

2008-2012 CALIFORNIA STATE PLAN FOR CAREER TECHNICAL EDUCATION

Executive Summary “A Vision for the Future”

INTRODUCTION

As the eighth largest economy in an increasingly complex and competitive world, California has a unique responsibility — and opportunity — to reshape and revitalize the role of career technical education (CTE) as an engine of education reform and workforce and economic development for the state.

CTE is both an educational strategy in its own right and the cornerstone of the state’s workforce development efforts. As an educational strategy, it inspires and facilitates learning and, unlike traditional vocational education, aims to prepare students for ongoing education, long-term careers, and citizenship, as well as entry into the workplace. With its focus on rigorous and relevant content, experiential learning, career awareness, supportive relationships, and demonstrated outcomes, CTE can provide a context for academic coursework and set the standard for the kind of challenging, engaging, student-centered instruction that is required for students of all ages to succeed. As the foundation for workforce development and economic vitality in the state, CTE responds to the needs of the economy — with regard to both industry focus and skills taught. To further address its dual purpose, CTE is designed to provide seamless pathways that bridge secondary and postsecondary education, enabling students to develop skills required in the workplace while pursuing their personal aspirations.

Purpose

California is required by the federal government to submit a state plan to gain eligibility for federal funding under the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV), which brings approximately \$140 million in funding to California for improvements in CTE, a small but important percentage of all CTE funding. In response, the California Department of Education (CDE) and the California Community College Chancellor’s Office (CCCCO) have collaborated to create a plan for CTE that not only meets the requirements of Perkins IV, but also presents a broad and bold vision for CTE — one that will catalyze the development of a fully integrated approach to CTE, coordinating and drawing upon multiple funding streams, and embedding CTE within the state’s overall education and workforce development systems to serve the needs of all Californians.

Organization of Plan Content

The plan is presented in five main chapters, preceded by an introduction. The Introduction describes the Perkins and state priorities and the process used in the plan’s development. Chapter One provides background information about the state’s current CTE structure and enrollment status. Chapter Two is a brief overview of the state’s demographic, economic, educational, and political contexts, a solid understanding of which is essential to the development of a CTE plan that affects and is affected by state trends. Chapter Three describes the vision, mission, guiding principles, goals, and 11 identified elements of an ideal, high-quality statewide CTE system. Embedded within the discussion of the 11 system elements are additional details about current structures, practices, and initiatives, as well as “needed actions” in each area. Chapter Four contains the Perkins state plan requirements in seven sections: planning, coordination and collaboration prior to state plan submission; program administration; provision of services for special populations; accountability and evaluation; Tech-Prep programs; financial requirements; and federal Education Department General Administrative Regulations (EDGAR) certifications and other assurances. Chapter Five provides state policy on the administration and use of the Perkins IV funds. The complete plan is posted at www.wested.org/cteplan.

Expanded Priorities

The Perkins Act centers on the improvement of secondary and postsecondary courses and programs that are intended to build the knowledge, skills, attitudes, and experiences needed to enter and succeed in higher education and work. The Act moves the CTE system in some new directions. Key priorities include the following:¹

- Developing and implementing challenging academic and technical standards and assisting students in meeting such standards
- Integrating academic and career technical instruction, and linking secondary and postsecondary education
- Promoting leadership, initial preparation, and professional development of CTE teachers, faculty, administrators, and counselors
- Supporting partnerships among secondary schools, postsecondary institutions, local workforce investment boards, business and industry, and intermediaries
- Providing individuals with lifelong learning opportunities to help ensure US competitiveness

The following additional state priorities respond to California's unique context and set this plan apart from previous submissions:

- **Weaving CTE into the fabric of education** in California — from the classroom to state policy — to prepare all students for their future endeavors
- **Ensuring that all students have access** to CTE courses, pathways and programs of interest, workplace opportunities, highly skilled instructors, and facilities and technologies that make all CTE options available regardless of location and enrollment limits
- **Advancing CTE as a means to engage students, instill a passion for learning, and improve student outcomes** by leveraging the current momentum of high school reform, with its renewed focus on “rigor, relevance, relationships, and results”
- **Realizing the concept of lifelong learning, and promoting career awareness and development throughout the continuum**, spanning from early childhood through adulthood’s many transitions
- **Building a demand-driven CTE system** by responding to real workforce development needs and state, regional, and local labor market realities and priorities, through strengthened curricula, professional development, data collection and use, and direct linkages with business and industry
- **Viewing CTE systemically** by taking a broad perspective in planning for how CTE, from kindergarten through lifelong learning, can contribute to student success and to California’s economic future, rather than focusing on discrete secondary or postsecondary programs or specific funding streams
- **Promoting continuous improvement** of CTE services and impact through better alignment of standards, curricula, assessments, professional development, and support for districts, colleges and schools, in order to meet or exceed all targets in students’ academic and technical skill achievement

Plan Development Process

The plan development process began with a year-long needs assessment conducted in 2006. From February through May 2007, a CTE Resource Group, a broad-based group of stakeholders identified by the CDE and the CCCCO, participated in structured meetings to create a shared and comprehensive vision of a statewide CTE system. Extensive input was then solicited from the public, both online and through regional public hearings. The Joint Advisory Committee for CTE (JACCTE), made up of six representatives, three each from the State Board of Education (SBE) and the California Community Colleges’ Board of Governors (BOG), reviewed and provided input to the plan throughout the development process and recommended approval of the plan at its November 2007 meeting. The plan was subsequently reviewed by the SBE and the BOG and approved at their March 2008 meetings.

¹ The Association of Career and Technical Education. Retrieved July 1, 2007, from <http://acteonline.org>

CONVERGING NEEDS AND OPPORTUNITIES

Powerful and persistent demographic, economic, and educational trends have created a convergence of needs — a “perfect storm” — for CTE. Educators, industry, parents, and policy makers are now in agreement that the time has come to revitalize CTE. Governor Schwarzenegger, personally familiar with the benefits of CTE, took steps in his first term to reverse California’s chronic under-funding of CTE, and the State Legislature has followed suit. The variety of California’s recent strategic initiatives and plans, combined with the widespread perceived need, offers new possibilities for renewing CTE to benefit all students and prepare the state’s workforce for the future.

Demographic Shifts

The workforce of the future will look very different than it does today. The state’s overall population is expected to grow over the next ten years with notable variation projected among age groups. The average age of Californians is increasing as the “baby boom” generation ages; the 55 and older age group is projected to increase by 37%, with retirements becoming a major factor in the California labor market after 2010. The 20-34 year-old cohort is also increasing more rapidly than it did in the previous decade, while the 35-54 year-old group will remain steady.² In addition, immigration is expected to play an important role in the future workforce. Most of the growth in California’s workforce over the next 25 years is projected to come from immigrants and the children of immigrants. The biggest overall shift in ethnicity is the projection that by 2015 the Hispanic population will have grown to be the single largest ethnic group in the state.³ CTE must respond to the upcoming generational and ethnic shifts by providing abundant, varied, and culturally appropriate opportunities for adults to learn and upgrade their skills over a lifetime of career transitions, as well as for young people to explore and launch their careers.

Economic Opportunities

The 21st century economy is characterized by new industries and new technologies as well as by an unprecedented globalization of the workforce. Nationally, it is projected that 19 million new jobs will be created in the next decade, and that there will be 36 million job openings due to the replacement of workers who will retire or change jobs.⁴ California is at the center of this economic transformation. The state’s economic base is concentrated in industry sectors with above-average growth potential both nationally and worldwide. California is a leader in areas such as stem cell research, alternative energy, and the Internet and has the nation’s largest entertainment and tourism sectors. However, growth in the next decade is likely to come from traditional industries (e.g., construction, manufacturing, professional services), as well as emerging industries (e.g., biotechnology, nanotechnology). Also, because a strong economy depends on both “population-serving” industries like health care and education, and industry sectors identified specifically for their growth potential such as information technology, both types of industries are important to the future of the state. Irrespective of industry, California’s economy is marked by wide regional variations and a high proportion of small businesses; firms with fewer than 100 employees represent more than 97% of the employer businesses in the state and employ nearly 40% of the state’s nonfarm private sector workforce.⁵ Both of these factors have important implications for CTE system development and curricula, calling for close coordination with regional economic development initiatives and ensuring that students develop the flexibility and entrepreneurial skills required in small businesses.

Educational Challenges

Many students in California are facing educational challenges that could impact their future success. Nearly 30% of California high school students do not graduate and many drop out of high school as early as ninth grade.⁶ Of

² Race/Ethnic Population with Age and Sex Detail, 2000–2050. (2007, July). *California Department of Finance*. Retrieved on July 16, 2007, from http://www.dof.ca.gov/html/DEMOGRAP/Data/RaceEthnic/Population-00-50/RaceData_2000-2050.asp; previous decade data from Center for Continuing Study of the California Economy. (2006). *Opportunities and Challenges for the California Economy: California Economic Growth Chapter 2*. Palo Alto, CA.

³ Ibid.

⁴ California Workforce Investment Board. (2007). *California’s Strategic Two-Year Plan for Title I of the Workforce Investment Act of 1998 and the Wagner-Peyser Act*. Sacramento, CA. As Revised for the Period of Jul. 1, 2007 – Jun. 30, 2009.

⁵ Office of Advocacy Small Business Profile: California. (2006). *U.S. Small Business Administration*. Retrieved on August 7, 2007, from <http://www.sba.gov/advo/research/profiles/06ca.pdf>

⁶ High school Dropouts, Enrollment, and Graduation Rates in California. (2005). *California Performance Review*. Sacramento: California Research Bureau; (2004). Retrieved on February 13, 2006, from <http://cpr.ca.gov/report/cprprt.issrec/etv.chap3sum.htm>. de Cos, P.S.

those who do graduate, many find themselves underprepared for the demands of college or the workplace. Almost half of all community college and CSU freshmen require remediation in either reading or mathematics. Only half earn a degree within six years,⁷ and only 15% of high school graduates earn a four-year college diploma within ten years after high school.⁸ A strengthened system of CTE can engage and motivate students who are at risk of dropping out of high school, as well as support and prepare all students for entry to postsecondary education and careers. It can promote persistence and success in community college and at the university by providing focus, motivation, support, academic competencies, critical thinking skills, and linkages to the workplace where students can begin to clarify and realize their career goals.

Skills Required in the Workplace

There continue to be "wide gaps between the skills that businesses value and the skills most graduates actually have."⁹ A recent survey of employers found that the future U.S. workforce is "woefully ill-prepared" for the demands of the workplace.¹⁰ Projections suggest that by the year 2020, 36% of jobs will require "some college," and an additional 39% of jobs will require a college degree.¹¹ However, beyond the need for education, the workplace is seeking essential new skills that are not currently being stressed in schools and colleges. Employers emphasize that such skills as professionalism, teamwork, and communication are critical for success in the workplace. Employers also note deficiencies in these skills, as well as in key academic competencies and discipline-specific areas of knowledge, for workforce entrants coming from every education level.¹² The CTE needs assessment corroborated these findings and placed "the ability to continue learning" near the top of the list for long-term success. Creativity and innovation will also be particularly important as new workers compete in a rapidly changing global economy.¹³

Policy Support and Related Initiatives

California's Governor, the State Superintendent of Public Instruction, the Chancellor of the California Community Colleges, legislators, and industry have taken leadership in promoting a new vision of the future of CTE in California. Enacted in 2005, Senate Bill 70, the Governor's Initiative on Career Technical Education and Economic Development, allocates new resources to CTE system building, including improved linkages and program and course alignment among the CTE curricula of secondary schools, Regional Occupational Centers and Programs (ROCPs), and community colleges. Among these efforts is the Academic Senate Statewide Career Pathways Project, which will develop articulation templates, provide guidance on local articulation agreements, develop a state repository of agreements, facilitate dialogue, and conduct outreach. Proposition 1D provides vital funding for CTE facilities and equipment — key to high-quality programs.

Aligning CTE with Industry Requirements: The 15 Industry Sectors

To facilitate curriculum and pathway development, technical assistance, professional development, advisory structures, and support to student organizations, CTE programs in California in both the K-12/adult and community college segments have traditionally been clustered into six broad career areas. Since the adoption of the 2000-04 plan, CTE has been organized into 15 industry sectors, reflecting the intersection of California's economic and educational needs. The CTE Model Curriculum Standards reinforce this organizing structure and strengthen CTE programs in each area.

1. Agriculture and Natural Resources
2. Arts, Media, and Entertainment
3. Building Trades and Construction
4. Education, Child Development, and Family Services
5. Energy and Utilities
6. Engineering and Design
7. Fashion and Interior Design
8. Finance and Business
9. Health Science and Medical Technology
10. Hospitality, Tourism, and Recreation
11. Information Technology
12. Manufacturing and Product Development
13. Marketing, Sales, and Service
14. Public Services
15. Transportation

⁷ Tucker, M. (Nov. 2004). High school and beyond: The system is the problem – and the solution. National Center on Education and the Economy published in *Double the Numbers*, R. Kazis, J. Vargas & N. Hoffman (Eds.). Retrieved November 1, 2006 from [Hhttp://colosus.ncee.org/pdf/acsd/global/promo/gates_paper.pdf](http://colosus.ncee.org/pdf/acsd/global/promo/gates_paper.pdf)

⁸ California Legislative Analyst's Office. (2005). *Improving High School: A Strategic Approach*. Sacramento, CA.: Hill, E.

⁹ The Conference Board. (2006). *Are they Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century Workforce*. New York, NY.

¹⁰ Ibid.

¹¹ Public Policy Institute of California (2005) as cited in the *California Community Colleges System Strategic Plan*. (2006). Sacramento, CA.

¹² The Conference Board, op. cit.

¹³ The National Center on Education and the Economy. (2007). *Tough Choices, Tough Times: The Report of the New Commission on the Skills of the American Workforce*. Washington, D.C.

California's CTE Model Curriculum Standards and Framework, Grades Seven Through Twelve, adopted by the State Board of Education in 2005 and 2007 respectively, are organized into 15 "industry sectors" consistent with California's labor market.¹⁴ The CTE standards integrate California's academic content standards with industry-specific knowledge and skills. The documents emphasize 21st century labor market realities, adaptability to local CTE conditions, and increased rigor in the CTE system. The creation of the state's CTE plan is the next step in this statewide push to align efforts toward a common goal of preparing all students for the future, while ensuring a highly qualified workforce and vibrant economy.

THE CTE DELIVERY SYSTEM

CTE is delivered primarily through K-12/adult education programs and community college programs, with leadership, advocacy, and guidance provided by the CDE and CCCCO respectively. In addition, as the foundation of the state's workforce development system, CTE programs are closely linked with those of workforce and economic development agencies and industry, and rely on the participation of community-based organizations. They also often link to programs in the four-year university system. CTE is central to the mission of both K-12/adult and community college education; together with their partners, both work to make sure that all students are prepared for the demands of 21st century work and life. This means an emphasis not only on career exposure and the development of foundational skills, but also on lifelong learning for all Californians.

An Array of Programs

Each of the educational segments of the CTE delivery system offers a wide array of CTE or career-related programs. Each segment also has differing governance structures, policies, funding requirements, and accountability systems that impact the delivery of CTE. In addition, each segment includes various components, which have their own goals and regulations, and connect to the workplace and the community in unique ways. The success of a coherent CTE system depends both on "vertical" alignment across segments, and on the strong collaborative ties which run "horizontally" through each of the segments. Efforts must be aligned and coordinated along both these axes to provide full access to the experiences, academic rigor, workplace competencies, technical skills, and lifelong learning opportunities offered through high-quality CTE.

K-12/Adult Programs

- Elementary school awareness and middle school introductory CTE programs
- High school CTE, offered through 1,165 high schools in single courses, in course sequences, or through over 300 integrated "learning communities"
- ROCPs offering career pathways and programs through 74 ROCPs
- Adult education offered through 361 adult schools at over 1,000 sites, and through the ROCPs
- Apprenticeship offered through over 200 apprenticeship programs in ROCPs and adult schools

Community College Programs

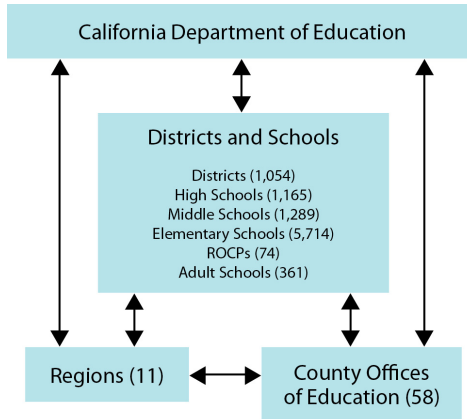
- Community college occupational programs offered at all 109 colleges, leading to certificates, associate degrees, and transfer to four-year universities
- Community college noncredit instruction (short-term CTE programs) offered by 58 colleges
- Community college-based apprenticeship offering over 160 apprenticeship programs located at 39 colleges
- Middle College High Schools (13) and Early College High Schools (19)¹⁵
- Tech Prep programs delivered through 80 Tech Prep "consortia," comprising 109 colleges and their feeder high schools

¹⁴ Previously, CTE was organized into six broad career areas. In the community college system these include: Agriculture and Natural Resources; Business Education; Family and Consumer Sciences; Health Careers; Industrial and Technical Education; and Public Safety Education. In the K-12/adult system they include: Agriculture; Business and Marketing; Health and Human Services; Home Economics Careers and Technology; Industrial and Technology; and Arts, Media, and Entertainment Education.

¹⁵ These are high schools on community college campuses. The programs are jointly administered by the CDE and the CCCCO. Early College High Schools are funded by the Bill and Melinda Gates Foundation.

- Economic and Workforce Development Program activities implemented through 115 “regional delivery centers” and 10 initiatives in emerging industries
- Contract education provided to organizations for their employees through community college districts

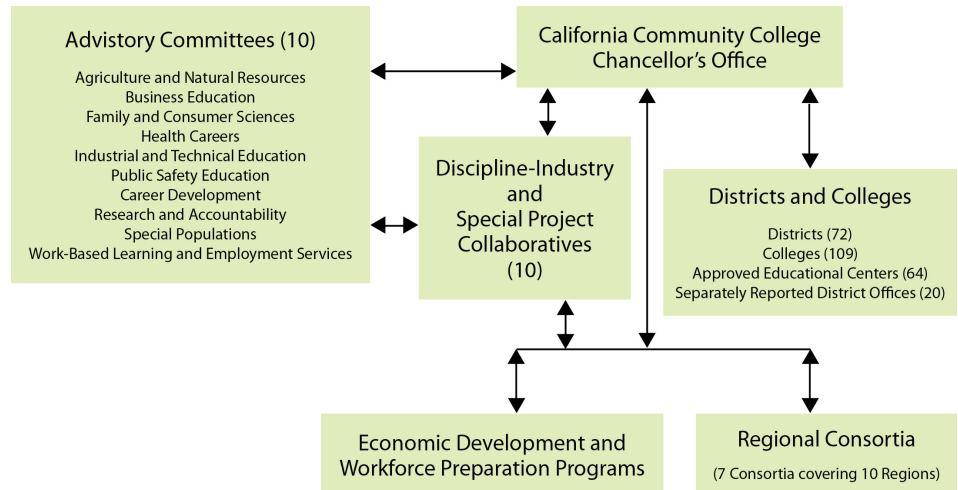
Figure 1. The flow of information in the K-12/adult system¹⁶



In the K-12/adult system, CTE is implemented locally, but coordinated centrally, with regional and county structures serving as mediators of information and support.

Figure 2. The flow of information in the community college system

In the community college system, CTE is implemented locally, but coordinated with the active involvement of community college system “collaboratives,” regional consortia, and statewide advisory committees. In addition, the Academic Senate, made up of faculty representatives, plays a key role in statewide decision-making.



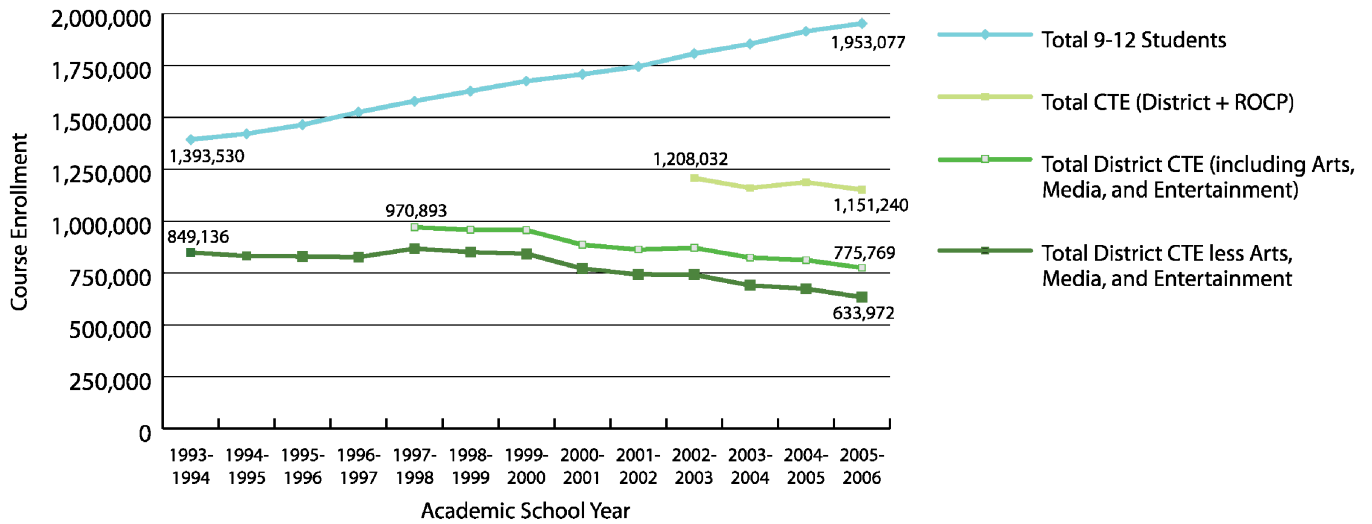
Enrollment Trends

CTE programs have not grown in proportion to the needs of the economy and of students. Enrollment in CTE at the secondary level has decreased as a percentage of high school enrollment overall. At the postsecondary level CTE enrollment has remained relatively steady, but demand may exceed supply. Adult schools and adult ROCP are heavily attended.

In the 2005-06 school year, over 531,000 students enrolled in their school district’s high school CTE programs. This represents about 27% of the nearly 2 million students in California public high schools. These students accounted for about 634,000 course enrollments in CTE’s district-supported established career areas.¹⁷ The addition of nearly 142,000 course enrollments in “arts, media, and entertainment,” a relatively new career area, results in a total district CTE course enrollment of over 775,000. ROCP enrollments bring the total to over 1 million. But, despite these large numbers, as seen in Figure 3, CTE enrollments have decreased over time. This decline has been attributed to limited resources and competing priorities, among other factors.

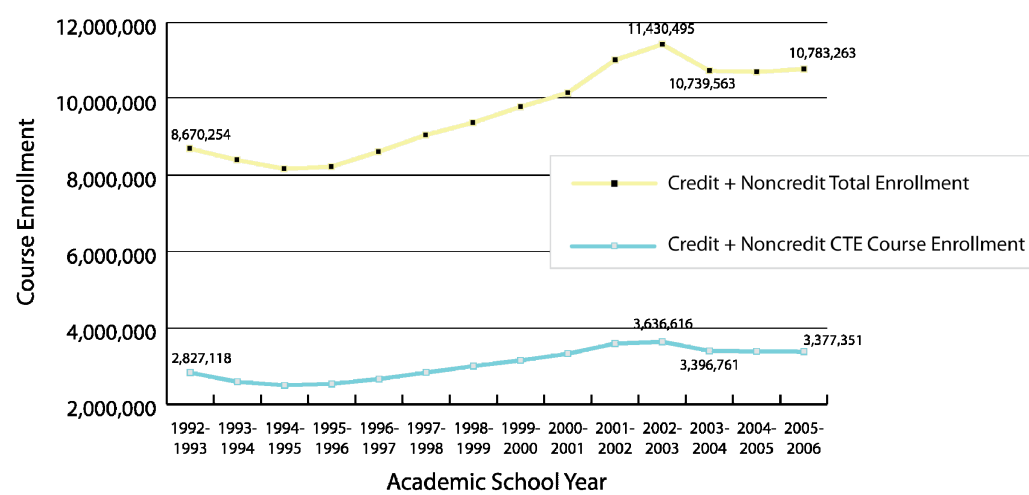
¹⁶ The number of high schools listed includes only comprehensive high schools; in addition, the state has over 1,300 alternative, continuation court, and special schools, including nine schools supported by the Department of Juvenile Justice, serving approximately 190,000 students.
¹⁷ This count excludes students enrolled in arts, media, and entertainment courses. The CBEDS data system used by CDE lists most previously established CTE courses as “CTE,” but many new CTE courses, such as arts, media, and entertainment courses, are listed “by Subject Area” and must therefore be counted separately.

Figure 3. CTE course enrollment compared to total high school enrollment, 1993-2005¹⁸



In the California community college system, roughly 1.4 million students are enrolled in CTE, or about 56% of the 2.5 million students enrolled in the community colleges. CTE course enrollments have roughly paralleled total community college enrollments over the last 14 years, remaining at just over 30% of the total. However, the system’s “enrollment caps” limit enrollments to what state and local funds can support; waiting lists for some CTE programs suggest that demand for CTE may surpass actual course offerings.

Figure 4. Postsecondary CTE course enrollment compared to total course enrollment, 1992-2005¹⁹



Community college CTE students vary widely in age. Almost half of them are over the age of 25, and 22% are above the age of 40, suggesting the need for “lifelong” learning programs. In addition, many students in secondary, postsecondary, and adult programs fall into the category of “special populations.” For example, across all systems, nearly a million CTE students are classified as “economically disadvantaged,” one of six “special population” categories.²⁰ CTE must be seen, therefore, as a means to individual economic security, as well as statewide economic vitality.

¹⁸ CBEDS 1993-2005; ROCP 2002-05.

¹⁹ CCCCCO MIS data. Retrieved July 2007.

²⁰ Special population students are defined as: individuals with disabilities; individuals from economically disadvantaged families, including foster children; individuals preparing for non-traditional fields; single parents, including single pregnant women; displaced homemakers; and individuals with limited English proficiency. (Joint Special Populations Advisory Committee)

BUILDING A HIGH-QUALITY CTE SYSTEM: A VISION FOR THE FUTURE

CTE can engage, motivate, and prepare all students for the future. The academic, technical, and workplace skills offered through CTE are essential to success for all working adults. They are essential to society in addressing the challenges posed not only by a changing economy, but also by a changing world. CTE can no longer exist as a separate educational alternative; it must be woven into the very fabric of our educational delivery system. Access must therefore be assured for all students through a system that aligns programs, curricula, and services across educational segments, programs, and disciplines. In this spirit, the state plan for CTE presents a framework — including a vision, mission statement, set of guiding principles, goals, and needed actions — that provides both the scaffolding for the state Perkins plan and a blueprint for strengthening California’s CTE system overall.²¹

Vision

CTE will engage every student in high-quality, rigorous, and relevant educational pathways and programs, developed in partnership with business and industry, promoting creativity, innovation, leadership, community service, and lifelong learning, and allowing students to turn their “passions into paychecks” — their dreams into careers.

Mission

The mission of CTE is to provide industry-linked programs and services that enable all individuals to reach their career goals in order to achieve economic self-sufficiency, compete in the global marketplace, and contribute to California’s economic prosperity.

Career Technical Education System Goals

Consistent with the vision and mission presented above, the CTE Resource Group developed the following ten system goals that will guide CTE in California through 2012-13. The following goals provide direction for establishing objectives that are realistic, attainable, timely, and measurable:

1. All students completing high school will be prepared for success in postsecondary education — including community college, four-year college, apprenticeship, adult school, trade school, military, or other education and training — and for employment and long-term careers.
2. Adults in California will be prepared with the skills and knowledge needed to reach their career goals and maintain economic self-sufficiency through access to information, guidance, support services, and educational opportunities offered in adult schools, ROCPs, and community college programs.
3. Every student will have the opportunity to complete a rigorous CTE course or pathway prior to graduating from high school.
4. Age appropriate career guidance information and experiences will engage all students throughout their K-14 educational experience in exploring, planning, managing, and reaching their educational and career goals.
5. All CTE courses and programs will be based on industry-endorsed standards, and designed to assist students in acquiring employment readiness and career success skills.
6. All CTE courses and programs will meet documented labor demands, including those of new and emerging occupations.
7. Statewide programs of study, dual enrollment, articulation of coursework, and related processes will be established to facilitate smooth student transitions from middle school to high school, and beyond, to postsecondary education and training.

²¹ See full list and explanation of guiding principles for CTE planning and implementation in the CTE State Plan.

8. Business, industry, and labor participation will be incorporated into all components of the CTE system at the local, regional, and state levels.
9. CTE teacher preparation programs and sustained professional development will be substantially expanded to ensure an adequate supply of highly prepared instructors. Teachers in all industry sectors and at all educational levels will have the skills necessary to provide rigorous and relevant instruction designed to meet diverse student needs.
10. Comprehensive data collection systems will be developed and coordinated to support ongoing program improvement, program accountability, measurement of system outcomes, and research.

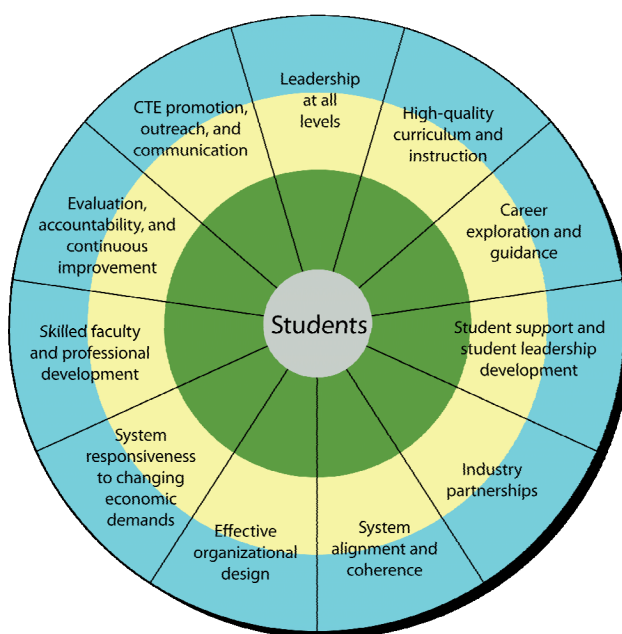
Achieving these goals will require focused attention and strategic investments in both the CTE system overall and in its component parts.

The 11 Elements of a High-Quality CTE System

Stakeholders, through the needs assessment, the CTE Resource Group meetings, and the public hearings, identified and validated 11 key elements that must be addressed if California is to meet its goals and develop a comprehensive CTE system that prepares all students for their future endeavors. Responsibility for implementation in each area is distributed among all levels — state, regional, and local.

Figure 8. CTE system elements

- Leadership at all levels
- High-quality curriculum and instruction
- Career exploration and guidance
- Student support and student leadership development
- Industry partnerships
- System alignment and coherence
- Effective organizational design
- System responsiveness to changing economic demands
- Skilled faculty and professional development
- Evaluation, accountability, and continuous improvement
- CTE promotion, outreach, and communication



Legend
State
Regional
Local

Each of these elements is currently in place to some extent at various levels of California's CTE system, but further development, alignment, and integration are needed if California is to have a comprehensive system that provides all students with access to the knowledge and skills they need to succeed in the workplace and in life. A brief overview of the needed actions within each element is presented below; specific strategies in each of these areas are provided in the complete plan.

Leadership at All Levels

Leadership in the implementation of CTE is required at all levels — state, regional, local — and across sectors, in order to ensure high-quality programs and coordination of efforts. It takes the form of both centralized staffing and decentralized advisory and peer leadership structures. Yet, over the last decade, CTE has lost much of its leadership, due to reduced staffing and changing priorities, and central office staff responsibilities have been reduced to administrative functions and compliance monitoring. Strategies must be implemented to strengthen, galvanize, and align leadership throughout the CTE system to ensure support to the field, sharing of learning, replication of successes, and continuous improvement, if CTE is to rise to the challenges posed by our new economy and new world. In addition to support at the state level, with increased emphasis on program improvement, investment in CTE leadership at the regional and local level is also necessary.

High-Quality Curriculum and Instruction

High-quality CTE curriculum and instruction stimulate authentic learning. They intentionally highlight the academics inherent in CTE and integrate CTE with academic coursework. They do so in multiple ways — through alignment with standards and contextualization of academics, through faculty collaboration and team teaching, and through projects and work-based learning. They connect theory with practice to enhance the relevance of academics, facilitate understanding and mastery, and instill a variety of essential transferable skills, including problem-solving, effective communication, creativity, and teamwork. Efforts to promote high-quality, integrated curricula include adoption of the CTE Model Curriculum Standards and Framework, alignment of CTE courses with A-G requirements for admission to the state's university system, alignment of CTE and noncredit instruction in the community colleges, and the implementation of work-based learning programs and a variety of tools and professional development strategies in both segments. Yet, to fully realize the benefits of CTE's unique thematic, student-driven, and hands-on approach to instruction, these strategies must be expanded and developed. Further, challenges must be addressed with a focus on bridging the "academic-CTE divide" through collaboration across disciplines, and on systemic change, including a review of current policies that pose barriers to integration and the implementation of high-quality programs.

Career Exploration and Guidance

The career exploration and guidance functions serve students at all stages of the developmental continuum, first to awaken in children a sense of boundless possibility, and later to prepare adults for the multiple job changes that they will experience over the course of their working lives. Knowledge of the available options, as well as awareness of personal interests, is essential to making good choices. Students and job seekers must also understand the skills needed in the workplace and how to navigate the educational system and the work world to meet their goals. The CTE Model Curriculum Standards address the "foundation skills," and recent legislation is bringing some additional resources to counselors. In addition, the California Career Resource Network was created explicitly to provide free and low-cost career exploration and career education resources to the field. However, more — and more systematic — efforts are needed, including exposure of counselors, instructors, staff, and parents to the requirements of the workplace, and earlier exposure of students to options — before they disengage from school.

Student Support and Student Leadership Development

CTE is an educational strategy that provides students with engaging curricula, career preparation, and opportunities for advancement. As such, it must be accessible to all students in order to reach the populations most in need of these benefits. Once enrolled, many students also need additional support and personalization. In addition, they can benefit from student leadership opportunities offered through CTE's unique student organizations. However, students in "special populations," including students with disabilities, individuals from economically disadvantaged families, foster children, individuals preparing for "nontraditional fields," single parents and single pregnant women, displaced homemakers, and English learners, face numerous challenges in accessing CTE. Further, many students at all levels need support with issues such as childcare and transportation, in addition to basic skills. Outreach to students is required, as are targeted support services, vigorous exposure to "nontraditional occupations," expanded access to student organizations, and more personalized learning environments, to ensure that students succeed and achieve their full potential — particularly as the rigor of CTE increases.

Industry Partnerships

Industry partnership is a unique feature of CTE. Partnerships ensure that CTE curricula remain relevant to the needs of the workplace and provide students and educators with opportunities for learning and work experience in the world outside of education. Currently, advisory committees serve as the primary mechanism for industry to provide input to education. Efforts must be made to ensure that industry is engaged in meaningful ways for advisory purposes, as well as for work-based learning and professional development.

System Alignment and Coherence

Alignment and cooperation, both "vertically" and "horizontally" throughout the CTE system, are essential to maximize efficient use of system resources and provide optimal services to students. Key strategies for building a more coherent CTE system include course sequencing, articulation agreements, Senate Bill 70 initiatives, Tech Prep, dual and concurrent enrollment strategies, "middle-" and "early college" high schools, the creation of the California Partnership for Achieving Student Success (Cal-PASS), which is working to promote dialogue and alignment of data collection across the segments, and workforce and school site plans that emphasize coordination among initiatives. Systemwide implementation of these strategies is needed. In addition, differing organizational cultures and practical challenges, such as the lack of time for faculty collaboration, must be addressed if students are to have access to seamless pathways.

Effective Organizational Design

Ensuring access to CTE and the development of more integrated approaches to teaching and learning, including collaboration among faculty and across disciplines, requires attention to organizational design issues. These include organizational structure, such as the creation of "learning communities," scheduling, and use of class time (e. g., 6 or 7 period days, block schedules, open-entry/open-exit options), use of out-of-school time, access to facilities, and use of technology for distance learning. In addition, students must have increased mobility to access career pathways of interest in schools or colleges that may not be in their areas. Implementation of new design options has begun. For example, resources have been allocated for career academies and pathway development, many schools now implement alternative scheduling, and both adult schools and community colleges employ distance learning strategies. Yet, expanded efforts and greater flexibility are necessary to implement innovative programs that benefit greater numbers of students.

System Responsiveness to Changing Economic Demands

Education must "move at the pace of work" if it is to respond in timely ways to the demands of the workplace and contribute to continued economic prosperity. A number of strategies are already being implemented to ensure a "demand-driven," responsive CTE system: the California CTE Model Curriculum Standards and Framework; advisory committees processes; sharing of labor market information across sectors; coordination with the CCCC Economic Development Initiatives; strategies supported by Senate Bill 70 to develop career pathways based on industry demand; and contract education, which provides on-demand training to incumbent workers. However, broader and deeper implementation of these strategies is required.

Skilled Faculty and Professional Development

Skilled CTE instructors have multiple mandates; they must be knowledgeable and current in their technical areas and knowledgeable in the academic underpinnings of their professions. In addition, they must be excellent teachers, facile in highlighting and integrating academic content into their courses, and able to broker opportunities for learning that bridge the classroom and the workplace. Finding individuals with all of these skills is difficult. Innovative recruitment and credentialing, drawing on business and industry, must therefore be supplemented with collaborative teaching strategies to provide students access to experiences that encompass the full range of knowledge and skill required. In addition, preservice and inservice professional development programs must be expanded for both CTE and academic instructors, administrators, counselors, and staff, to include integrated teaching strategies and the skills required to succeed in the 21st century. Such professional development must, above all, promote understanding between CTE and "academic" personnel. Finally, all teachers, administrators, counselors, and staff can benefit from first-hand experience in the workplace outside of education.

Evaluation, Accountability, and Continuous Improvement

Having done the work of identifying clear CTE system goals, it is essential that the state develop the means for understanding when and how well the goals are being met and establish mechanisms for continuous improvement. Students in CTE programs must be able to demonstrate both academic achievement and mastery of technical and workplace knowledge and skills. The community colleges employ a comprehensive management information system and have implemented the Perkins Core Indicator Accountability framework as well as the Accountability Reporting for Community Colleges framework. Systems such as the California Student Information System (CSIS), providing unique identifiers for K-12/adult students, and Cal-PASS will enable the monitoring of student progress across schools and segments. The California Longitudinal Pupil Achievement Data System (CALPADS) will improve the measurement of K-12/adult student outcomes, and the CTE Model Curriculum Standards and Framework lay the groundwork for performance-based assessments in CTE. However, all of these systems must be fully implemented, with definitions clarified and widely understood. Further, statewide accountability systems must include measures that address CTE-related outcomes, such as technical skill attainment and employment, as well as graduation and transitions to further education. In addition, resources and professional development are required to support the collection, analysis, and use of data for program improvement. Finally, research is required to determine program effectiveness and ongoing evaluation is necessary to ensure that the system as a whole — beyond its individual programs — is meeting its goals.

CTE Promotion, Outreach, and Communication

The many benefits of CTE are reaped only to the extent that students take advantage of the available learning opportunities. Students, parents, educators, businesses, and policy makers need more information about CTE programs and evidence of their effectiveness. In addition, communication among practitioners across the “academic-CTE divide” must be promoted to facilitate mutual understanding and better course and program integration for the benefit of all students.

SUMMARY

The goals, vision, mission, and 11 system elements presented in the 2008-12 State Plan, informed by a set of guiding principles, provide a framework for the future of CTE — indeed, the future of education and workforce development — in California. They offer the prospect of creating a coherent system that provides clear, well-designed, integrated pathways leading to further education, employment, and long-term careers. These pathways would address students’ developmental needs from childhood through lifelong learning, as well as the need of state, regional, and local economies for a highly skilled workforce. As with any system, all of the elements are interrelated, and the whole is only as strong as its weakest link. If any of the 11 elements is absent, students and the workforce will be shortchanged. Similarly, the system must address the needs of all students, including young children for whom CTE can open endless future possibilities, youth searching for identity and opportunity, young adults forging their career paths, and re-entry and incumbent workers seeking new skills and options. To achieve this aim, thoughtful prioritization of strategies and concrete actions are needed in each area. Educators, industry representatives, community members, and policy makers are called upon to complete the work begun through the statewide planning process and bring these ideas to life to ensure the success of all students, a robust economy, and the well-being of California’s communities.