

Chapter 3

The Multitiered CTE/VET System in the United States—From High School to Two-Year Colleges

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This chapter provides an introduction to the vocational/career and technical education system in the United States. The present system is broad and complex, spanning many grade levels, subject areas, and educational institutions. Over the past several years, the system also has evolved from being initially focused on entry-level job preparation to now include adult retraining programs, college preparatory coursework, postsecondary options and programs, and many other options. This complexity is confounded by the broader educational system in the United States, which leaves decisions regarding vocational/career and technical education largely to each of the states. Despite these challenges, vocational/career and technical education continues to be a key component of the overall education system in the United States.

More than 90% of all high school students in the United States take at least one vocational/career and technical education course, and one in five students takes three or more courses in a single program area (Levesque et al., 2008). This statistic is significant, given that vocational/career and technical education is an “elective” form of education, one that students need not participate in to earn a high school diploma. More than one-third of college students are involved in vocational/career and technical education programs, and significant numbers of adults engage in short-term postsecondary occupational training (Levesque et al., 2008). Formal career and technical education programs have been a part of this country’s educational landscape for almost 100 years. Historically viewed as “education for work,” the role of career and technical education has expanded in recent years, into preparation for a global economy and workplace, which is characterized by rapid technological change, a demand for strong academic and technical skills, technological proficiency, and further education and training beyond high school. One contemporary definition for vocational/career and technical education provided by Levesque et al. (2008) stated

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Career and technical education (CTE) spans secondary, postsecondary, and adult education levels. In high schools, CTE encompasses family and consumer sciences education, general labour market preparation, and occupational education, and may form part of a course of study leading to college, employment, or both. At the postsecondary level, career education is linked to preparation for employment in specific occupations or careers, although postsecondary credentials in career fields may also lead to further education. Adults may participate in formal education and training to acquire, maintain, and upgrade their workforce skills (p. iii).

It is commonly accepted that vocational/career and technical education in the United States is also defined as educational courses and programs offered at less than the baccalaureate level. As a result, vocational/career technical education programs at the secondary level can be found in one form or another in virtually all high schools in the United States. Many of the courses and programs are offered in comprehensive high schools, while several states have area vocational/career centers, which have a specific focus on vocational/career and technical education. Some high schools have designed career academies and “schools within a school” focused on specific career clusters. Vocational/career and technical education programs are also offered at the postsecondary level, through a variety of institutions, including public school adult education programs; public, two-year community or technical colleges; public, two-year branch campuses of four-year institutions; or through private, proprietary (for-profit) schools. Vocational/career and technical education programs are also found in the nation’s corrections and rehabilitation programs, offering inmates a way to learn technical employability skills, in the hopes of reducing recidivism (the tendency to relapse into crime).

3.1 Funding and Financing Vocational/Career and Technical Education

Vocational/career and technical education is an expensive undertaking. Equipment, supplies and materials to appropriately structure courses and programs can be significant expenditures. In the United States, most elementary and secondary education is funded through local property taxes and state support. At the postsecondary level, educational offerings are funded largely via individual student tuition and state subsidies. Vocational/Career and Technical Education has historically enjoyed financial support from the federal level through various legislative acts. The first, the Smith-Hughes Act of 1917, provided federal funding for vocational training in the areas of agriculture, trade and industry, and home economics. The funding provided salaries for teachers, supervisors, and directors of each area. In addition, the Smith-Hughes Act required state boards to draft plans relating to the use of funds, types of schools, equipment, courses of study, methods of instruction, teacher qualifications, supervisor qualifications and plans for training teachers (Calhoun & Finch, 1982). Various other legislative acts have built upon, and revised, various aspects of the Smith-Hughes Act. The current legislation, the Carl D. Perkins Career and Technical Education Improvement Act of 2006, provides 1.3 billion US dollars in federal

support for vocational/career and technical education programs in all 50 states. The law will extend this support through 2012.

3.2 Vocational/Career and Technical Education Within the US Educational System

Vocational/career and technical education is found at secondary and postsecondary levels. Figure 3.1 illustrates the structure of the United States educational system:

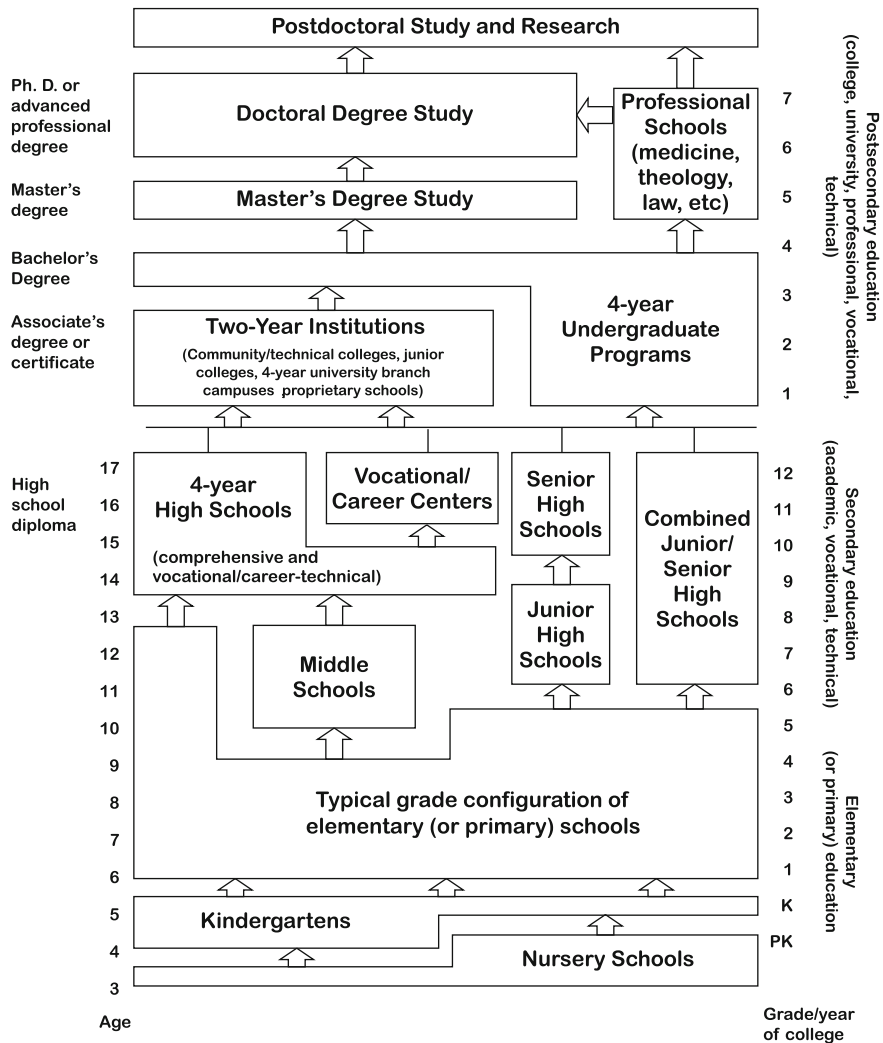


Fig. 3.1 The structure of education in the United States
 Source: Adapted from U.S. Department of Education, National Center for Education Statistics, Annual Reports Program, 2007

3.2.1 Secondary Vocational/Career and Technical Education

In the United States, the secondary education system is the responsibility of the states. As a result, there are 50 similar, yet different, models for vocational/career and technical education at the secondary level.

The majority of courses and programs are found at the high school level (grades 9–12), although some “prevocational” courses can be found in earlier grades (7–8). These offerings are introductory in nature, and are designed to allow students the opportunity for career exploration and an orientation to the world of work. There may also be courses and programs targeted toward at-risk students, providing work-based knowledge and skills in collaboration with academics, in order to keep students in school and to prepare them for entry into the workplace upon graduation.

The delivery system for high school vocational/career and technical education can vary greatly from state to state, and also by subject area. There are three major settings for the delivery of vocational/career and technical education courses and programs: comprehensive high schools, vocational/career and technical high schools, and area or regional vocational schools/career centers serving multiple high schools (Scott & Sarkees-Wircenski, 2008). These three settings fall within the high school models illustrated in Fig. 3.1.

Comprehensive high schools, by virtue of their classification, offer a wide range of courses and programs, from general education to college preparatory, as well as vocational/career and technical education. There are approximately 17,000 public and 6300 private comprehensive high schools in the United States (Levesque et al., 2008). Courses and programs in vocational/career and technical education in these schools often reflect the communities in which they are found. For example, comprehensive high schools in rural areas may feature courses and programs in agricultural education and family and consumer sciences education, while schools in urban areas may feature programs related to business education, the health occupations, and marketing education.

Vocational/career and technical education high schools and area career centers offer a wide variety of courses and programs for students. In the United States, approximately 900 high schools are classified as vocational/career and technical education high schools (Levesque et al., 2008). Area career centers are designed to serve students from a specified geographic area, from several “feeder” high schools. By serving several high schools, economies of scale can be achieved. Thus courses and programs that one high school would find cost-prohibitive to provide can be offered to a large number of students. Students in these programs typically spend one-half of the school day in their vocational/career and technical education program area, and the other half in academic classes such as math, language arts, and the natural sciences.

Vocational/career and technical education courses and programs historically have been focused on the development of skills and knowledge for entry-level employment. However, their mission in recent years has been broadened to include college preparatory offerings, “dual credit” options in which students can earn both high school and college credit simultaneously, and articulation agreements with

postsecondary institutions to provide for a seamless transition from high school to college. These articulation agreements typically address the progression of students from high school vocational/career and technical education programs to two-year colleges. Students may earn college credit while still in high school, thus resulting in a “time-shortened” associate’s degree, while other approaches have not shortened the time required for an associate degree, but have allowed enrolment in advanced courses not otherwise permitted. While nationwide data regarding the number of articulation agreements between secondary and postsecondary institutions is unavailable, these programs are increasing in number. This is primarily due to the changing needs of the workplace, which require high levels of technical competence due to the rapid rate of technological change, and the needs of the global marketplace. These needs are best met through additional study past the secondary education level.

3.2.2 Postsecondary Vocational/Career and Technical Education

In terms of grade levels, in the United States, vocational/career and technical education is often defined as “pre-baccalaureate” and as such, includes courses and programs that can be offered at the associate degree level in community/technical colleges, vocational/technical institutes, and junior colleges. These two-year institutions also offer a broad range of nondegree offerings, such as continuing education programs, occupational certificate programs, and custom-designed courses. These institutions can be public, private, or proprietary (for profit).

Similar to secondary education institutions, vocational/career and technical education courses and programs at postsecondary education institutions also tend to reflect the communities in which they are located. For example, in urban areas, offerings in the health occupations are common, as are information technology, business management, and automotive technologies. Two-year colleges are also continually looking for opportunities to broaden their mission by establishing partnerships with four-year universities through articulation/transfer agreements, providing job retraining opportunities for displaced workers, and by utilizing technology to a significant extent to offer courses and programs via distance education.

Associate degree options tend to reflect the many missions of these institutions. For students interested in entering the workplace after degree completion, Associate of Science and Associate of Applied Science degrees focus primarily on technical coursework, and have minimal academic requirements. Associate of Arts degrees that may lead to articulation and transfer to a four-year institution have less technical coursework, and more in academic areas, and are designed to meet the general education requirements of those colleges and universities.

Articulation agreements from two-year colleges to universities do exist, but not in the same large numbers found between secondary and postsecondary institutions (Cohen & Brawer, 2008). Most of these agreements are found in the areas of information technology and health occupations, which articulate well with baccalaureate programs.

Apprenticeships, which are a combination of on-the-job training and related classroom instruction in which workers learn the practical and theoretical aspects of a highly skilled occupation, are another postsecondary option for vocational/career and technical training. Apprenticeship programs are jointly sponsored by employer and labor groups, individual employers, and/or employer associations. According to the latest statistics, more than 25,000 active apprenticeship programs across the country currently serve more than 400,000 apprentices in a variety of training programs, such as carpentry, plumbing, and electrical trades (United States Department of Labor, 2009)

For purposes of job retraining and skill upgrades, short-term training can also be found in adult programs of vocational/career and technical education, many times in the same buildings as secondary programs, offered in the evening hours. These programs can be sponsored by employers, states, or the federal government, in response to changing needs of the workplace. This arrangement provides for optimal use of the facilities and equipment, as well as providing education and training for an additional student demographic.

Vocational/career and technical education courses and programs can also be found in prisons and correctional facilities, as a way to reduce recidivism. Vocational training, and other special programs designed to train participants for a job, can be found in more than 50% of state prisons and 90% of federal prisons in the United States (Wolf Harlow, 2003). Dependent on the facilities and the availability of qualified instructors, vocational training commonly occurs in subjects, such as, automobile body repair, electronic servicing, graphic arts/printing, horticulture, masonry, refrigeration servicing, and welding (Lewis, Mears, Dubin, & Travis, 2002).

3.3 Program Areas Within Vocational/Career and Technical Education

Traditionally, with some minor changes over the years, there have been six broad areas of study within vocational/career and technical education: Agricultural Education, Business Education, Family and Consumer Sciences Education, Health Occupations Education, Marketing Education and Trade and Industrial Education. A seventh area, Technology Education, has philosophical and curricular goals that are not necessarily aligned with vocational/career and technical education, but has some areas of curricular commonality for the purposes of this text, and so is included in this discussion.

3.3.1 Agricultural Education

Agricultural education prepares students for careers in agriculture and natural resources. Agricultural education was one of the original areas (along with home

economics education and trade and industrial education) to be funded under the Smith-Hughes Act of 1917, the first federal legislation written in support of vocational/career and technical education. According to the National Council for Agricultural Education (2009), over 800,000 students participate in formal agricultural education instructional programs offered in grades seven through adult throughout the 50 states and three US territories. A sampling of areas of study within agricultural education includes agricultural production, agricultural mechanics, horticulture, and landscape management. Technology impacts agriculture and programs exist in such areas as biotechnology and environmental sciences. Connections to academic areas are inherent in agricultural education, especially the natural sciences (biology, chemistry, and physics).

3.3.2 Business Education

Historically regarded as having a secretarial/office orientation, business education has perhaps been the area within vocational/career and technical education most affected by technology. In addition to programs such as administrative office technology, programs within business education now include accounting, business administration and management, and paralegal studies. Information Technology programs are also usually found within business education, and due to technological advances, many programs in this area have been developed to meet the needs of the workplace. Courses and programs in this area include interactive media, computer programming, and computer networking technology. Business and computer technology courses are the most common vocational/career and technical education offered by public high schools (Levesque et al., 2008).

Many business programs at the secondary level provide students the opportunity to continue their education at the postsecondary level, and many of the occupations within business education now require a two-year college degree for entry into the job market. Articulation agreements between high schools and two-year colleges in the area of business education are common.

3.3.3 Family and Consumer Sciences Education (Formerly Home Economics Education)

One of the original program areas funded under the Smith-Hughes Act, family and consumer sciences education has also undergone significant transformation through the years. Beginning in the early 1900s, courses originally named domestic science and household arts have evolved to reflect the changing societal needs of individuals, families, and communities. Family and consumer sciences education now has a much broader mission, as defined by their national standards. These standards were developed by the National Association of State Administrators for Family and Consumer Sciences (NASAFACS) in partnership with VTECS, a

consortium of states whose members pool resources to develop competency-based vocational/career and technical education products that are validated by business, industry, and labor. These 16 standards are focused on providing guidelines for developing programs that give students the opportunity to acquire knowledge, skills, attitudes, and behaviors for family life, work, and careers in 16 areas of study:

- Career, Community, and Family Connections
- Consumer and Family Resources
- Consumer Services
- Early Childhood, Education, and Services
- Facilities Management and Maintenance
- Family
- Family and Community Services
- Food Production and Services
- Food Science, Dietetics, and Nutrition
- Hospitality, Tourism, and Recreation
- Housing, Interiors, and Furnishings
- Human Development
- Interpersonal Relationships
- Nutrition and Wellness
- Parenting
- Textiles and Apparel

As a result of this broad mission, family and consumer sciences education contains programs that have a “family studies” orientation, and may include courses and programs in such subjects as personal development, resource management, life planning, and nutrition and wellness. These programs may also be found at the middle and junior high school level. Other family and consumer sciences education programs have more of a traditional vocational/career and technical education focus and may include courses and programs in early childhood education and care, fashion, clothing and interior design, culinary arts, and hospitality management. Many of these secondary programs have articulation agreements with postsecondary programs.

3.3.4 Health Occupations Education

The growth in the health-care sector in the United States has resulted in a corresponding growth in the number and type of health occupation-related courses and programs available to vocational/career and technical education students. Many of the health-care jobs in most demand in the workplace require less than a four-year degree. The health-care sector is now one of the largest industries in the country, and health care is the most common major field of study among students in associate degree programs (Levesque et al., 2008). Specific programs offered in health

occupations education include such areas as dental assisting, emergency medical technician, nurse assisting, and medical lab technician, and can be completed at either the high school or two-year college level. As with business education, many of these programs begin at the high school level, with the expectation students will continue on to a two-year college and complete an associate degree. Academic connections in health occupations education are prevalent, particularly in the natural sciences, and students enrolled in programs typically also enroll in classes in anatomy and physiology, biology, and chemistry.

3.3.5 Marketing Education

From early beginnings that focused on providing cooperative training in retail store work (Gordon, 2008), the curriculum of marketing education now focuses on how businesses plan, produce, price, distribute, and sell the many products and services demanded by consumers around the world (Marketing Education Association, 2009). Over 7000 high schools in the United States offer marketing education courses and programs (Scott & Sarkees-Wircenski, 2008). While some marketing education programs can be found at the middle and junior high school levels, the majority of the programs begin at the high school level and carry on to postsecondary education. Cooperative education, which allows students the opportunity to participate in job shadowing, field trips, and internships, have been a hallmark of marketing education since its inception. Some areas of study within marketing education include retail marketing and management, travel and tourism, entrepreneurship, and E-commerce.

3.3.6 Trade and Industrial Education

The other original program area designated for funding by the Smith-Hughes Act, trade and industrial education (sometimes known as vocational industrial education, technical education, or industrial and engineering education), encompasses the broadest number of occupations found in the program areas within vocational/career and technical education. This area includes such programs as welding, carpentry, automotive technology, cosmetology, graphic arts, and drafting. Historically, these programs have been specifically targeted for job preparation, since many of the occupations within trade and industrial education did not require postsecondary training. The changing workplace, along with technological innovation, has altered the mission of trade and industrial education from an initial emphasis on entry-level employment to one also focused on postsecondary preparation. In addition to specific occupational preparation, these programs often utilize a cluster approach (Section 3.4.1). From a classroom/lab perspective, trade and industrial education programs require perhaps the greatest attention to detail. The labs are more costly, and have equipment, tools, and materials that are, in general, more hazardous than the other areas of vocational/career and technical education.

3.3.7 Technology Education

Technology education is the study of technology. The curriculum focuses on problem-based learning utilizing math, science, and technology principles. These technological studies involve

- Designing, developing, and utilizing technological systems
- Open-ended, problem-based design activities
- Cognitive, manipulative, and affective learning strategies
- Applying technological knowledge and processes to real-world experiences using up-to-date resources
- Working individually as well as in a team to solve problems (International Technology Education Association, 2003).

Technology education courses and programs are generally found in comprehensive high schools. In addition, many technology education courses are offered at the middle or junior high school level, sometimes as part of a “unified arts” curriculum or as a specialized set of courses that may include family/consumer sciences education, art and/or music, offered for a grading period. Students rotate through these areas during the school year, so each student has an introductory experience in each area.

3.4 Curricular Approaches Within Vocational/Career and Technical Education

Historically vocational/career and technical education prepared students for direct entry into the workplace. As the global workplace has changed, so too have the curricular approaches used within the discipline. There still are many “traditional” types of vocational/career and technical education programs that prepare students to seek immediate employment at the close of their high school studies. However, in addition, many new curricular models have emerged that focus on several outcomes not previously associated with vocational/career and technical education, such as the integration of vocational/career and technical education and academic disciplines, articulation with postsecondary institutions, and entry into broader career fields. Several of these innovative models have been developed in response to the implementation requirements of the Carl D. Perkins Act from the federal government, which has been authorized four times since 1984. The Perkins Act is the present-day version of the original Smith-Hughes Act of 1917.

3.4.1 Career Clusters and Career Academies

As previously noted, vocational/career and technical education, particularly at the secondary level, has transitioned away from specific occupational training for

the workplace, concentrating instead on a broader-based curricular approach that includes entry through professional-level occupations within a broad industry cluster. This curricular approach provides instruction within a family of occupations rather than focusing on one in particular. For example, students in a construction cluster may receive instruction in carpentry, masonry, print reading, plumbing, and the electrical trades.

The U.S. Department of Education has identified 16 career clusters:

- Agriculture, Food, and Natural Resources
- Architecture and Construction
- Arts, Audiovisual Technology and Communications
- Business, Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety and Security
- Manufacturing
- Marketing, Sales, and Service
- Science, Technology, Engineering, and Mathematics
- Transportation, Distribution, and Logistics

These career clusters can be utilized as a way to structure career academies in high schools, as specific career clusters can be chosen to meet the needs of students in a given school. This approach also includes the academic skills needed for further education and careers, and usually has articulated programing with postsecondary institutions. Career academies were developed in the 1970s as a way to restructure large US high schools into smaller learning communities, usually organized around one of the above listed career clusters. At present, there are more than 2500 high schools structured according to the career academy model (MRDC, 2009).

3.4.2 Tech Prep

Tech Prep dates back to the early 1980s, as highlighted in the book, *The Neglected Majority* by Dale Parnell. Tech Prep has grown into a major national strategy for improving students' academic knowledge and technical skills. As defined in the Carl D. Perkins Vocational and Technical Education Act, Tech Prep is a sequenced program of study that combines at least two years of secondary and two years of postsecondary education. It is designed to help students gain academic knowledge and technical skills, and often earn college credit for their secondary coursework.

Programs are intended to lead to an associate degree or a certificate in a specific career field, and ultimately, to high-wage, high-skill employment or advanced postsecondary training.

To date, roughly 47% of the nation's high schools (or 7400 high schools) offer one or more Tech Prep programs. Nearly every community and technical college in the nation participates in a Tech Prep consortium, as do many four-year colleges and universities, private businesses, and employer and union organizations (U.S. Department of Education, 2008). Research on the effectiveness of Tech Prep has been mixed. While participation rates in Tech Prep in certain states are significantly high (Draeger, 2006; Miller & Gray, 2002; Stone & Aliaga, 2005), completion rates have not always met expectations (Miller & Gray, 2002) and the evaluation systems designed for Tech Prep programs can vary from state to state (Ruhland, 2003).

3.4.3 High Schools That Work

High Schools That Work (HSTW) is an effort-based school improvement initiative founded on the conviction that most students can master rigorous academic and vocational/career and technical studies if school leaders and teachers create an environment that motivates students to make the effort to succeed (Southern Regional Education Board, 2007). The curriculum is focused on a rigorous academic core with either a vocational/career and technical or academic concentration that provides relevant application of learned content. HSTW has a set of “key practices” that impact student achievement:

- High expectations for students
- Program of study—each student is required to complete an upgraded academic core and a technical concentration
- Academic studies that are focused, rigorous, and relevant
- High-demand fields that emphasize the higher-level mathematics, science, literacy, and problem-solving skills needed in the workplace and in further education
- Work-based learning opportunities
- Teachers working together—Provide teams of teachers from several disciplines the time and support to work together
- Students actively engaged—Engage students in academic and vocational/career/technical classrooms in rigorous and challenging proficient-level assignments using research-based instructional strategies and technology
- Guidance—Involve students and their parents in a guidance and advisement system that develops positive relationships and ensures completion of an accelerated program of study with an academic or vocational/career/technical concentration
- Extra help—Provide a structured system of extra help to assist students in completing accelerated programs of study with high-level academic and technical content

- Culture of continuous improvement—Use student assessment and program evaluation data to continuously improve school culture, organization, management, curriculum, and instruction to advance student learning (Southern Regional Education Board, 2007).

As of 2008, there were more than 1200 HSTW sites in 32 states using the framework of HSTW goals and key practices to raise student achievement (Young & Cline, 2008). Limited research has been conducted on the HSTW initiative. Recent studies have shown student participation in HSTW programs of study may lead to increased postsecondary enrolment (Bottoms & Uhn, 2008), improved reading skills (Bottoms, Han, & Murray, 2008), and improved academic performance in urban high school students (Bottoms, Han, & Presson, 2006).

3.4.4 Project Lead the Way

The United States is currently seeking to encourage more students to enter careers in the sciences, engineering, and engineering technology, in response to the need in the United States for more engineers and scientists. A recent curricular initiative, Project Lead the Way (PLTW), was developed in the mid-1990s by a high school teacher, Richard Blais, who was then chairman of the Technology Department at Shenendehowa Central School in upstate New York, working with the New York Department of Education and Hudson Valley Community College. PLTW is a high school preengineering program designed to prepare students for postsecondary engineering studies. The approach seeks to utilize project- and problem-based learning, taken in conjunction with college-preparatory level academics. Initial research on PLTW has shown it to be effective in developing preengineering competencies in high school students (Rogers, 2006). Participation in PLTW has also shown to produce students who achieve significantly higher scores in mathematics and science on standardized assessments than students in comparable vocational career-technical programs (Bottoms & Uhn, 2007). Today PLTW programs can be found in over 2200 schools in all 50 states, with more than 250,000 students who have taken at least one PLTW class (Project Lead the Way, 2008).

3.5 Leadership Components of Vocational/Career and Technical Education

3.5.1 Vocational/Career and Technical Student Organizations

Vocational/Career and technical student organizations (CTSOs) have been a part of vocational/career and technical education for several decades. The mission of these organizations is to provide opportunities to enhance students' leadership and technical skill development. Career and technical student organizations have developed

numerous activities, such as skills contests, community service activities, and leadership development initiatives, to benefit their members. These activities are usually developed to improve the members' leadership, personal characteristics, or employability skills (Zirkle & Connors, 2003). The activities of these student organizations are also designed to be cocurricular and supplement the instruction that is occurring in the classroom and laboratory. Business and industry partners are involved with the activities of career and technical student organizations, including serving as contest judges, providing resource materials, and providing advice related to the operation of the organization. This involvement is beneficial to the overall perceptions of CTE programs. In addition, the leadership and community service aspects of CTSOs assist with improving the image of CTE programs, as many career and technical student organizations are highly involved with community improvement efforts.

Any student enrolled in a vocational/career and technical education program is eligible for membership in the corresponding career and technical student organization. Most of the career and technical student organizations can be found at both the secondary and postsecondary level, although two career and technical student organizations in agriculture are designed specifically for postsecondary students. Generally, vocational/career and technical student organizations form chapters at the local level with advisors and sponsors, with support from state departments of education in the form of state advisors, with administrative and financial assistance (Gordon, 2008). Each student organization has a national office that provides policy and curriculum development assistance to the state and local units. State departments of education support career and technical student organizations through administrative and financial assistance with contests, meetings, and conferences. Many state departments of education designate state advisors for each career and technical student organization and these individuals interact with the local chapters on various activities (Zirkle & Connors, 2003). There are 10 career and technical student organizations that are recognized by the U.S. Department of Education. See Table 3.1.

3.5.2 Advisory Committees

In vocational/career and technical education, advisory committees are groups of employers and community representatives who advise educators on the design, development, operation, evaluation, and revision of CTE programs (Smith, Payne, & Thornton, 2001). Advisory committees are perhaps unique to CTE programs, and do not exist on a formal basis within any of the traditional academic disciplines or other content areas typically found in K-12 schools in the United States.

Depending on their function, advisory committees may conduct activities in the following areas: curriculum and instruction, program review, recruitment and job placement, student organizations, staff development, community/public relations, resources, and legislation (Kerka, 2002). An advisory committee may oversee an

Table 3.1 Vocational/career and technical student organizations

Organization	Current name	Year established	Vocational/career and technical education area
BPA	Business Professionals of America	1966	Business education
DECA	Distributive Education Clubs of America	1947	Marketing education
FBLA	Future Business Leaders of America	1940	Business education
FCCLA	Family, Career, and Community Leaders of America	1945	Family and consumer sciences
FFA	National FFA Organization	1928	Agricultural education
HOSA	Health Education Students of America	1976	Health education
NYFEA	National Young Farmer Educational Association	1982	Adults in agricultural education
PAS	National Postsecondary Agricultural Student Organization	1980	Postsecondary agricultural education
Skills USA-VICA	Skills USA-VICA	1965	Trade and industrial education
TSA	Technology Student Association	1965	Technology education

entire program or school, provide input to a specific department or technical area (craft committee), or advise an entire school district or state system (Backes, 2000). Typically, advisory committees have 5–15 members, and meet at least twice during each academic year to discuss relevant issues. Members are usually solicited by the school to serve as committee members, or are recommended by community leaders. The input and opinions provided by advisory committee members, due to their standing in the business community, is generally highly sought and respected by educational institutions.

Advisory committees can be an excellent resource for the CTE instructors with respect to class and laboratory management. Advice can be obtained from advisory committee members on such topics as new equipment, materials, and processes in the program area. Instructors can use this information to point out curricular shortcomings, lobby for new equipment, address safety concerns, or to just publicize the program in the community.

3.6 Overall Effectiveness

The United States system of vocational/career and technical education serves many students at several different age and grade levels. The effectiveness of the system has been scrutinized for many years. As part of the 1998 Carl D. Perkins Vocational and Technical Education Act, the United States Congress mandated the National Assessment of Vocational Education (NAVE), an evaluation of the implementation and outcomes of vocational education in the United States (United States Department of Education, 2004). As a result of NAVÉ, several major reports and supplemental studies were commissioned. In its final report to Congress, NAVÉ described three major findings relative to vocational/career and technical education:

- Vocational/career and technical education has important short- and medium-run earning benefits for most students at both the secondary and postsecondary levels, and these benefits extend to those who are economically disadvantaged.
- Over the last decade of academic reforms, secondary students who participate in vocational/career and technical programs have increased their academic course enrolment and achievement, making them better prepared for both college and careers than were their peers in the past. In fact, students who take both a strong academic curriculum and a vocational/career and technical program of study—still only 13% of high school graduates—may have better outcomes than those who pursue only one of the two programmes.
- While positive change is certainly happening at the high school level, secondary vocational/career and technical education itself is not likely to be a widely effective strategy for improving academic achievement or college attendance without substantial modifications to policy, curriculum, and teacher training. The current legislative approach of encouraging “integration” as a way to move secondary vocational/career and technical education toward supporting academics has been slow to produce significant reforms (p. xviii).

The NAVE report also addressed issues related to improving vocational/career and technical education teacher quality, strengthening the transition for vocational/career and technical education students into postsecondary education, and examining the relationships among enrolment in vocational/career and technical education, academic achievement, and dropout prevention.

3.7 Conclusion

As this chapter has illustrated, the US system of vocational/career and technical education is broad and diverse, and has grown to serve the multiple needs of students and the workplace. This diversity creates challenges, particularly at the high school level, as participation in vocational/career and technical education is an elective choice that faces increasing pressure from emphasis on academic improvement (United States Department of Education, 2004). Despite these pressures, enrolment in vocational/career and technical education courses in programs continues to be significant, perhaps due in part to new curricular approaches that provide options for students in addition to the historical focus on preparation for entry-level employment.

At the postsecondary level, vocational/career and technical education also continues to expand, and can be found in many different types of educational settings and institutions. Courses and programs for these students span many subject areas, and tend to reflect the labor force needs of their local community.

For many students in the United States, the system of vocational/career and technical education is a flexible educational option. Courses and programs continue to offer a direct connection to the labor market for students seeking immediate employment from a secondary education, while the system seeks to develop additional pathways for postsecondary and continuing education opportunities. The entire system has more than 90 years of federal government financial support, and that will likely continue as the United States seeks to retain its standing in the global marketplace.

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Organizational and Internet Resources

Professional Organizations

- American Association of Family and Consumer Sciences (AAFCS)
<http://www.aafcs.org>
- Association for Career and Technical Education
<http://acteonline.org/>
- International Technology Education Association
<http://www.iteawww.org/>
- Marketing Education Association
<http://www.nationalmea.org/>
- National Council for Agricultural Education
<http://www.teamaged.org/aged.htm>

Vocational/Career and Technical Student Organizations

- Business Professionals of America
<http://www.bpa.org/>
- Distributive Education Clubs of America
<http://www.deca.org/>
- Family, Career and Community Leaders of America, Inc.
<http://www.fhahero.org/>
- FFA
<http://www.ffa.org/>
- Future Business Leaders of America – Phi Beta Lambda
<http://www.fbla-pbl.org/>
- Health Occupations Students of America
<http://www.hosa.org/>
- National Young Farmer Educational Association
<http://www.nyfea.org/>
- National Postsecondary Agricultural Student Organization
<http://www.nationalpas.org/>
- SkillsUSA-VICA
<http://skillsusa.org/>
- Technology Student Association
<http://www.tsaweb.org/>