOYABILITY DEVELOPMENT SYSTEMS

## Instructions

Please complete and fill in the following tables within our Delphi which is designed to compare various employability development systems within the United States.

The Delphi contains three tables. The first addresses the relative emphasis and strengths within the curriculum of a number of types of education and training agencies/programs. The second table is concerned with the type of technical job skills training provided by the various agencies/programs. The third table requests information about the optimum roles and strengths of the various education and training agencies/programs for the future. Instructions preceed each table.

Thank you for your assistance.

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Name _____ Date _____

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## Instructions

Listed down the left side of table 1 are five broad categories or areas of skills, knowledge and attitudes in which many people feel some level of proficiency is needed to succeed in employment. Across the top of the table are listed nine of the key agencies that provide education and training for work.

1. Please use the rating scale provided in each of the cells of table 1 to indicate the relative emphasis and strength given to each of the skill areas by each of the key education and training agencies/programs.

   (a) Answer this question for each of the major skill areas in table 1. If you feel there are other skill areas not covered by the five areas that are listed, please specify them and provide a rating.

   (b) For each skill area, choose a value between 0 and 7 according to the following rating scale:

   0 = NO emphasis is given to this skill area.
   1 = MINOR emphasis is given to this skill area.
   2 =
   3 =
   4 = MODERATE emphasis is given to this skill area.
   5 =
   6 =
   7 = SUBSTANTIAL emphasis and greatest strength in this skill area.

   Use all eight scale values as appropriate. The ratings of "2" and "3" represent intermediate levels between "MINOR" emphasis and "MODERATE" emphasis. Similarly, the ratings of "5 and "6" represent intermediate levels between "MODERATE" emphasis and "SUBSTANTIAL" emphais and greatest strength.

   (c) Circle the appropriate scale value for each skill area.

## TABLE 1

## RELATIVE EMPHASIS AND STRENGTH

| Skill Areas | Secondary Vocational Ed. | Postsecondary Vocational Ed. | CETA | Job Corp | Apprentice-ship | Proprietary Schools | Community Based Organizations | Business Industry, Labor | Military |
|---|---|---|---|---|---|---|---|---|---|
| 1. BASIC SKILLS—needed by all for survival in any job; e.g., reading writing, computing. | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 |
| 2. WORK VALUES AND ATTITUDES—e.g., dependability, cooperating with others, dressing and grooming, work norms. | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 |
| 3. WORLD-OF-WORK KNOWLEDGE—e.g., knowledge of labor market operation; economic principles, work norms, collective bargaining, salary and benefits. | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 |
| 4. JOB ENTRY, MAINTENANCE, AND ADVANCEMENT SKILLS—e.g., knowing how to fill out a resume, search for a job, complete a job interview, how to leave a job. | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 |
| 5. TECHNICAL JOB SKILLS—needed to perform a particular job or occupation; e.g., use of the tools, equipment and materials of a job. | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 |
| 6. OTHER (Please specify) | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 |

## Instructions

Listed on the left in table 2 are four broad types of preparation or instruction in TECHNICAL WORK SKILLS. Listed across the top are the nine key agencies that provide education and training for work.

1. Please use the rating scale provided in each of the cells of table 2 to indicate *how well each of the broad types of preparation characterize each of the key education and training agencies/programs.*

   (a) Answer this question for *each of* the types of preparation, for *each* training agency.

   (b) For each type of preparation, choose a value between 0 and 3 according to the following rating scale:

   0 = Does *not* provide training of this type.

   1 = Provides *some* training of this type, but not a dominant type.

   2 = *Significant* amount of training of this type is provided.

   3 = Almost *all* training is of this type; this is what the agency does best.

   (c) *Circle* the appropriate scale value for each type of preparation or training, for each agency.

## TABLE 2

## TYPE OF PREPARATION PROVIDED

| Skill Areas | Public Secondary Vocational Ed. | Public Postsecondary Vocational Ed. | CETA | Job Corp | Apprentice-ship | Proprietary Schools | Community Based Organizations | Business Industry, Labor | Military |
|---|---|---|---|---|---|---|---|---|---|
| 1. WORLD-OF-WORK preparation—basic tool skills, occupational survival skills. | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 |
| 2. OCCUPATIONAL AREA preparation—skills and knowledge of materials and methods common to group of occupations (e.g., office occupations, printing occupations, construction trades). | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 |
| 3. JOB SPECIFIC pre-preparation—skills and knowledge specific to a particular job (e.g, secretary, computer programmer, keypunch operator). | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 |
| 4. EMPLOYER/ EQUIPMENT SPECIFIC preparation—skills and knowledge specific to a particular employer or position. | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 | 0 1 2 3 |

## Instructions

Table 3 seeks your views on what **should be** the optimum role of the various agencies and programs providing preparation for work, and on their strengths and unique characteristics for those roles.

Listed down the left side of table 3 are the nine key agencies/programs providing preparation for work. Across the top of the table are two columns entitled "Optimum Role of Training Agency/Program," and "Strengths/Unique Characteristics for Role."

1. Please write in the space provided in column one what you feel *should be* the *optimum role* of each of the key agencies and programs. You may wish to indicate a single role for a particular agency or program, or you may suggest several related roles of functions which you think the agency or program should carry out. Please try to be as clear and descriptive in your response as possible.

2. Next, in the space provided in column two, please indicate what you feel are the *strengths and unique characteristics* of each of the key agencies and programs that should allow them to fulfill or carry out their optimum role(s). Your response to this question should help to clarify why the role you suggested is the "optimum" or most appropriate role for each agency/program, and what distinguishing characteristics of the agency/program support this role.



Please note: Table 3 is on both pages 7 and 8.

TABLE 3

PREFERRED ROLES

| TRAINING AGENCIES | OPTIMUM ROLE OF TRAINING PROGRAM | STRENGTHS/UNIQUE CHARACTERISTICS FOR ROLE |
|---|---|---|
| Secondary Vocational Education | | |
| Postsecondary Vocational Education | | |
| CETA | | |
| Job Corp | | |
| Apprenticeship | | |

(continued on next page)

TABLE 3

PREFERRED ROLES
(continued)

| TRAINING AGENCIES | OPTIMUM ROLE OF TRAINING PROGRAM | STRENGTHS/UNIQUE CHARACTERISTICS FOR ROLE |
|---|---|---|
| Proprietary Schools | | |
| Community-based Organizations | | |
| Training in Business, Industry, Labor | | |
| Military Training | | |

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– THANK YOU FOR YOUR ASSISTANCE –

THE NATIONAL CENTER
FOR RESEARCH IN VOCATIONAL EDUCATION

# EMPHASIS AND STRENGTH OF PUBLIC SECONDARY AND POSTSECONDARY VOCATIONAL EDUCATION

Name _____ Date _____

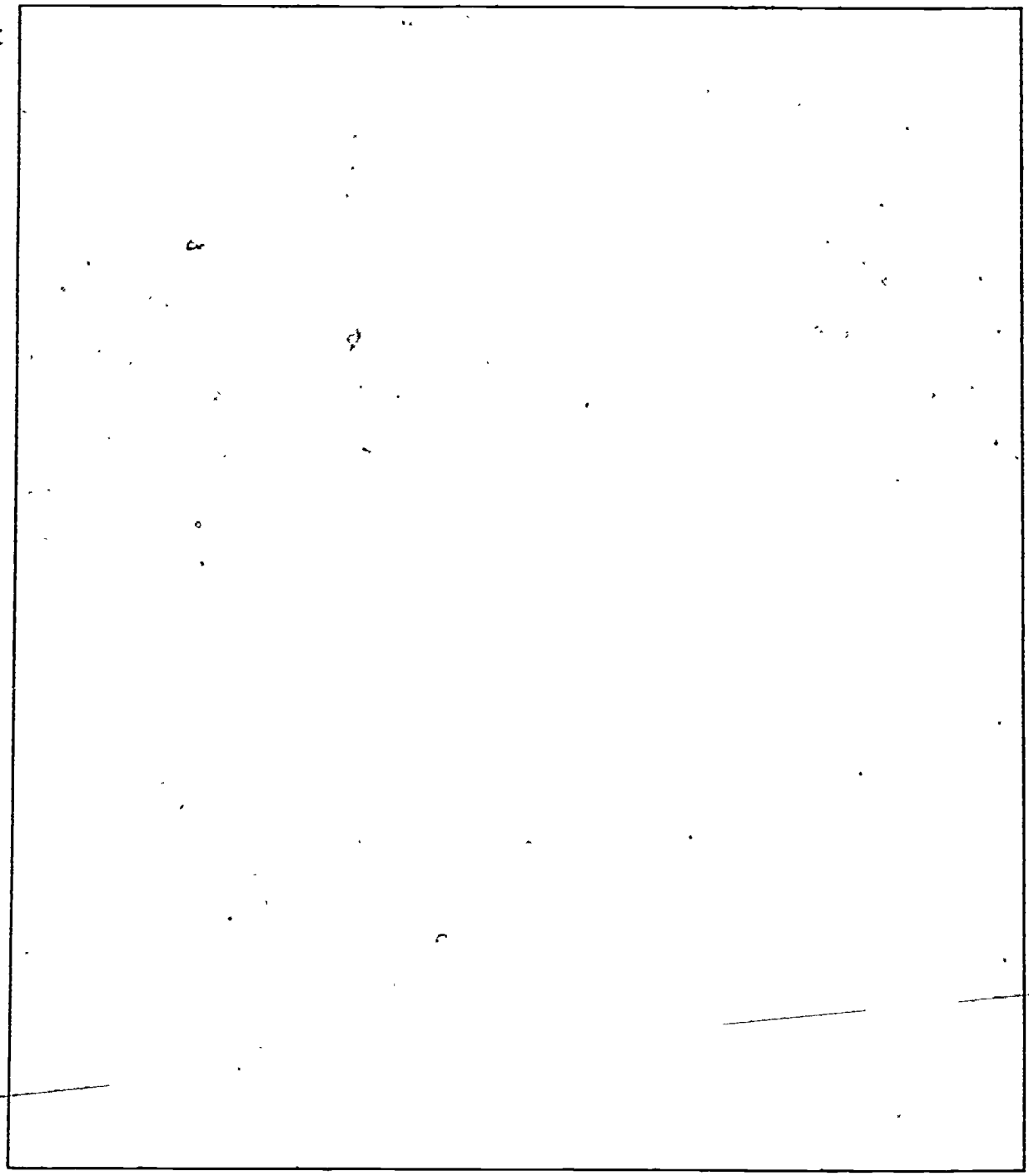
## Instructions

Please respond to the following items in our Delphi which is designed to assess opinions of national leaders about the emphasis and strength of public secondary and postsecondary vocational education.

The Delphi contains three section. The first addresses public secondary vocational education—its current and ideal emphasis and strengths. The second section addresses public postsecondary vocational education's current and ideal emphasis and strengths. Section three requests your comparisons between public secondary and postsecondary vocational education.

Thank you for your assistance.

3. If there is a difference in your ratings of what IS and what SHOULD BE, the emphasis and strength of SECONDARY vocational education in any of the five skill areas, please explain WHY you think there is a difference.



4. Preparation in TECHNICAL JOB SKILLS can vary from general to specific types of preparations or instruction. Listed below are four broad types of preparation arranged from the most general to the most specific. Please rank order these types of preparation in terms of how well they characterize what IS and what SHOULD BE the typical or predominant type of preparation provided by public SECONDARY vocational education. Use a rank of 1 to indicate the MOST TYPICAL type of preparation provided by secondary vocational education, and a rank of 4 to indicate the least typical type of preparation.

| IS (Rank Order) | SHOULD BE (Rank Order) | |
|---|---|---|
| ( ) | ( ) | A. WORLD OF WORK PREPARATION—basic tool skills, occupational survival skills. |
| ( ) | ( ) | B. OCCUPATIONAL AREA PREPARATION—skills and knowledge of materials and methods common to group of occupations (e.g., office occupations, printing occupations, construction occupations). |
| ( ) | ( ) | C. JOB-SPECIFIC PREPARATION—skills and knowledge specific to a particular job (e.g., secretary, computer programmer, keypunch operator, etc.). |
| ( ) | ( ) | D. EMPLOYER-EQUIPMENT SPECIFIC PREPARATION-skills and knowledge specific to a particular employer or piece of equipment. |

5. If there is a difference in your ranking of what IS and what SHOULD BE the type of preparation in TECHNICAL JOB SKILLS typical of SECONDARY vocational education, please explain why you think there is a difference.

Section 2

# PUBLIC POSTSECONDARY VOCATIONAL EDUCATION

## SECTION 2 – PUBLIC POSTSECONDARY VOCATIONAL EDUCATION

Listed in table 2 are five broad categories or areas of skills, knowledge and attitudes in which many people feel some level of proficiency is needed to succeed in employment. The specific questions in table 2 seek your opinion and judgment about:

6. Column A – What IS THE CURRENT emphasis and strength of public post-secondary vocational education?

7. Column B – What SHOULD BE the emphasis and strength of public postsecondary vocational education?

Answer these questions by circling the appropriate scale value (according to the scale below) for each of the major skill areas listed in table 2. If you feel there are other skill areas not covered by the five areas listed, please specify them and provide ratings.

Scale. Choose a value between 0 and 7. Use all eight scale values as appropriate. The ratings of 2 and 3 represent intermediate levels between MINOR emphaisis and MODERATE emphais. Similarly, the rarings of 5 and 6 represent intermediate levels between MODERATE empha... and SUBSTANTIAL emphasis and strength.

0 = NO emphasis is given to this skill area.
1 = MINOR emphasis is given to this skill area.
2 =
3 =
4 = MODERATE emphasis is given to this skill area.
5 =
6 =
7 = SUBSTANTIAL emphasis and greatest strength in this skill area.

TABLE 2

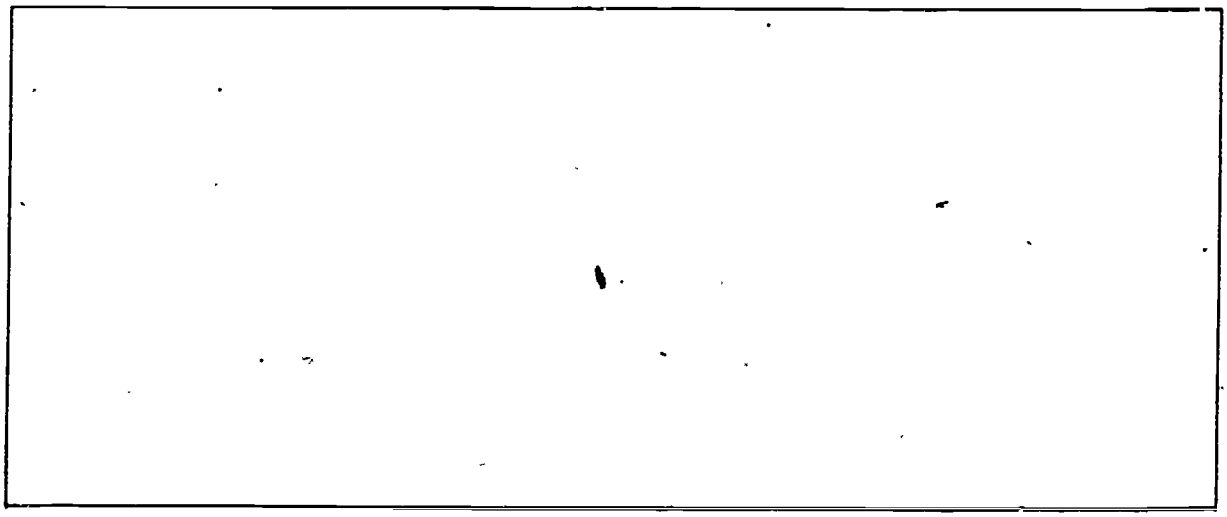
| | | What IS the current emphasis and strength of public POSTSECONDARY vocational education? | | | | | | | | What SHOULD BE the emphasis and strength of public POSTSECONDARY vocational education? | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a. | BASIC SKILLS—e.g., for survival in any job—reading, writing, computing. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | WORK VALUES AND ATTITUDES—e.g., dependability, cooperating with others, dressing and grooming, work norms. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | WORLO OF WORK KNOWLEDGE—e.g., knowledge of labor market operation, economic principles, work norms, collective bargaining, salary and benefits. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | JOB ENTRY, MAINTENANCE, AND ADVANCEMENT SKILLS—e.g., knowing how to fill out a resume, search for a job, complete a job interview, how to leave a job. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. | TECHNICAL JOB SKILLS—e.g., to perform a particular job or occupation; use of the tools, equipment and materials of a job. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| f. | Other (Please specifiy) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

8. If there is a difference in your ratings of what IS and what SHOULD BE the emphasis and strength of postsecondary vocational education in any of the five skill areas, please explain WHY you think there is a difference.

9. Listed below are the four broad types of preparation or instructions in TECHNICAL JOB SKILLS used in the previous section. Please RANK ORDER these types of preparations in terms of how well they characterize what IS and what SHOULD BE the typical or predominant type of preparation provided by public POSTSECONDARY vocational education. Recall that a rank 1 should be used to indicate the MOST TYPICAL type of preparation provided, and a rank of 4 to indicate the LEAST TYPICAL type of preparation.

| IS (Rank Order) | SHOULD BE (Rank Order) | |
|---|---|---|
| ( ) | ( ) | A. WORLD-OF-WORK PREPARATION—basic tool skills, occupational survival skills. |
| ( ) | ( ) | B. OCCUPATIONAL AREA PREPARATION—skills and knowledge of materials and methods common to group of occupations, printing occupations, construction occupations. |
| ( ) | ( ) | C. JOB-SPECIFIC PREPARATION—skills and knowledge specific to a particular job (e.g., secretary, computer programmer, keypunch operator, etc.). |
| ( ) | ( ) | D. EMPLOYER-EQUIPMENT SPECIFIC PREPARATION—skills and knowledge specific to a particular employer or piece of equipment. |

10. If there is a difference in your ranking of what IS and what SHOULD BE the type of preparation in TECHNICAL JOB SKILLS typical of POSTSECONDARY vocational education, please explain WHY you think there is a difference.



## Section 3—COMPARATIVE EMPHASIS AND STRENGTH

This section seeks your opinion and judgment about the comparative or relative emphasis and strength of public SECONDARY and POSTSECONDARY vocational education.

11. Relative to public POSTSECONDARY vocational education, what is it that public SECONDARY vocational education DOES/SHOULD DO best? Check ( ✓ ) one for each column.

| DOES BEST | SHOULD DO BEST | Providing . . . . . |
|---|---|---|
| ( ) | ( ) | Basic skills |
| ( ) | ( ) | Technical job skills |
| ( ) | ( ) | World-of-work knowledge |
| ( ) | ( ) | Work values and attitudes |
| ( ) | ( ) | Job entry, maintenance and advancement skills |
| ( ) | ( ) | Other (Please specify) _____ |

12. Now the reverse question—relative to public SECONDARY vocational education, what is it that public POSTSECONDARY vocational education DOES/SHOULD DO best? Check ( ✓ ) one for each column.

| DOES BEST | SHOULD DO BEST | Providing . . . . . |
|---|---|---|
| ( ) | ( ) | Basic skills |
| ( ) | ( ) | Technical job skills |
| ( ) | ( ) | World-of-work knowledge |
| ( ) | ( ) | Work values and attitudes |
| ( ) | ( ) | Job entry, maintenance, and advancement skills |
| ( ) | ( ) | Other (Please specifiy) _____ |

13. Relative to public POSTSECONDARY vocational education, what type of preparation or instruction in TECHNICAL JOB SKILLS DOES/SHOULD public SECONDARY vocational education do best? Check one ( ✓ ) for each column.

| DOES BEST | SHOULD DO BEST | |
|---|---|---|
| ( ) | ( ) | World-of-work preparation |
| ( ) | ( ) | Occupational area preparation |
| ( ) | ( ) | Job-specific preparation |
| ( ) | ( ) | Employer-equipment specific preparation |

14. Relative to public SECONDARY vocational education, what type of preparation or instruction DOES/SHOULD public POSTSECONDARY vocational education do best? Check ( ✓ ) one for each column.

| DOES BEST | SHOULD DO BEST | |
|---|---|---|
| ( ) | ( ) | World-of-work preparation |
| ( ) | ( ) | Occupational area preparation |
| ( ) | ( ) | Job-specific preparation |
| ( ) | ( ) | Employer-equipment specific preparation |

15. What roles and functions SHOULD secondary and postsecondary vocational education play in the next 10 to 20 years?

In preparing your response, you may wish to consider and address such matters as: (a) the optimum or most desirable role of secondary and postsecondary vocational education, (b) why these roles and functions are most appropriate, (c) what would be the distinguishing or unique characteristics and strengths of secondary and postsecondary vocational education, (d) how these roles and functions differ from the present roles and functions of secondary and postsecondary vocational education, (e) the coordination and articulation needed between secondary and postsecondary levels, (f) the federal, state, and local roles at secondary and postsecondary levels.

(Use page 11 for response)

THANK YOU FOR YOUR ASSISTANCE

RESPONSIVENESS OF PUBLIC

SECONDARY AND POSTSECONDARY VOCATIONAL EDUCATION

TO NATIONAL NEEDS AND PRIORITIES

NAME_____ DATE_____

INSTRUCTIONS:

Please respond to the following questions that are designed to assess your opinions about the role of vocational education in responding to national needs and priorities.

Section I requests that you assign a dollar figure to vocational education's budget in regards to national needs and priorities.

Section II addresses the how and why of your responses in Section I with emphasis on secondary vocational education.

Section III also elicits your input concerning the how and why of your earlier responses, but for postsecondary vocational education.

You may add extra pages to complete your answers if you wish. Your responses will be confidential.

SECTION I

Listed below on the left are eight critical needs or priorities of national interest that public vocational education is said to address or perhaps should address. We are seeking your opinion regarding the appropriate role of secondary and postsecondary vocational education in meeting these needs.

Assume you have $100 over and above the regular budget for secondary vocational education, and another $100 above the regular budget for postsecondary vocational education. Based upon your perception of the relative importance of each need/priority and the appropriateness for vocational education to address the needs, indicate how you choose to allocate these funds so that the needs can best be addressed.

As you are allocating the money assume that the cost of implementing programs to meet the needs is equal. The cost of implementing programs to meet one national need may actually be greater than the cost to meet another national need, but if you think the needs are equal, and wish that equivalent measures be taken to address those needs, then you should assign equal dollar amounts. We want your assessment of the relative importance for each level of vocational education to address the needs--not your assessment of costs for various types of programs.

You may distribute the funds in any way you see fit: put all $100 on a single need/priority, spread it across all the needs, or leave some needs blank. You may also indicate other needs or priorities and allocate funds to them. The only restriction is that your allocation should not exceed $100 each for secondary and postsecondary--each column must total to $100.

| NEEDS/PRIORITY | SECONDARY | POSTSECONDARY |
|---|---|---|
| a. *Displaced Workers* | | |
| b. *High Technology* | | |
| c. *Productivity and Economic Revitalization* | | |
| d. *Equity and Access* | | |
| e. *Basic Skills* | | |
| f. *National Defense* | | |
| g. *Youth Unemployment* | | |
| h. *Critical Skill Shortages* | | |
| i. *(Other)* _____ | | |
| _____ | | |
| _____ | | |
| _____ | | |
| *TOTAL* | *$100* | *$100* |

## SECTION II

## SECONDARY LEVEL VOCATIONAL EDUCATION

This section focuses on secondary level vocational education. In this section we would like you to explain the selection of each of the top three needs/priorities for secondary vocational education that you chose in Section I (try to rank them if you gave equal dollar amounts among the top three). We are interested in why you think it is appropriate for secondary level vocational education to address the need--not the importance of the need or justification of the priority.

1. Your choice of the need/priority to receive the most funding for secondary vocational education _____ (from your response in Section I).

   A. *Why* is it appropriate to respond to this need/priority at the secondary level?

   B. What should be the appropriate *role or function* of secondary level vocational education in responding to this need/priority? Why?



*You may use the back or add extra pages if you wish.*

C. What are the special *characteristics* of secondary level vocational education as a system for fulfilling this role or function?

D. Given your responses in A, B, and C, what *changes*, if any, do you think would be needed in secondary level vocational education to effectively fulfill this role or function (e.g., local level changes, state ~~level~~ changes, or national changes)?



*You may use the back or add extra pages if you wish.*

2. Your choice of the need/priority to receive the second largest amount of funding for secondary vocational education _____ (from your response in Section I).

A. *Why* is it appropriate to respond to this need/priority at the secondary level?

B. What should be the appropriate *role or function* of secondary level vocational education in responding to this need/priority? Why?



*You may use the back or add extra pages if you wish.*

C. What are the special *characteristics* of secondary level vocational education as a system for fulfilling this role or function?

D. Given your responses in A, B, and C, what *changes*, if any, do you think would be needed in secondary level vocational education to effectively fulfill this role or function (e.g., local level changes, state level changes, national changes)?



*You may use the back or add extra pages if you wish.*

3. Your choice of the need/priority to receive the third largest amount of funding for secondary vocational education _____ (from your response in Section I).

A. *Why* is it appropriate to respond to this need/priority at the secondary level?

B. What should be the appropriate *role or function* of secondary vocational education in responding to this need/priority? Why?



*You may use the back or add extra pages if you wish.*

C. What are the special *characteristics* of secondary level vocational education as a system for fulfilling this role or function?

D. Given your responses in A, B, and C, what *changes*, if any, do you think would be needed in secondary level vocational education to effectively fulfill this role or function (e.g., local level changes, state level changes, national changes)?



*You may use the back or add extra pages if you wish.*

SECTION III

POSTSECONDARY LEVEL VOCATIONAL EDUCATION

This section focuses on postsecondary level vocational education. As in Section II, we would like you to explain the selection of each of the top three needs/priorities for postsecondary vocational education that you chose in Section I (try to rank them if you gave equal dollar amounts among the top three). As before, we are interested in why you think it is appropriate for postsecondary vocational education to address the need--not the importance of the need or justification of the priority.

1. Your choice of the need/priority to receive the most funding for postsecondary vocational education_____ (from your response in Section I).

   A. *Why* is it appropriate to respond to this need/priority at the postsecondary level?

   B. What should be the appropriate *role or function* of postsecondary level vocational education in responding to this need/priority? Why?



*You may use the back or add extra pages if you wish.*

C. What are the special *characteristics* of postsecondary level vocational education as a system for fulfilling this role or function?

D. Given your responses in A, B, and C, what *changes*, if any, do you think would be needed in postsecondary level vocational education to effectively fulfill this role or function (e.g., local level changes, state level changes, national changes)?



*You may use the back or add extra pages if you wish.*

2. Your choice of the need/priority to receive the second largest amount of funding for postsecondary vocational education _____ (from your response in Section I).

   A. *Why* is it appropriate to respond to this need/priority at the postsecondary level?

   B. What should be the appropriate *role or function* of postsecondary level vocational education in responding to this need/priority? Why?



*You may use the back or add extra pages if you wish.*

C. What are the special *characteristics* of postsecondary level vocational education as a system for fulfilling this role or function?

D. Given your responses in A, B, and C, what *changes*, if any, do you think would be needed in postsecondary level vocational education to effectively fulfill this role or function (e.g., local level changes, state level changes, national changes)?



*You may use the back or add extra pages if you wish.*

3. Your choice of the need/priority to receive the third largest amount of funding for postsecondary vocational education_____ (from your response in Section I).

   A. *Why* is it appropriate to respond to this need/priority at the postsecondary level?

   B. What should be the appropriate *role or function* of postsecondary level vocational education in responding to this need/priority? Why?



*You may use the back or add extra pages if you wish.*

C. What are the special *characteristics* of postsecondary level vocational education as a system for fulfilling this role or function?

D. Given your responses in A, B, and C, what *changes*, if any do you think would be needed in postsecondary level vocational education to effectively fulfill this role or function (e.g., local level changes, state level changes, national changes)?

*Thank you for your time and effort in responding to this questionnaire. Please return it, along with the consultant paperwork, in the enclosed envelope.*

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