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ABSTRACT

This document offers the best available answers to questions frequently asked about vocational education by policymakers in vocational education at the state and local level. It is divided into two sections. The first section contains 15 frequently asked questions about vocational education effects and practices, each of which is followed by a brief answer and a short discussion. The responses integrate pertinent study findings from the literature that reflect the best knowledge of what current research says. Studies selected for review include (1) all relevant work conducted at the National Center, (2) other studies completed using large databases, and (3) journal articles and other original research identified across various reviews of literature. The questions refer to occupations of vocational graduates; earnings; effect of vocational education on employability skills development; job satisfaction; employer satisfaction with vocational education students; and the effect of vocational education participation on students' achievements in basic skills, school retention, further education and training, and development of values, self-esteem, and citizenship behavior. Other questions focus on minority groups and special population participation, employer benefits, use of occupational projections in planning vocational education programs, evaluation criteria for vocational programs, effectiveness of career guidance and counseling, and the effect of part-time work. The second section addresses some questions that still need answers regarding the aggregate effects on vocational education and administrative policies and practices. A list of references is provided. (YLB)

QUESTIONS FREQUENTLY ASKED ABOUT VOCATIONAL EDUCATION

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FOREWORD

Policymakers in vocational education at the state and local levels often ask for information to guide their decision making. These individuals are busy people and often do not have the time to review all the studies relevant to the problems they are addressing. Many of these policymakers have contacted the National Center for Research in Vocational Education to obtain the information they need. National Center staff keep abreast of the current policy issues and studies through projects conducted at the National Center and across the nation.

In addition, the National Center has established a comprehensive data archive of national longitudinal studies, which often includes high school transcripts, for examining the outcomes of vocational education. This data archive is the most objective and complete information base on vocational education available in the United States.

This document offers the best available answers to questions frequently asked by policymakers about vocational education. It also references the documents that have more in-depth information.

Many people have made significant contributions to the completion of this document. Among the staff at the National Center who have helped are the following: John Bishop, Paul Campbell, Morgan Lewis, Linda Lotto, N. L. McCaslin, and Nancy Puleo. We also wish to thank Cathy Jones, Mary Zuber, and Marilyn Orlando who assisted in the typing and final manuscript preparation. Finally, we appreciated the assistance of Judy Balogh, under whose supervision the document was edited.

INTRODUCTION

This document offers the best available answers to questions frequently asked about vocational education. These questions were selected by research specialists at the National Center for Research in Vocational Education and state administrators of vocational education. To develop an inventory of relevant information, the literature was searched for studies completed since 1980 that addressed each question. The studies selected for review included (1) all relevant work conducted at the National Center, (2) other studies completed using large databases, and (3) journal articles and other original research identified across various reviews of literature.

Study findings pertinent to each question were integrated in order to formulate responses that reflect our best knowledge of what current research tells us. The document was prepared relatively free of caveats and research language. It was prepared for policymakers and others who are often asked to provide clear evidence of vocational education effects and practices.

The document is divided into two sections. The first section contains 15 frequently asked questions about vocational education, each of which is followed by a brief answer and a short discussion. The second section addresses some questions that still need answers.

QUESTIONS FREQUENTLY ASKED AND THEIR ANSWERS

1. In what kinds of occupations do vocational graduates work?

The majority of vocational graduates work in occupations related to those for which they were trained—sales, clerical, crafts, and operatives occupations.

In the past, a large majority of secondary and postsecondary vocational education graduates obtained jobs in occupational areas related to their vocational training (Mertens et al. 1980). In a more recent study of individuals who concentrated in vocational education and were out of high school from 1 to 7 years, this tendency decreased to about 40 percent (Campbell et al. 1986). The more courses one takes in an area of vocational education, the more likely one is to obtain employment in a job related to that area (Rumberger and Daymont 1982; Campbell, Orth, and Seitz 1981). This holds true for male and female, black and white students. Male students who concentrate in a vocational education program area are three times more likely to be self-employed than are men of a similar age. However, female students who concentrate in vocational education are four times less likely to be self-employed than females of a similar age. Males tend to cluster in programs such as trade and industrial education and agricultural education (Gardner, Campbell, and Seitz 1982), and programs that lead to self-employment, whereas females cluster in the clerical programs, which are less likely to lead to self-employment.

Available data suggest that vocational education is not the only route to these occupational areas. Although 35 percent of all secretaries in the labor force report having received clerical training in a high school vocational education program, only 6 percent of technicians report the source of their training to be postsecondary public or private vocational education (Carey and Eck 1984).

High school vocational education prepares its graduates for occupations that do not require a baccalaureate degree. However, it clearly does not limit them to these jobs. Sixty-one percent go on to some form of postsecondary education, half of those go to 4-year colleges and universities (Laughlin 1986).

2. *Do high school vocational education students earn more than nonvocational students?*

Graduates of high school vocational education programs who work in occupations related to their training earn more than nonvocational students with similar years of education. This advantage dissipates over time as work is influenced by other factors such as on-the-job training, continuing education programs, and so forth.

The comparison group is key to understanding the wage advantage of vocational students. Most researchers have examined the earnings of students who went directly to work from high school and compared those students with vocational education to those without vocational education. Not surprisingly, students working in occupations related to their training earned more than comparable students without vocational education or those with such training but not working in training-related jobs (Campbell and Basinger 1985).

Research based on actual student transcripts has yielded more consistent findings related to the earnings of vocational graduates than previous analyses based on student self-report of curriculum (Grasso and Shea 1979; Meyer 1981; Woods and Haney 1981). These researchers found wage advantages that varied by race, gender, proportion of vocational credits, and area of study. In general the effect of secondary vocational education on earnings seemed to be more consistent and positive for women than men. Recent analyses (Campbell and Basinger 1985) reverse that conclusion. They find that training which results in a job in a relevant occupation has a larger earnings impact on men than on women. Fewer men get training-related jobs, but when they do, the payoff is greater for them than it is for women.

3. *What effect does vocational education have on employability skills development (i.e., attitudes toward work, work habits, job seeking, and retention skills)?*

There is little evidence that high school vocational education has a unique impact on developing employability skills.

There is limited evidence on the impact of vocational education on employability skills; that which does exist indicates little effect. The popular longitudinal surveys have little data relevant to this question so researchers have relied on smaller scale studies. Cumulation across these efforts is hampered by the variation in focus across the categories of skills and attitudes known as employability skills. Also, vocational education researchers have been predominantly interested in the employment and wage effects of vocational education and not in the development of generalized occupational skills, as manifest by the paucity of studies in this area.

It appears that high school vocational education is less likely to have an impact on student values and attitudes than it is to attract *a priori* a group of students with similar values and attitudes. Berryman (1980) describes vocational education in the high school as a "niche" for students who—

- come from lower socioeconomic families;
- do not do well at the high status tasks of school (i.e., cognitive, academic learning);
- are not part of the high school extracurricular structure except those activities directly related to the vocational curriculum; and
- rate the quality of the school positively.

Gardner (1984) concludes that "benefits from vocational education are attributable to occupationally specific skills rather than to general work habits or attitudes" (p. 43).

Concentrating in vocational education does not appear to be linked to voluntary or involuntary job separations (Gardner, Campbell, and Seitz 1982) or to patterns of job advancement (Woods and Haney 1981). Vocational education appears to provide students with the training and credentials to obtain employment, but career advancement may be more related to personal qualities and job performance than to initial training.

Experience-based career education (EBCE) does not attempt to teach occupational skills, but does use guided learning in community settings to develop general career skills. There have been many evaluations of these programs, and a meta-analysis of 80 of the evaluations yielded strong evidence that EBCE does produce positive changes in many of the attitudes related to academic achievement in addition to employability (Bucknam and Brand 1982). These gains are larger than those experienced by similar students who took the regular classroom curriculum.

4. *Are graduates of vocational education satisfied with the jobs they obtain?*

Most vocational graduates, especially those who obtain work in the areas for which they received training, are satisfied with their jobs.

Most workers report that they are satisfied with their jobs, and vocational education graduates are no exception—especially those with the most vocational concentration in high school. Vocational education appears to contribute to job satisfaction in several ways. First, it provides skill training for those occupations that have higher reported job satisfaction among their workers. More vocational graduates report that they are in jobs where working conditions are safe and pleasant than otherwise comparable general curriculum graduates.

Satisfaction with job rewards, although closely associated with wages, is also found significantly in farming, sales, and clerical occupations where wages are frequently lower than in industry. Here again vocational education contributes to job satisfaction by providing training for these occupations.

Satisfaction with human interactions, another form of job satisfaction, is found in the smaller firms to a greater degree than in larger ones. It is in those smaller firms that a majority of high school vocational graduates work (Gardner, Campbell, and Seitz 1982). Vocational education thus makes its positive contribution to job satisfaction by preparing young people for occupations and workplaces where satisfaction is higher, perhaps through the contacts the vocational educators have with smaller industries in their communities.

5. *Do employers feel satisfied with vocational education students as actual or potential employees?*

Employers are generally positive toward vocational education as a provider of occupational-specific skills. They are not totally satisfied with the basic skill proficiencies and general trainability of young workers in occupations not requiring a 4-year college degree.

Prior to the Carl D. Perkins Vocational Education Act, federal legislation required that vocational programs be evaluated by the extent to which employers considered program completers and leavers "to be well-trained and prepared for employment" (P.L. 94-482 Section 112 [b] [1]). Studies conducted to satisfy this requirement (e.g., TDR Associates 1983) yielded such uniformly high levels of satisfaction that the results provided little information that could be used to guide program improvement. Consequently, this criterion was dropped in the Perkins Act.

When employers are asked more general questions about their preference for vocational or academic preparation, their responses depend on the way the question is phrased. Nunez and Russell (1982), for example, found in a survey of the members of the National Association of Manufacturers that 85 percent preferred hiring vocational education graduates to nonvocational graduates, all else being equal, for jobs requiring less than a 4-year college degree. In a survey of Los Angeles-area employers, however, Wilms (1984) found that when asked whether they preferred applicants who had been enrolled in vocational or academic curriculum, 49 percent of employers responded that they had no preference, 34 percent preferred applicants who had been enrolled in academic curricula, and 17 percent favored those with backgrounds in vocational education. These results appear to reflect an assessment of the general ability of students from these curricula rather than the value of skill training.

All employers want employees with good verbal and academic skills, probably because these skills "signal" trainability, adaptability, and achievement motivation. Beyond a certain threshold of performance in basic academic skills, employers look for occupational skills, and vocational education programs are viewed as credible providers of training for such skills.

6. *What is the effect of participating in vocational education on students' achievements in basic skills?*

Vocational education tends to attract students who are significantly less proficient in basic skill areas than academic students. In vocational education classes these students receive little explicit instruction in basic academic skills. However, they tend to gain in this knowledge of basic skills at the same rate as academic and general students.

Research consistently shows that vocational education students are less proficient in basic skills than academic students. According to Weber (1982), "the average performance of secondary vocational students on standardized basic skills measures appears to be somewhere between the 35th and the 40th percentile" (p. ix). Students who enter and complete vocational education programs score significantly lower on tests of basic skills than their academic track counterparts. However, they tend to gain in academic scores similarly to the gains made by academic and general students. Why do less-able students enroll in vocational courses? For some, vocational education is viewed as a path through high school in which there is more emphasis on practical and concrete learning experiences.

Support for assertions about what types of learning goes on in vocational classrooms is scarce. However, based on a 1983 study of time use in vocational classrooms (Halasz and Behm 1983), it appears that of total engaged time, approximately 5 percent is spent on basic skills. Vocational education is attracting a group of students in need of reinforcement and remediation in basic skills and is providing little instruction specifically to meet that need.

Students who concentrate in a vocational speciality average 6.3 Carnegie Units (CU) of vocational course work. Compared to students who take no vocational courses, the total credit load of concentrators is 0.8 CU greater, and they take 2.9 CU fewer academic courses and 2.5 CU fewer nonacademic, nonvocational courses (Campbell 1986). The effect of the time devoted to academic course work depends on the nature of the academic courses taken. Students who take demanding college preparatory courses improve their test scores between sophomore and senior years more than those who do not. If the academic courses are not college preparatory, however, the additional academic courses have only small effects on learning. Some kinds of vocational courses have positive effects on academic skills. Holding the academic course load constant, 3 years of business and office courses raised the gain on vocabulary and civic tests by 30 and 15 percent of a grade equivalent. Three years of trade and technical courses raised the gain on a math test by 15 percent of a grade equivalent (Bishop 1985).

The conclusions cited above are based upon measurement by conventional tests. A study by Loadman and Rinderer (1986) using tests based upon the language and examples of the vocational curriculum found that vocational graduates outperformed both academic and general students in science and mathematics when ability was controlled. Therefore, the answer provided to the question of the contribution of vocational education to basic skills achievement must remain tentative until the question of measurement adequacy can be answered with confidence.

Regardless of that possibility, however, it is informative to consider what proportion of time a vocational graduate has spent in vocational course work as compared with the basic skill development that is presumed to be a major function of academic and general education. The average vocational *concentrator* who has attended kindergarten and 12 years of elementary and secondary schooling will have spent less than 10 percent of his or her school time in vocational courses. For a *limited concentrator*, the figure drops to less than 5 percent. It does not seem reasonable to place the total burden of basic skills achievement or remediation on that fragment of the total school time investment.

7. Does vocational education contribute to school retention?

Vocational education appears to have some positive effects on high school completion.

Research in this area has been confounded in two ways. First, most dropping out occurs *before* most students enter vocational education. (Most dropping out occurs at grade 10; most vocational programs begin at grade 11.) Second, attribution of any particular cause to a given decision after the fact is difficult. Thus researchers must look for commonalities across many studies that seem *associated* with decisions to drop out. Results so far are tantalizing but hardly conclusive.

Berryman (1980) reports that analyses of Project TALENT and the National Longitudinal Survey of the Class of 1972 showed dropouts to be disproportionately from the general curriculum. Profiles of the typical dropout and typical vocational student differ dramatically. Whereas the typical dropout is performing far below others of his or her age, has been experiencing difficulty since elementary school, and is alienated from school, school activities, and school values, the typical vocational student possesses a positive attitude toward school, clear goals, and general satisfaction with life and school.

Could disaffected students be socialized through vocational education to staying in school? Mertens, Seitz, and Cox (1982) found that among students in high probability dropout groups, the more vocational education they had, the less likely they were to drop out. Perlmutter (1982) also showed that among matched groups of students in New York City, all of whom had applied to attend specialized vocational high schools, those who were admitted were more likely to graduate.

Recent evidence (Weber 1986) suggests that the phenomenon reported above is generalizable across all student groups. These researchers found that the best predictor of dropping out was the number of credit hours students carried. Dropouts carried far fewer credit hours than nondropouts. The logic is appealing. Students who don't like school enroll in fewer courses and ultimately drop out. Thus school completion is associated with a student taking more courses *of any nature*. Unfortunately this indicates that the phenomenon being observed is not the effect of an educational treatment of dropping out, but rather a characteristic of students who drop out.

Another source of information on school retention is effective dropout prevention programs. Lotto (1983) found that effective dropout prevention programs utilizing a vocational education component were characterized by (1) multiple strategies or program components, (2) contexts and environments dissimilar to the traditional

school and classroom environment, and (3) concentration on a small number of students. These findings do not highlight the value of vocational education, but they do indicate that work, cooperative education, and "schools without walls" programs are likely to be successful not only because of curricular relevance but because of the environmental distinction of work from school.

8. *What effect does vocational education have on further education and training?*

Graduates of vocational programs are somewhat less likely than graduates of academic programs to pursue post-high school education. Vocational graduates are as likely to attend college as general program graduates. Of those who go on, about half choose technical or community college programs and half attend 4-year colleges.

The most powerful determinants of post-high school education are student ability and achievement and, to a lesser degree, socioeconomic status (Campbell and Basinger 1985). Since these variables also predict high school curriculum choice, the direct effect of vocational education on further education is obscured by the tendency of students who do not aspire to college to select the vocational curriculum.

It is clear that vocational program graduates do pursue post-high school education. According to Campbell and Basinger (1985), approximately 61 percent of vocational graduates pursue some form of post-high school education. This compares to 92 percent for academic track students and 60 percent for general track students. When family background, college aspirations, and 10th-grade test scores and grades are controlled, the effect of curriculum is small. Vocational graduates are 8 percent less likely than academic program graduates to enroll in postsecondary education and only 3 percent less likely than general program graduates to enroll in postsecondary education. A larger proportion of vocational graduates go on to technical college programs—15 percent compared to 4 percent for academic and 9 percent for general track students. The success rates of vocational students in completing postsecondary education programs is similar to those of general students and only slightly less than academic students. Thus vocational education's unique influence on post-high school education appears to be with regard to the type of program selected (i.e., a moderate increase in technical training).

9. *What effect does vocational education have on the development of values, self-esteem, and citizenship behavior?*

No independent effects of high school curriculum choice on values, self-esteem, or citizenship have been established. Observed differences appear to be linked to ability and family background variables that vary systematically with curriculum choice.

The research base in this area is thin. The most rigorous studies rely on the longitudinal databases that contain information on such characteristics as locus of control, social confidence, and self-esteem. These data sets also provide follow-up interviews on such behaviors as voting, organizational involvement, and turnover. These findings illustrate instances in which vocational students were found to differ from other student groups:

- Graduates of vocational education curriculum were below average and college preparatory graduates above average on rates of organizational involvement (Campbell and Basinger 1985).

- Vocational education students value occupational security, family happiness, and steady work progress more than do academic groups (Berryman 1980).

- Vocational program graduates were significantly less likely than academic graduates to have engaged in direct political campaign activity (Campbell and Basinger 1985).

As noted earlier, Berryman (1980) describes secondary vocational education as a "niche" for certain students. The common values, attitudes, and characteristics shared by these students are not the results of enrolling in vocational education, but rather are associated with the vocational population. Thus observed differences are not independent effects of the curriculum, but background characteristics of students who select vocational education.

10. *What is the participation of minority groups and other special populations in vocational education, and what effect does their participation have on labor market experiences?*

Minority and handicapped students enroll in vocational education approximately in the same proportion as they are represented in the total student population. Those who graduate earn more than similar minority students who did not enroll in vocational education.

Disregarding income, status, and other differences, minorities and handicapped students enroll in vocational education in similar proportion to their representation in the general population. Everything else being equal, however, some interesting exceptions are found. In most recent data when minority men and women are compared with others like themselves (similar socioeconomic status (SES), ability, and so forth), they are slightly less likely to enroll in vocational courses. The real differences in enrollment are associated with characteristics other than minority status. Campbell and associates (1986) found that "the high school vocational education curriculum attracts, in disproportionate numbers, youth from the lower socioeconomic strata, rural youth, youth of lower ability, and youth with feelings of personal inadequacy" (p. 131). Minority men are less likely to enroll in vocational education than non-Hispanic white men.

Women and minority vocational students as well as students of low SES enjoy a clear wage advantage. The wage advantage for vocational students over those without vocational training (all else being equal) are 11 percent for the low-SES group, 9 percent for women, and about 9 percent for other minority group (Campbell et al. 1986; Berryman 1980).

The wage advantage of postsecondary education is significant and increases as the years of further schooling increase. Campbell et al. (1986) found that full-time workers with 2, 3, and 4 years of postsecondary education enjoyed hourly wage advantages of 5, 9, and 18 percent, respectively, over workers with no postsecondary education. In every case (women, Hispanics, Blacks, and workers from low-SES backgrounds), 4 or more years of postsecondary education yielded a wage advantage of at least 20 percent.

11. What are the benefits to employers of hiring vocational graduates?

Employers who hire vocational graduates for jobs relevant to their training benefit in the form of lower training costs and slightly more productive employees.

Studies that have examined what employers look for in new employees have produced various results. Employers want good attitudes toward work, good basic skills, good interpersonal skills, and good occupational skills. These skills are "signalled" to employers through grades in school, courses taken, handwriting, dress, speech, and actual performance tests. Employers benefit when they are able to hire an individual with good job skills, a willingness to work hard and be productive, and the ability to get along with co-workers and managers—in general, an asset to the firm.

Vocational education's contribution to producing this model employee has not been explicitly addressed by many researchers. In the only relevant study uncovered, Bishop (1985) found that new employees with job-relevant training from high school were 9 percent less costly to train during the first 3 months and 3 percent more productive during the first year on the job than other new employees without such training. New employees with job-relevant training from a community college or a public vocational training institute were 22 percent less costly to train, 13 percent more productive in the first 2 weeks on the job, and 1 percent more productive after a year on the job and less likely to be dismissed. New employees with job-relevant training from a private vocational training institution were 38 percent less costly to train, 36 percent more productive in the first 2 weeks, and 8 percent more productive after a year on the job, and less likely to be dismissed. They did not receive appreciably higher wages, so the employer clearly profits when a worker with job relevant vocational training is hired. However, there were no such benefits to the employer if the vocational graduate worked outside the occupation for which he or she was trained. These new hires required more training than the new hires with no vocational training in their background.

12. *How are occupational projections used in planning vocational education programs?*

Occupational projections are neither the sole nor the key template against which vocational education programs are planned and developed.

Occupational projections abound. The Bureau of Labor Statistics, U.S. Department of Labor publishes a variety of occupational projection data—the *Monthly Labor Review*, the *Occupational Outlook Handbook*, *Occupational Outlook Quarterly*, and *Occupational Projections and Training Data*. National and state occupational information coordinating committees exist to provide occupational information to vocational education planners and administrators. These data are to be used, conventional wisdom suggests, as the basis for planning vocational education programs. Occupational projections are to be a strong link in ensuring that vocational education is responsive to employer needs.

In reality these data seldom play the central role in planning decisions. In a recent study Franchak (1983) found that "the majority of [local vocational education program administrators] indicated that the published data provided by state and national sources did not address their needs, and were considered only because of requirements for state or national planning activities" (p. 17). Instead local data, most often in the form of employer surveys, are the most frequently used occupational forecasts. Since students cannot be coerced into training programs, student interest is a powerful input to planning. Organizational constraints (e.g., available faculty and equipment and contextual conditions such as competition from other schools and training sites) figure into the planning of a program.

13. What criteria are used in evaluating vocational programs?

Criteria used to evaluate vocational education are often grouped around topics such as *economic* (e.g., training-related placement rates, earnings, types of employment), *educational* (e.g., basic educational skills, occupational skills, school completion rates), and *personal/societal* (e.g., attitudes and values, self-esteem, and citizenship). Additionally, state education agencies conduct reviews of 20 percent of their vocational education programs each year. These reviews include topics such as program operations/management, program information, student information, staff information, and community information.

A wide range of criteria has been used to evaluate vocational education. Previous federal legislation for vocational education has primarily called for economic and labor market outcome data. However, the Carl D. Perkins Vocational Education Act has also included educational outcomes in terms of general occupational skills as well as improving academic foundations. The Perkins Act also calls for each state to evaluate not less than 20 percent of its vocational programs each year, as was the case in the previous law. Specifically, the Perkins Act of 1984 requires that states assess the quality of vocational education in the following terms:

- The pertinence of programs to the workplace and to new and emerging technologies
- The responsiveness of programs to the current and projected occupational needs in the state
- The capacity of programs to facilitate entry into, and participation in, vocational education and to ease the school-to-work and secondary-to-postsecondary transition
- The technological and educational quality of vocational curricula, equipment, and instructional materials to enable vocational students and instructors to meet the challenges of increased technological demands of the workplace
- The capability of vocational education programs to meet the needs for general occupational skills and improvement of academic foundations in order to address the changing content of jobs

It further stipulates that states will develop measures for the effectiveness of programs in meeting the needs identified in state plans. Some of these evaluation measures include the following:

- The occupations to be trained for, which will reflect a realistic assessment of the labor market needs of the state

- The levels of skills to be achieved in particular occupations, which will reflect the hiring needs of employers

- The basic employment competencies to be used in performance outcomes, which also will reflect the hiring needs of employers

In evaluating vocational education, three major types of outcomes have been addressed: economic, educational, and personal/societal. Economic outcomes include criteria such as training-related placement rates, earnings, types of employment, employer satisfaction, and labor force participation rates. Educational outcomes include criteria such as basic educational skills, employability skills, occupational skills, and school attendance and dropout rates. Personal/societal outcomes include criteria such as attitudes and values, self-esteem, and citizenship.

In meeting requirements to evaluate not less than 20 percent of a state's programs each year, the National Institute of Education (1981) reported a fairly typical procedure. The topics included in the program review included those dealing with program operations/management, program information, student information, staff information, and community information. Although many states have revised their program review procedures, the same major topics are being addressed.

Several studies have been reported that have addressed the area of evaluation criteria in a more comprehensive manner (McKinney, Gray, and Abram 1978; Darcy 1980; Copa and Salem 1982; McKinney and Fornash 1983; and Campbell 1985). For additional information the reader is referred to these documents.

14. How effective are career guidance and counseling activities in secondary schools?

There is little evidence that schools with strong career guidance programs influence feelings about one's self or educational and occupational expectations any more than schools with weak programs.

In a recent study, Hotchkiss and Dorsten (1985) report on analyses of data from the High School and Beyond database. These analyses assess the effects of school guidance programs on five outcomes that, it is argued, reflect the central mission of career guidance as expressed in the professional guidance literature. The five outcomes are locus of control, self-esteem, perceived ability to complete college, educational expectations, and occupational expectations. A variety of measures of the degree to which schools have in place an active career guidance program fails to reveal any substantial influence on these outcomes.

These findings contrast with the more positive findings of many recent reviews of career-guidance effectiveness. Hotchkiss and Dorsten (1985) suggest the discrepancy may result from the specificity of outcomes studies (e.g., most evaluation studies assess the effectiveness of specific techniques or treatments, not the degree to which more general and central outcomes are achieved), the time period over which changes are assessed (most evaluation studies assess short-range or immediate changes) and the study designs used (most evaluation studies use small sample and fairly rigid experimental designs).

The issues raised by this study are not inconsequential. It is clear from previous syntheses that career guidance treatments do have an impact. Yet, over time and in the aggregate these treatments seem to wash out. Is career guidance so amorphous and complex that it defies precise definition and identification? Are the effects sustainable beyond controlled laboratory settings in real field contexts? Again, Hotchkiss and Dorsten (1985) speculate the following:

- Schools may lack resources to produce integrated programs with measurable effects.
- School-level planning may be inadequate to produce consistent effects.
- Family influence on career matters (expectations, self-esteem) may override the effects of school programs.

15. What effect does part-time work have on secondary school students?

Part-time work during high school, when coupled with high school graduation, enhances students' employability, and in the short range, their wages, relative to students without work experience. However, part-time work may lead to lower school involvement, poor school performance, and increased use of cigarettes, alcohol, and marijuana.

Seventy percent of all students work during high school; 80 percent of those work in jobs unsupervised by the school. Students in school-supervised jobs work more hours per week, are employed in middle as opposed to low skill-content jobs, and are more likely to be concentrating in a vocational education program than students holding unsupervised jobs (Lewis, Gardner, and Seitz 1983).

Many of the benefits of part-time work to students are economic, that is, the current and anticipated wages received. But equally important is the work experience per se. Having no work experience is a serious disadvantage to young job applicants (Hollenbeck and Smith 1984). Working during one's junior year has little impact on labor market success after high school, but working during the senior year has important effects. Working 10 hours per week during one's senior year raises wage rates by 2 percent, employment by 4 percent, and earnings by 7 percent. Working during the summer between junior and senior years has even larger positive impacts on labor market outcomes (Bishop 1985). According to Greenberger and Steinberg (1980), students who work develop an enhanced work orientation, acquire practical knowledge, and may learn to deal more effectively with other people.

Steinberg and associates (1982) caution that "working appears to have small but significant effects on schooling and learning. . . . The negative impact of working on school performance, is not unexpectedly, strongly related to the number of hours a student works each week" (p. 371). Similarly, Greenberger and Steinberg (1980) report that use of cigarettes, alcohol, and marijuana increase with hours worked. Hotchkiss (1982) and Gottfredson (1984), however, did not find these negative effects when they analyzed other data.

During the late seventies, the time devoted to working had only small negative effects on learning. A 10-hour-per-week job during junior year lowered test scores by 2-4 percent of a grade level equivalent. This tradeoff may increase if high schools increase homework assignments and raise academic standards (Bishop 1985).

QUESTIONS FREQUENTLY ASKED THAT STILL NEED ANSWERS

There are some frequently asked questions about which little can be said. Questions relating to the effects of vocational education on individual earnings and employment have been well studied. Questions relating to the aggregate effects of vocational education have received little systematic attention, perhaps due to inherent methodological difficulties. Other questions that need attention relate to comparisons between vocational education and other skill training programs such as those delivered by private occupational schools, employers, and other federal job training authorization. Last, questions related to current administrative policies seem to be supported by little beyond philosophical preferences. Below are grouped the major questions for which no answers are currently available.

Aggregate Effects of Vocational Education

1. *How are vocational education programs contributing to economic development initiatives in local communities, states, across the nation?*

Empirical estimations of vocational education's contribution to economic development are practically nonexistent. Most analysts who seek to move beyond the rhetoric fall back on economic theories about the value of a trained work force and econometric analyses of measures of productivity. Thus we learn that training improves productivity, but the question of which source of vocational education is the most effective or efficient remains unanswered.

Despite the scarcity of data, belief in training and education as an important component of economic development runs high. States such as North Carolina, Massachusetts, and Michigan have developed economic development programs in which vocational education is an integral component.

2. *To what extent are vocational education programs and services meeting the needs of displaced workers?*

Vocational education programs designated to serve displaced workers are in operation across the country, predominantly in the over 1,200 community, junior, and technical colleges (Eliason 1984). What is not known is (1) how adequately these programs meet the needs of displaced workers and (2) how effective they are compared to retraining programs sponsored by the U.S. Department of Labor, private companies, or labor unions.

Administrative Policies and Practices

3. *What are the cost benefits of providing vocational education through area schools and skill centers versus comprehensive high schools? What about social and academic advantages?*

The impetus to create area schools and area skill centers was primarily economic—school districts can offer more expensive courses with more up-to-date equipment if they jointly operate such programs with neighboring districts. Economically, the strategy looks good. However, little attention has been paid to the diminished access resulting from consolidation. Whereas formerly a broad—albeit shallow—sampling of vocational offerings was available to students in the comprehensive high school, consolidation forced a choice between staying in one's home school without vocational courses or traveling to the area school. For the student who chooses not to attend the area school program, the issue becomes: Is some training better than no training?

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