High School Vocational Education: Past and Present

Historical Overview

No force has been more powerful in man’s rise from savagery to civilization than work. (Roberts 1957, p. 5)

Let’s acknowledge that education for and about work began at the very beginning of civilization with the creation or evolution of humankind. It was, of course, at the hands of parents— the true teachers, or meisters, or master tradesmen— who in turn passed on their knowledge and skills to their children. The earliest prehistoric artifacts available today show a man working with implements more than 50,000 years ago and passing on his knowledge to a “student.” Even the highest acclaimed professions of today— astronaut, physician, philosopher, clergy— are most essentially about work and all call for a solid education and job skills to prepare them well for the tasks, duties, and responsibilities of the job. So, indeed, vocational education (or career and technical education) is ubiquitous.

However, the general discussion of vocational education in the United States focuses on that which has evolved in response to federal legislation. Beginning in 1862 (and again in 1890), Congress passed the Morrill Acts providing aid to higher education for land-grant colleges. The Hatch Act of 1887 and the Adams Act of 1906 allocated aid to agricultural experiment stations, and the Smith-Lever Act of 1914 provided support for agricultural and home economics extension programs (Roberts 1957). These acts helped to democratize the land-grant colleges and began the practice of federal subsidies to education (Roberts 1957; Swanson 1951).

The beginning of the major federal influences in molding and shaping secondary and postsecondary (i.e., subbaccaluareate level) vocational education began with the Smith-Hughes Act of 1917. This legislation was devised in response to a complex set of social, economic, and political forces. In particular, it was enacted to prepare youth for jobs resulting from the industrial revolution and to provide them with an alternative to the general curriculum of schools, which were “too exclusively literary in spirit, scope, and methods” (Swanson 1951, p. 16).

Smith-Hughes provided for a continuing appropriation for vocational education in agriculture, trades and industry, and home economics (homemaking) and for teacher training in each of these fields. Funds were appropriated for the administration of the program at the national level. In essence, Smith-Hughes provided for an alternative high school education from that typically provided at the time for middle and wealthy classes of students. The Smith-Hughes Act emphasized separatism from the classical curriculum and called for a new one that would better meet the needs of the children of the working
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class, who, for the first time, were attending high school but were not headed for the professions (Gray 1991).

The Smith-Hughes Act provided for a Federal Board for Vocational Education and separate state boards. Each state was required to submit a state plan for federal vocational education funding and to agree that (1) the federally aided program of vocational education would be under public supervision and control, (2) the controlling purpose would be to fit students for useful employment, (3) vocational education would be of less than college grade and designed to meet the needs of persons over 14 years of age who had entered or who were preparing to enter the occupation for which they were receiving training, and (4) the state or local community would provide the necessary plant and equipment (Roberts 1957, p. 132).

It is important to note, as historical context, that the Smith-Hughes Act established vocational education with a separate board from that of the state board for “regular” (i.e., classical) education as well as with separate funds, separate teacher preparation and certification, separate students, and separate and segregated curriculum. The Federal Board mandated the 50-25-25 rule: 50 percent of students’ time in shop work, 25 percent in closely related subjects, and 25 percent in academic courses (Hayward and Benson 1993). The intent was, of course, to separate vocational students from those in the classical curriculum and prepare them well for the factories, farms, and homes of the era. And, as is well known, the state plan is still a required prelude to receiving federal funds to support state leadership and local programs of vocational education.

Since the beginning of this separatism in 1917, vocational teachers have predictably emphasized job-specific skills, almost to the complete exclusion of theoretical content (Hayward and Benson 1993). Program areas or fields of study matching the specific industrial categories called for in the legislation were developed and have persisted with great gusto over the past 80 years and others have been added: distributive education, business education, health occupations, technical education, occupational home economics (focused on wage-earning job preparation in contrast to the original act, which focused only on homemaking), and industrial arts. Thus each of these areas (although several now have different names) were developed with separate teacher certification or training programs, usually separate state administrators and often separate local supervisors, sometimes with separate (but relatively small) pots of funds, separate teacher organizations, separate youth clubs or organizations, and separate lobbyists for federal and state funds. These separate programs, especially through their teacher and youth organizations, became very powerful and influential.

Until recent years, all states had large (at least compared to fine arts and academic subject areas within education) and influential program area state supervisors and a designated state director (and staff) for vocational education who had responsibilities for program development, curriculum development, teaching and learning, youth clubs, research, assessment, etc. Probably one of the reasons these state staffs became so relatively large and powerful is that some of their salaries and related administration costs were often paid 100 percent with federal funds. Since 1990, there has been quite a
decline in the numbers of state staff working just in the area of vocational education in most of the states, as the percentage of each state’s federal grant that could be used for state administration has been reduced significantly.

The strong federal influence on the development, growth, and nurturing of vocational programs largely remained unchanged throughout the years. Federal policy still looms large in comparison to the relatively small amounts of money the federal government contributes to support vocational education at the local school level—estimated to be only about 6-7 percent on a national average, although the percentage is much higher to support separate vocational high schools or area vocational centers.

Programs in vocational education at the local level were primarily controlled and operated by vocational educators for vocational education students, under the justification that it was vocational education money. Many vocational education programs did not (and still do not) come under the same general school scrutiny or supervision as general and academic subjects or even fine arts and physical education programs. In fact, vocational education was not (and still is not) often on the “radar” of general education policymakers, principals of comprehensive high schools, or school system superintendents. Historically, the direction for vocational education has almost exclusively come from the practitioners themselves or the federal government.

The earliest vocational programs were grounded primarily in the need to prepare more immigrants and blue collar-type workers with practical skills for the nation’s farms, factories, and homes. The focus of federal legislation shifted over the years to ask states to offer programs and training to support national defense efforts (1920s), reduce unemployment problems (1930s), assist the war effort (1940s), include junior (now most are called community) colleges in the 1950s, and shift industries to peacetime economic development in the 1950s and 1960s. But the general thrust of federal policy and funding was to train boys and girls for jobs in the economy.

A significant change in federal policy and direction began in the early 1960s with passage of the Vocational Education Act of 1963. The federal government stepped up influence over state plans by including set-asides, most predominantly to serve poor and disabled persons and youth in economically depressed communities who had academic, socioeconomic, or other disadvantages that prevented them from succeeding in regular vocational education programs. Later amendments in 1968 and 1972 continued set-asides to expand Congress’ leverage for vocational educators to serve students with disabilities, disadvantaged students, bilingual students, postsecondary students, and students preparing for occupations not traditional for their gender.

In 1984, Congress passed the Carl D. Perkins Vocational Education and Applied Technology Act, the forerunner of today’s federal legislation. The Perkins Act contained two main objectives: (1) the improvement of vocational programs and (2) better services and increased access to vocational education for students with special needs. These two goals proved to be both ambiguous and overly ambitious, given the state of the economy and the state of education at the time. The original Perkins Act set aside 57 percent of the federal grants to states for disadvantaged groups of one form or another and 43 percent
for something called “program improvement.” In the late 1980s and early 1990s, vocational education experienced unprecedented enrollment percentage increases from special populations as an increasing number of general student groups opted out of vocational education to take more academic courses and as funding favored inclusion of special populations in vocational education programs.

Perkins II (1990) and Perkins III (1998) made further dramatic shifts in federal direction for vocational education. Both of these pieces of legislation are essentially grounded in school reform and the mandate to use federal funds to improve student performance and achievement. Perkins II prescriptively called for programs to develop more fully “the academic and occupational skills of all segments of the population. This purpose will principally be achieved through concentrating resources on improving educational programs leading to academic and occupational skills competencies needed to work in a technologically advanced society” (Carl D. Perkins Vocational Education and Applied Technology Act Amendments 1990, p. 7). For the first time in federal vocational education legislation, emphasis was placed on academics and funds could be directed to “all segments” of the population. Tech prep programs were specifically funded.

Perkins III (1998) continues the essence of Perkins II and the “program improvement” component of Perkins I. The federal focus continues to be on developing the academic, vocational, and technical skills of students through high standards and linking secondary and postsecondary programs. Much of the specific language setting aside a percentage of funds or actual dollars for special populations has been removed. States are to provide services to special populations to help them succeed in high-quality vocational education programs, but the federal government will not dictate what those services are to be. The federal government, however, will require each state to provide data on four core indicators of performance: (1) attainment of academic and vocational/technical proficiencies; (2) attainment of a secondary degree or General Educational Development certificate, proficiency credential in conjunction with a secondary diploma, and a postsecondary degree or credential; (3) placement in, retention in, and completion of postsecondary education or advanced training, placement in military service, or placement or retention in employment; and (4) participation in and completion of programs that lead to nontraditional training and employment.

It seems increasingly clear that we have almost come full circle with federal direction of vocational education. The post-turn-of-the-century legislation was enacted to prepare more students with the type of education it was thought they would need to run farms and factories in the 20th century. Today, Perkins III challenges us to prepare more students with the contemporary education they will need to work successfully in ever-changing, technologically sophisticated, and internationally competitive workplaces. In essence, today’s workplaces call for an increasingly educated work force for the 21st

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1 Congress’ intent in funding tech prep in Perkins II was to provide planning and demonstration grants to consortia of local education agencies and postsecondary educational institutions to develop and operate coordinated programs (2 years secondary-2 years postsecondary) with required academics and technologies and articulation agreements designed to lead to an associate degree or certificate in a specific career field. More detail is provided about tech prep in subsequent sections of this paper.
century. The major difference is that as a society it is no longer economically sound to track and separate students into those with only (or primarily) a classical curriculum and those with only (or primarily) a vocational curriculum or with relatively narrow, job-specific skills. Both the head and the hands and the theoretical and applied will be needed by most students in most workplaces at some point in their lives.

**Present Condition of High School Vocational Education**

As mirrored in the larger, complicated society and in its public education system, vocational education in the United States is diverse, large, and complex. It encompasses a great variety of programs designed to equip students with work and life skills. It is offered by more than 33,500 public and private institutions.

In public secondary schools, one or more courses identified with vocational education are offered in 93 percent of the nation’s 15,200 comprehensive, grades 9-12 high schools. Nearly all of these high schools offer introductory courses taught for purposes of general labor market preparation or to provide students with practical or life skills, such as typing or word processing, technology education (formerly called industrial arts), or family and consumer sciences (formerly called home economics).

About 75 percent of all comprehensive high schools offer specialized courses in one or more occupational programs, historically identified as agriculture, business and office, marketing, health, family and consumer sciences—occupational or wage earning, trade and industrial (which may consist of many specialities ranging from cosmetology to construction to mechanics and repair skills), and technical and communications (Boesel, Hudson, Deich, and Masten 1994). More recently, the federal government has added public and protective services, child care and education, food service and hospitality, technology and communications, and personal and other services to its classification of vocational or occupational program areas (Levesque, Lauen, Teitelbaum, Alt, Librera, and Nelson 2000). Fewer than 5 percent of comprehensive high schools offer courses from more than 6 vocational education programs (Hayward and Benson 1993).

More extensive specialized programs (particularly in trade and industrial) tend to be concentrated in some states in area vocational centers or vocational high schools to better accommodate the extensive facilities, workshops and laboratories, and equipment that are often needed and to offer greater depth and breadth of training for some occupational areas (Boesel et al. 1994). There are about 1,100 area vocational centers nationwide where high school students attend part of the day or evening for specialized vocational programs and attend their “home” high school for academic or general courses during the other part of the day. Where area vocational centers are available, the home or comprehensive high school typically does not offer extensive specialized vocational programs. In addition to area vocational centers, there are about 250 vocational high schools in the United States that focus on preparing students for work in a particular occupation or industry, but offer the academic and general courses at the school as well. Students attend this type of vocational high school full time (Boesel et al. 1994).
Public postsecondary vocational education is provided by 720 degree-granting community colleges, 162 technical institutes or colleges that grant degrees in technical fields, 504 postsecondary area vocational schools that do not grant degrees, 308 postsecondary schools serving only 1 industry, and 70 postsecondary skills centers for disadvantaged youth. In addition, there are approximately 2,400 private postsecondary schools offering vocational programs or courses (Hayward and Benson 1993).

To help explain the seemingly hodge-podge state of vocational education throughout the United States, it is important to note that public education is almost exclusively the responsibility (and related authority) of the 50 states and territories. Further, the states (with few exceptions) have determined that most education decisions are best left in the hands of locally elected school boards, and these boards are the ones considered best equipped to make education decisions for the students in their communities. Even within school districts, there often is great variability, and many curricular and instructional decisions are made at the individual secondary or postsecondary site. In fact, site-based management and decision making is the proffered governance mode on several prominent school reform agendas. These responsibility and authority aspects, and related education governance and control issues, are often hotly debated as educators struggle to implement reforms that may (or may not) be based on research, data, theory, opinion, rhetoric, political influence, special interests, and so on.

As Hayward and Benson (1993) noted, these state and local control factors have resulted in a vocational-technical system in the United States that lacks the attributes normally associated with a “system.” There are no national (and often no state) standards of skill development, no minimal or meaningful level of performance expected, no uniform curriculum, no consistent standards or expectations for teacher licensure, no uniform reporting system, and no (as yet) agreed-upon accountability system. In contrast, though, most state legislators have dictated the requirements for the high school college prep curriculum, or colleges and universities have, in a de facto sense, set national standards by insisting that students complete a set of courses (core academic curriculum) and perform at a particular level on a standardized test administered nationally either by ACT or Educational Testing Service before being admitted to universities.

Student enrollments in high school vocational education had their heyday in the 1960s and 1970s. In the 1980s, enrollments began a downward spiral that just recently may be reversing itself. Although there was a general overall decline in high school student enrollments during the 1980s and early 1990s, the proportionate decline in vocational education was much steeper.

Various state studies conducted in the late 1980s concluded that as much as an overall 50 percent drop in secondary vocational education enrollment was related to an increase in students' enrollment in academic courses and a declining enrollment in the overall high school population. The National Center for Research in Vocational Education (NCRVE) reported that 31 states experienced steady declines in vocational enrollments from 1983 to 1990 (Husain 1999).
During this period and into the early 1990s, the decline in vocational education enrollment from high school students was significantly greater than that which could be explained by the shrinking high school student population. Combined with the decline in the overall high school student population and the increase in overall Carnegie credits earned by students, the 1994 National Assessment of Vocational Education concluded that an overall 33 percent decline in the demand for vocational education occurred between 1982 and 1994. The good news is that at least 97 percent of all 1992 high school students did enroll in at least one credit course identified as vocational education (Boesel et al. 1994). The bad news is there was a significant decline in enrollment classified as vocational educational concentration and specialization (Levesque et al. 2000).

The following is a summary, extracted from various government data sets, of high school students' participation in vocational education with a focus on enrollment patterns and trends from 1982-1994:

**Credits.** From 1982-1994, the average number of vocational credits earned by a high school graduate fell from 4.7 to 4.0. In 1982, the proportionate share of vocational credits to total credits was 22 percent; this fell to 16 percent by 1994. During the same period, the total amount of coursework completed by public high school graduates increased, on average, from 21.6 credits in 1982 to 24.2 credits in 1994, an increase of 12 percent (Levesque et al. 2000, pp. 49-50).

**Vocational Concentrators.** The percentage of graduates taking three or more courses in a single occupational program area decreased from nearly 34 percent in 1982 to 25.5 percent in 1994. The latter figure includes 4.5 percent of the 1994 graduates who also completed a college preparatory curriculum as well as the 20.9 who completed only the vocational concentration (ibid., pp. 51-53, 65). Of 100 high school graduates in 1982 and 1994, the following is the percentage who completed 3 or more credits in each of the vocational programs:

<table>
<thead>
<tr>
<th>Program Area</th>
<th>1982</th>
<th>1994</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Business</td>
<td>11.6</td>
<td>7.7</td>
</tr>
<tr>
<td>Marketing</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Health Care</td>
<td>0.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Trade and Industrial</td>
<td>14.8</td>
<td>8.5</td>
</tr>
<tr>
<td>Technology and Communications</td>
<td>0.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Occupational Home Economics</td>
<td>1.7</td>
<td>2.0</td>
</tr>
</tbody>
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2 A Carnegie unit or credit is a standard of measurement used for high school education that represents the completion of a course that meets 1 period per day for 1 year.
3 To be classified as a concentrator, a student must complete three or more courses in a single occupational program area, such as agriculture, business, or health.
4 To be classified as a vocational specialist, a student must complete four or more courses in a single occupational program area with at least two of those courses beyond introductory level.
For those classified as vocational education concentrators, enrollments were
distributed among the various programs as follows (Levesque and
Hoachlander 2000):

<table>
<thead>
<tr>
<th>Program Area</th>
<th>1982</th>
<th>1994</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>8.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Marketing</td>
<td>5.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Health</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Technology and Communications</td>
<td>1.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Food Service and Hospitality</td>
<td>.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Child Care and Education</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Business</td>
<td>34.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Trade and Industry</td>
<td>44.0</td>
<td>34.0</td>
</tr>
<tr>
<td>Personal Services</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Other/NA</td>
<td>.3</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Segmented data show that, with the exception of special populations, males,
females, African-Americans, Hispanics, American Indian/Alaskan Natives,
and whites from rural, suburban, and urban areas all decreased their rates of
vocational concentration in public high schools during this period (Levesque
et al. 2000, p. 61).

Vocational Specialists. The percentage of graduates taking four or more
courses in a single occupational program area, with at least two of those
courses beyond the introductory level, declined from 13 percent in 1982 to 7
percent in 1994 (Levesque et al. 2000, p. 51).

General Vocational-Specialized. The percentage of public high school
graduates taking at least one vocational education course (general or special-
ized) decreased slightly from 98.2 percent in 1982 to 97.2 percent in 1994.
The percentage of graduates taking at least one specialized labor market
preparation course increased slightly from 88.7 percent in 1982 to 90.8
percent in 1994; however, the average amount of coursework in specialized
courses taken by high school graduates decreased from 3.0 credits to 2.8
credits over the same period (ibid., pp. 50-51).

Special Populations. Generally, students who took four or more Carnegie
credits (vocational specialists) from any one program area, including family
and consumer sciences, were from special populations: single parents, Native
Americans, disabled, limited English proficient, lowest 25% on socioeco-
nomic status, below a C grade point average, in need of 2 or more remedial
credits, and in the bottom 25 percent on standardized tests (Boesel et al.
1994, p. 18). Similarly, enrollment trend analysis shows increasing percent-
ages of concentrators (three or more credits) among students with disabilities
and lower grade point averages (Levesque et al. 2000, p. 56).
**College Prep-Vocational.** The percentage of public high school graduates completing both a vocational concentration and a college preparatory curriculum increased 7.5 times from 0.6 in 1982 to 4.5 in 1994. The percentage who completed only a college preparatory curriculum increased from 8.1 percent in 1982 to 32.2 percent in 1994. The percentage of graduates completing neither a vocational concentration nor a college preparatory curriculum decreased from 58.2 percent in 1982 to 42.4 percent in 1994 (ibid., p. 65).

A mong vocational concentrators, the percentage who also completed a college preparatory curriculum increased ninefold, from 2 percent in 1982 to 18 percent in 1994. These dual graduates tended to concentrate most heavily in three vocational programs: health care, business, and technology and communications. Among college preparatory high school graduates, the percentage who also completed a vocational concentration increased from 7 percent in 1982 to 12 percent in 1994 (Hudson and Hurst 1999).

Preliminary data today indicate that, after up to 2 decades of decline, secondary career and technical education is enjoying a resurgence in both image and enrollment, backed by program improvements, business-education partnerships, students’ interest in learning about computers and technology, and a growing sense that students need some job skills in order to earn funds to continue their education (and thus dual enrollment in the college preparatory curriculum and a career and technical education program). A CTE’s *Techniques* magazine collected 1998 secondary enrollment numbers from 39 states, 70 percent of which reported an increase in enrollment since 1990 (Husain 1999). Preliminary federal data from many state enrollment reports, comparing numbers from 1994-1997, showed that vocational enrollments had increased in all vocational areas except family and consumer sciences (nonoccupational) and technical subjects. These preliminary reports (unverified data) also indicated that student-teacher ratios had increased considerably during that period in all areas except technical.

Further, public elementary school enrollments have been vastly increasing. This surge is expected to result in an 11 percent increase in public high school enrollment between 1998 and 2008 and, probably, a parallel increase in enrollments in career and technical programs. Increases in these enrollment statistics also suggest that some career and technical fields might be facing teacher shortages in the near future.

It must be recognized, too, that enrollment numbers are a funny and fuzzy component from which to assess the status or condition of vocational education or career and technical education. As pointed out earlier, there is no national system of vocational education in this country. Therefore, collecting macro or national data and extrapolating trends from it are inexact and unreliable processes. In citing the work of Norton Grubb, a principal researcher with NCRVE, Husain (1999) noted: “Some states count students into a program only if they take three or more technical classes while others count them each time they take a technical class” (p. 17). States “determine enrollment differently” and some “only count a [voc ed] student enrolled in career and technical schools” (p. 15, italics added). This lack of uniform data and inability to establish significant cause-and-
effect relationships among student numbers, program and curriculum intensity, and possible impact hinders vocational educators in their accounting to Congress and in their assessment of program effectiveness.

**The Crossroads**

Controversy has always swirled around vocational education. Lauded by the unsophisticated, panned by the professionals, and shunned by the upwardly mobile, vocational education has been the Lawrence Welk of public education—tolerated and occasionally patronized by the Establishment, but never really accepted. (Gray 1991, p. 438)

Vocational education, especially in high schools, is at a crossroads. Down one path seem to be successful programs that are technologically up to date, integrate rigorous academics with knowledge and skills needed for careers, have a good career pathway planned with and for students and their parents, prepare students concomitantly for employment and higher education, and are well respected in the community. Many such programs are shining examples of excellence and some have been showcased in many ways.\(^5\)

Down another path are schools and programs that have failed to update and increasingly rely on larger percentages of their total enrollment from disadvantaged populations but may not be well staffed or equipped to serve special populations well; their students are succeeding in vocational programs without fully understanding the insufficiency of the curriculum to prepare them either for good employment or further education (Oakes, Selvin, Karoly, and Guiton 1992). Sadly, many high school vocational programs are actually isolated from the workplaces for which they are allegedly preparing students (Grubb, Kalman, Castellano, Brown, and Bradby 1991). These are the programs that unfortunately, often loom large in the perception of much of the general public.

In some respects, these are tough times for secondary vocational education relative to direction. At least four schools of thought, seemingly in separate camps, on the direction of high school career and technical education are present in the literature and were discussed by persons interviewed for this paper:

1. “Education through occupations” where career and technical education is recognized as an educational/instructional modality for teaching traditional academic content. It is the pedagogy historically identified with vocational education that is recognized as effective for many students. This view, closely aligned with those who advocate the integration of academic and vocational education, seems to be the preferred direction emanating from the scholarly community.

\(^5\) See, for example, the monthly issues of *Techniques* magazine, published by the Association for Career and Technical Education, which regularly features excellent programs and practices throughout the country. Also, the U.S. Department of Education's Office of Vocational and Adult Education has identified 28 new American high schools, all of which include examples of excellent career and technical education programs and career preparation for students.
2. Job skills for about one-third of high school graduates who are not college bound upon graduation. Focus is on instruction around broad career clusters along with specialized skills; that is, students will acquire knowledge of all aspects of an industry but will exit high school with some fairly specific job skills. This appears to be the preference in direction from practitioners in the traditional vocational education subject areas.

3. Concentrated preparation in specialized job skills targeted primarily to the 8-12 percent of educationally disadvantaged students who, in all likelihood, will not attend college and who need extensive job training to enter the labor market upon high school graduation. Vocational education is also identified as a good arena for alternative students who do not do well in traditional schools to prevent their dropping out before completing high school. This view of vocational education seems most embraced by many educators of academic subjects, middle- and upper-class parents, and some local policymakers.

4. Tech prep—an articulated agreement between high schools and postsecondary institutions (could include 2 years of high school + 2 years of community college + 2 years of baccalaureate) to provide programs in nonduplicative, sequenced study that integrate academic with career and technical education, use work-based and worksite learning, and lead to degrees, certificates, and career placement. This direction seems most favored by Congress and by business persons.

For some, the separate vs. integrated issue looms large as one group prefers and another group abhors the separation of vocational education from academics.

Indeed, there are mixed signals being sent to vocational and other educators about high school vocational education. On one hand are some local boards of education, school administrators, counselors, and fellow teachers who view vocational education as an alternative for students who do not do well in the classical or academic curricula. They prefer to keep it that way. And thus we see vocational educators in many schools (as well documented in the 1994 National Assessment of Vocational Education) teaching (relatively low) entry-level job skills to students who are educationally disadvantaged in one or more ways.

Conversely, other groups—especially business and industry—expect much more from career and technical education, including graduates with solid literacy, numeracy, communication, technology, and general employability skills. From a business and industry perspective, a high school diploma has historically been and should continue to be benchmarked with reasonable academic proficiency and appropriate preparation for workplaces. Business persons and other community representatives are calling for input into standards development and assessment for high school programs and graduates, which should include standards targeted toward both academics and workplaces. This also seems to be the implied direction from the 1998 Perkins III federal legislation.
Most groups that have thus far championed reform in high school education—with the exception of the Southern Regional Education Board’s network of High Schools That Work—have not given high priority to career and technical education. Interviews with groups focusing on high school education said in their own way, “It’s really not been placed on our radar.” Much of the education reform literature gives it short shrift and speaks only in general terms of preparing students for workplaces. It is clear, however, that the reform advocates see such preparation as delivered primarily through core academic subjects.

It was difficult to find up-to-date information about students, programs, or teachers involved with today’s high school vocational education programs in the mainstream research and scholarly literature and databases. The academic community has largely ignored vocational education. As one noted researcher commented about education-related data collected through empirical studies and experimental research, “No one pays this field [vocational education] much attention.”

Further, there is a strong and vocal group that has panned vocational education, especially because of its relatively close alliance with the federal School to Work (STW) Opportunities Act of 1994. According to some analysts, STW was originally designed primarily to raise the achievement (academic and vocational) of those high school students who were headed directly to workplaces upon graduation. But, some say, a bait-and-switch took place, and STW—in some places and by some advocates—became a program of vocational education designed for all students. Critics said that “dumbing down the curriculum and forcing everyone to participate” is not the solution to this country’s education nor its economic woes (Innerst 1999, p. 115).

This “dumbing down the curriculum” and the “dumping ground” image of high school vocational education are almost omnipresent. Even vocational educators themselves often talk about the negative perceptions of vocational education, especially among their colleagues in public education, parents, and students themselves. Surveys of vocational educators continue to rank the “image problem” as high on the list of serious issues continuing to plague the field. In a review of articles in Techniques over a 10-year period, the many image messages surfaced. Examples: (1) programs are not seen as meeting the needs of students, employers, and the community; (2) during the 1980s and early 1990s, vocational education competed against other programs (and perhaps unfairly) for a shrinking student population; (3) vocational education is generally viewed as a dead end and only for high school students who never plan to go to college; (4) programs are often targeted to educationally disadvantaged students and designed to help keep them in school and get them a diploma; (5) an elitist view says any form or context of education for work is not appropriate for students aspiring to a 4-year college or university; (6) confusion exists about initiatives begun with funding from the School to Work Opportunities Act and their relationship to vocational education; (7) many parents have the general perception that vocational education programs should be offered in local high schools or vocational centers, but targeted for someone else’s children; and (8) vocational education will inhibit rather than enhance youth’s career and educational choices (Catri 1998; Ries 1997; personal interviews).
Image problems are not easily erased. Some facts and observations from researchers indicate that even solid programs close because of poor student participation, despite school board and employer support for the program. Local businesses want to participate and employ students, but the high schoolers just aren’t signing up. Lack of support from other teachers and counselors for such enrollment may be another obstacle (based on preliminary data from Jobs for the Future and the Institute on Education and the Economy at Columbia University Teachers’ College). “Some teachers still believe that students are missing the ‘real work’ of the classroom when they leave the school to go to a workplace” (Vocational Training News, April 1, 1999, p. 3). Thus, changing the image will be a challenge for career and technical educators.

It certainly is not all negative. In some respects, these are good times for a new career and technical education. As discussed more thoroughly in the next section, the general public supports education targeted toward careers and employment as an essential purpose of public schools. Businesses and industries seems more willing than at any other time since the early 20th century to partner with public education to find solutions to what they perceive as the dismal preparation students are receiving for workplaces. Several years of research and development on the integration of academic and vocational education are finding positive results for more students. In 1998, Congress passed Perkins III, which encourages and supports a wide variety of initiatives and activities within the 50 states to improve programs to increase students’ career and academic preparation. It was certainly Congress’ intention to ensure that education programs respond to the economic and employment realities faced in the economy and by students.

Further, there is substantial optimism on the horizon that career and technical education may enjoy attention and rebirth from mainstream educators. For example, 48 of the nation’s 51 chief state school officers recently responded to a survey asking them to identify the most critical issues facing public education in the years 2000 and 2020. The number 1 issue, chosen by 81% of the chiefs, was student preparation for the workplace (Morgan, Matranga, Peltier, and Hill 1998).

The original Perkins legislation and late 1980s and early 1990s education reform reports told us that students, educationally disadvantaged students in particular, were not going to improve their lot much without a solid education and that program improvements in vocational education were going to have to include healthy doses of academics, more and longer participation in programs, more involvement from business and industry, better teaching, better support services, and greater attention to soft or employability skills (Lynch, Smith, and Rojewski 1994). This message continues today.

Can the new career and technical education make the necessary adjustments so as to be responsive to career preparation and contribute to students’ academic achievement and thus enhance success in postsecondary education and workplaces? It is increasingly clear that it cannot do both nor will its image improve, unless the substance (i.e., rigorous and authentic curriculum, instruction, and assessment) of most programs changes and unless career and technical education becomes more mainstream to the mission, planning, and operation of American high schools. This will involve significant changes in many pro-
grams. As summarized with clichés from interviewees for this project, it can’t be “mere tinkering” or “minor adjustments on the margins of change,” or “pouring new wine in an old bottle.”

Related questions: Will career and technical educators accept any “national” system of assessments, measures, and rubrics to benchmark their programs and/or their students’ achievements in employability and other workplace skills? Will general educators and the public accept (these) alternative assessments as among legitimate accountability measures for evaluating improved student performance and/or overall achievement?

Further, if and when changes are made, career and technical educators will need to step up advocacy for the programs with mainstream educators, parents, and students and those responsible for educational public policy. This advocacy will need to be well grounded in knowledge and research of the economy, educational ends and purposes, student learning and motivation, school reform issues, effective practices, and important components in a high school education that seem to make a difference in advancing student career and academic achievement. The remainder of this paper is intended to help provide this grounding.

Two fundamental premises (perhaps biases of the author) undergird the remainder of the paper:

1. High school career and technical education needs to be integral to mainstream school reform and placed on the radar of all who are working to improve the education of high school students.

2. Career and technical education can and must contribute to increased student achievement; but to do so, improvements need to be made in many existing programs to make them more effective and acceptable to the general public, new programs may need to be designed, and some old programs need to be put to rest.