

CHAPTER TWO

THE CONTEXT FOR CAREER TECHNICAL EDUCATION IN CALIFORNIA

The development of the state CTE plan must take into account the demographic, economic, educational, and political contexts shaping the state's workforce demands. Shifts in population, economic growth, and regional recessions, emerging and declining industries, educational reforms, and state political priorities all present opportunities and challenges for the delivery of CTE.

Demographic Context

TOTAL STATE POPULATION GROWTH

Developing a state CTE plan that meets workforce demands requires an understanding of trends in the size and composition of California's population. Statewide, the population is 37.7 million people, roughly 12.5 percent of the total U.S. population. The state's population increased by approximately 1.3 percent (470,000 people) in 2006, and has increased by 3.8 million people (11.2 percent) since the most recent (2000) U.S. Census.²⁹

Population growth during the next decade is expected to be somewhat slower, with a projected 1.3 percent per year increase between 2005–2015, down from the 1.6 percent annual population growth during the previous decade.³⁰ Some of this decline is attributed to the aging of the state's population.

POPULATION GROWTH BY AGE GROUP

While the state's overall population is expected to grow, there are some notable differences projected for the various age groups. The average age of Californians is increasing as the aging of the baby boomers leads to substantial growth in the 55 and older cohort. At the same time, the elementary and secondary school age population is expected to experience slower growth, due in part to declines in birth rates, lower in-migration, and the aging of the children of the baby boomers.³¹ Consistent with the latter, the 20–34-year-old cohort is increasing more rapidly than it did in the previous

29 E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change – January 1, 2006 and 2007. (2007, May). Department of Finance. Sacramento, CA. Retrieved June 1, 2007, from <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E1/E-1text.asp>

30 Center for Continuing Study of the California Economy. (2006). *Opportunities and Challenges for the California Economy: California Economic Growth Chapter 2*. Palo Alto, CA.

31 *Cal Facts: California's Economy and Budget in Perspective*. (2006). California Legislative Analyst's Office. Retrieved June 1, 2007, from http://www.lao.ca.gov/2006/cal_facts/calfacts_economy_2006.pdf

decade. Overall, population changes for different age groups are anticipated to look quite different over the next decade compared to the previous decade.³²

- » The 14–19-year-old cohort is projected to experience much slower growth than in the previous decade, with a very small increase (approximately 36,000) between 2005–2015 compared to an increase of more than 650,000 the previous decade.
- » Between 2005 and 2015, the state projects an increase of approximately 1.5 million residents in the 20–34-year-old age group, up from an increase of 250,000 in the previous decade.
- » The 35–54-year-old cohort is expected to remain steady at 10.9 million residents between 2005–2015, after an increase of 2.2 million residents the previous decade.
- » The 55 and older age group is projected to increase by 2.7 million (a 37 percent increase), with the retirement of the baby boomers becoming a factor in the California labor market after 2010.

STATEWIDE POPULATION BY ETHNIC GROUP

The population trends associated with the changing ethnic makeup of the state for the past decade are expected to continue. The biggest overall shift is the projection that by 2015, the Hispanic population will have grown to be the single largest ethnic group in the state. The Hispanic population will likely grow by 4.1 million people between 2000 and 2010, and by an additional 3.7 million between 2010 and 2020. Overall, the Hispanic population is expected to increase by 70 percent between 2000 and 2020. By contrast, the White population is expected to decline by approximately 670,000 between 2000 and 2010, and decline by an additional 621,000 between 2010 and 2020. These projections suggest an 8 percent decline in the White population between 2000 and 2020, making it the only ethnic group to experience a decline in population between 2000 and 2020.³³

Consideration of population changes by both age and ethnicity reveals additional important information for CTE planning. Between 2010 and 2020, the population of Hispanics in the 20–34-year-old age group (the people who will be entering the workforce and/or pursuing postsecondary education) will likely increase by more than 1 million.³⁴

32 [Race/Ethnic Population with Age and Sex Detail, 2000–2050](#). (2007, July). California Department of Finance. Previous decade data is from Center for Continuing Study of the California Economy, op. cit. Retrieved on July 16, 2007, from http://www.dof.ca.gov/html/DEMOGRAP/Data/RaceEthnic/Population-00-50/RaceData_2000-2050.asp

33 [Population Projections for California and Its Counties 2000–2050](#). (2007, July). California Department of Finance. Retrieved on July 16, 2007, from <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Projections/P1/P1.asp>

34 Ibid.

This increase accounts for more than two-thirds of the total projected population growth for this age group.

REGIONAL DIFFERENCES

Given the vast physical size and geographic diversity of California, different regions of the state experience population growth and decline at varying rates. Notably, the five southern California counties of Los Angeles, Orange, Riverside, San Bernardino, and San Diego accounted for 55 percent of the state's total population in 2006, and 58 percent of the population increased between 2001–2006.³⁵ Southern California counties are expected to continue to see the greatest increase in numbers of people through the year 2020. Los Angeles (1.3 million new people), Riverside (1.1 million new people), and San Diego (801,000 new people) are the three counties projected to experience the greatest numeric population change between 2000 and 2020.

The highest percentage growth rates have been in the Central Valley and Foothill counties, as well as in Riverside and San Bernardino counties in southern California. These regions are projected to continue to experience population growth through 2020. Counties projected to experience the largest percentage of increases in population between 2000 and 2020 include Placer (83 percent), San Joaquin (74 percent), and Riverside (72 percent).

ECONOMIC DISADVANTAGE AND IMMIGRATION

Poverty rate data indicate that 13 percent of the state's overall population is poor.³⁶ In addition, increasingly, California's poor are the working poor, with 31 percent of families in poverty having at least one member working full time and 39 percent having at least one member working part time.

The poverty rate is much higher for Hispanics and African Americans (20 percent) than it is for Asians (12 percent) or Whites (8 percent). Children are particularly hard hit by poverty. Poverty rates for children under 18 are much higher (19 percent) than for adults 18–64 (12 percent) or for seniors over 65 (8 percent). Poverty rates are especially high for children living in single mother families (42 percent).³⁷ Another proxy for childhood poverty is student enrollment in the public school's free and reduced price meal programs. In California, more than 3.1 million students ages 5–17 are enrolled in the federal free

35 California Legislative Analyst's Office, *op. cit.*

36 *Just the Facts: Poverty in California*. (2006, Nov.). Public Policy Institute of California. Retrieved on July 16, 2007, from http://www.ppic.org/content/pubs/jtf/JTF_PovertyJTF.pdf

37 *Ibid.*

or reduced price meal program, representing more than 50 percent of public K–12 enrollments in the state.³⁸

Of particular importance is the role that immigration is expected to play in the future workforce. Most of the growth in California's workforce over the next 25 years is projected to come from immigrants (39 percent) and the children of immigrants (60 percent). The state will need to ensure that CTE addresses the unique needs of these families as they enter into the state's education system and workforce.

The unique challenge in meeting the needs of immigrants is the lack of English language proficiency. Currently, one out of every five Californians, more than 6 million individuals, is "limited English proficient."³⁹ There are 1.6 million students in California's K–12 education system identified as "English learners." These students collectively speak more than 50 different languages, with 1.3 million (85 percent) speaking Spanish as their native language.

IMPLICATIONS FOR CTE

Understanding these complex demographic features, and particularly the implications of immigration, the aging workforce, and economic disadvantage among young people, remains important for the CTE planning process. Given California's current and expected population shifts, CTE plans must continue to meet the educational and technical skill needs of a new and diverse group of students, many of whom are not proficient in English or may be the first in their families to attend college. The impending retirements of the baby boom generation, coupled with a reduced growth rate in the 35–54-year-old-cohort and growth in the 20–34-year-old cohort, underscore the importance of making sure workforce-age residents are equipped to enter and energize the economy. As reported in the National Center on Education and the Economy's report, *Tough Choices, Tough Times: The Report of the New Commission on the Skills of the American Workforce*, the fact that "most of the people we will have in our workforce in 20 years are already in the workforce now,"⁴⁰ suggests that the education and workforce systems must provide ongoing opportunities for adults to upgrade their skills. CTE must also target economically disadvantaged students and workers so they can receive the education and training needed to move into higher wage and high demand jobs. Finally, population growth in

38 Selected Statewide Data for the Year 2006–07. (2006). California Department of Education. Educational Demographics Unit. Retrieved on July 16, 2007, from <http://data1.cde.ca.gov/dataquest>

39 California County Profiles: Limited English Proficient Population. (2006, June). California Endowment. Retrieved on June 15, 2007, from <http://www.calendow.org/reference/publications/pdf/cultural/CA%20County%20ProfilesALL.pdf>

40 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.

rural counties suggests the need for innovative delivery strategies, including greater use of distance education.

Economic Context

Information about California's economic context and regional economies, as well as the projected labor market, employment, and earnings trends, is critical to the CTE planning process. Specifically, these data help identify occupations that are in high demand, employ a large percentage of the workforce, and reflect new and emerging fields of work. Strong economic data can also help educators supply current and relevant workforce information to students, facilitating their career decision-making processes.⁴¹

California's gross state product is more than \$1.6 trillion, accounting for more than 13 percent of U.S. gross national product. California has the eighth largest economy in the world,⁴² 40 percent greater than that of Texas, which has the next largest state economy. In addition, California has the largest labor market in the country with more than 15 million nonfarm jobs in 2006, representing 11 percent of nonfarm jobs in the United States.⁴³

THE 21ST CENTURY ECONOMY – CHALLENGES AND CHANGES

The 21st century economy is characterized by new industries and new technologies as well as by an unprecedented globalization of the workforce. The nation's education and training systems were built for a different era and now must adapt to this global economy. California is at the center of many of the changes that are occurring in the current economy. The state's economic base is concentrated in industry sectors with above average growth potential both nationally and worldwide. California is at the center of innovation in areas such as stem cell research, alternative energy, and the Internet, and has the nation's largest entertainment and tourism sectors. In addition, small businesses, defined as employer firms with fewer than 500 employees, represent more than 99 percent of the employers in the state and employ more than 50 percent of the state's nonfarm private sector workforce; firms with fewer than 100 employees represent more

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- 41 B. L. Brown. (2006). Connecting CTE to Labor Market Information. *Practice Application Brief No. 28*. Ohio State University. Columbus, Ohio: ERIC Clearinghouse on Adult, Career and Vocational Education. Sandra Kerka. (Ed). *What Works: Occupational Skill Training*. (2006). Columbus, OH: The Ohio State University Learning Work Connection.
- 42 California Legislative Analyst's Office, op. cit.
- 43 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: Cal WIA. As revised for the period of July 1, 2007 – June 30, 2009.

than 97 percent of the employer businesses in the state and employ nearly 40 percent of the state's nonfarm private sector workforce.⁴⁴

While much attention is paid to new jobs that will be created in emerging industries, national and state analyses indicate that there will be many more job openings from replacement jobs (due to retirements and job changes) than newly recreated jobs. 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 need to replace workers.⁴⁵ Because a strong economy depends on both "population-serving" industries like health care and education and industry sectors with the potential for rapid growth, both types of industries are important to the future of the state. The California Employment Development Department identifies the following industries as most critical for the California economy in the near future: automotive, biotechnology, construction, energy, financial services, geospatial, health care, hospitality, information technology, manufacturing, retail, transportation, agriculture, arts, media, and entertainment. Agriculture is especially vital to the state's economic strength, providing nearly one in ten jobs and more than \$100 billion in related economic activity.⁴⁶

ECONOMIC REGIONS OF THE STATE

In a state as large and complex as California, regional characteristics can vary widely and are critical factors in ensuring a match between training opportunities and regional workforce needs. To meet educational and occupational training needs throughout the state, the CTE plan must take into account differences in industry needs, economic structure, and availability of training resources in the various regions. One measure that varies greatly by region, for example, is unemployment rate: Unemployment rates in different parts of the state ranged from annual average unemployment rates of less than 4 percent in 2006 to unemployment rates of more than 12.5 percent.⁴⁷

Projections of industry growth vary by region as well. For example, in Santa Clara County, the industries expected to see the most growth in employment between 2004–2014 are information (including publishing and Internet-related occupations) and construction. By contrast, in San Joaquin County, education, health services, and government are projected

44 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>

45 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: Cal WIA. As revised for the period of July 1, 2007 – June 30, 2009, p. 2–10.

46 California Department of Food and Agriculture. (2006).

47 Ibid.

to see the most job growth.⁴⁸ Consideration of differences in regional economies is critical because “the most effective way to provide a real future for people who need jobs is to provide training that is related to the economic future of the region those people live in.”⁴⁹

STATEWIDE EMPLOYMENT GROWTH BY INDUSTRY

Short-term and long-term employment growth information is important to CTE planning for the education system to be responsive to and meet the demands of high growth industries. The most recent short-term projections (2005–2007) estimate the state’s annual job growth rate to be approximately 1.3 percent, with about 400,000 new jobs added during this time. Almost 30 percent of this job growth is estimated to be in professional and business services area. Long-term projections (2004–2014) follow the short-term trends. More than 90 percent of the industries expected to experience employment growth over the next decade are “service industries.” The state’s 50 largest growing occupations are expected to generate approximately 3.2 million job openings (1.4 million new jobs and 1.8 million replacement jobs).⁵⁰

LARGEST PERCENTAGE (EMPLOYMENT) CHANGES BY INDUSTRY

The top 10 fastest growing industries in the state account for nearly 60 percent of the projected increase in new jobs in California between 2004–2014. Top growth industries include administrative services, health care, retail, hospitality management and food services, and professional, scientific, and technical services.

Currently, the fastest growing occupations in the state are in the computer, education, and health care industries. Specifically, the top five fastest growing occupations projected between 2004–2014 are network systems and data communications analysts, home health aides, computer software engineers (both applications and systems software), and network and computer systems administrators.⁵¹ Each of these occupations is expected to increase its number of available jobs by more than 40 percent during this time period, an increase of anywhere from 12,000 to 39,000 jobs.

48 Projections of Employment by Industry and Occupation. (2006). Labor Market Information Division. California Employment Development Department. Retrieved on June 15, 2007, from <http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=145>

49 National Center on Education and the Economy. (2007). *Tough Choices or Tough Times: The Report for the New Commission on the Skills of the American Workforce San Francisco*. Washington, DC. (pp. xxx-xxxii).

50 CAL WIA, op.cit. (pp. 25).

51 Projections of Employment by Industry and Occupation. (2007). California Employment Development Department. Retrieved on June 25, 2007, from <http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=145>

LARGEST ABSOLUTE (EMPLOYMENT) CHANGES BY INDUSTRY

The professional and business service industries will add the most new jobs in the next decade, with an additional 597,900 jobs between 2004–2014. Industries such as government (375,800), health care and social assistance (316,900), retail trade (276,400), and accommodation and food services (217,800) will also add large numbers of new jobs in the next decade.⁵²

Occupations projected to have the largest number of job openings between 2004–2014 include retail sales, cashiers, waiters and waitresses, laborers, and office clerks. The retail sales area is projected to see the largest number of job openings, with 288,000 new and replacement jobs in that decade.

While many of the occupations with the largest number of job openings are in lower wage and lower skill areas, there are higher wage occupations that will see a large number of job openings as well. Registered nursing is projected to gain about 109,000 new jobs between 2004–2014, 60,900 due to new jobs and 48,200 replacement openings. General and occupational management and elementary school teaching are both expected to have over 80,000 new job openings between 2004 and 2014.⁵³

IMPLICATIONS FOR CTE

The opportunities and challenges created by the state's complex, diverse economy are important considerations in developing the CTE plan. California has a long history of economic growth based on innovation, creativity, opportunity, and entrepreneurship. 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). CTE must be ready to prepare students for jobs in both emerging and traditional industries while meeting the needs of regional economies. CTE has particular relevance for existing adult workers whose skills must be upgraded in order to help meet the state's economic potential. The high percentage of small businesses also has implications for how CTE engages its employer communities and suggests the need for employees to develop entrepreneurial and career management skills among other workplace and technical skills.

52 Cal WIA, op. cit. (p. 143).

53 Projections of Employment by Industry and Occupation. (2007). California Employment Development Department. Retrieved on June 15, 2007, from <http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=145>

Educational Context

The state CTE plan is being developed at a time when secondary school reform is at the top of many educational policy agendas and when community colleges are increasingly required to address students' needs for basic literacy and math skills. High dropout rates and the poor academic achievement of high school graduates have led policymakers, business leaders, philanthropists, and educators to seek new ways to "fix" high schools. Many of the school reform efforts currently viewed as ways to help our failing schools (e.g., smaller learning communities, academies, multiple pathways) emphasize the new four R's: rigor, relevance, relationships, and results. CTE addresses many of the components of these various reform efforts. Specifically, CTE:

- » Raises rigor by aligning or integrating strong technical content with academic content, thus providing students with the knowledge and skills necessary for success in both the workforce and in higher education.
- » Increases relevance by promoting the integration of career themes and project-based strategies into academic coursework and developing programs that are responsive to the changing needs of the workforce, both in terms of skill requirements and labor market trends.
- » Promotes supportive relationships and individualized attention for students, and provides industry mentors and role models for both students and educators.
- » Strengthens relationships among the K–12, adult school, and community college segments, and between education and industry.
- » Produces positive results – promotes engagement, persistence, academic achievement, technical skill attainment, self-knowledge, workplace and career management skills, employment, lifelong learning, and long-term career success.

STUDENT PREPARATION

Though projections for student population growth will continue to increase (an estimated 2.5 percent growth in K–12 enrollments between 2005–2015 and 22 percent growth projected in community college enrollments⁵⁴), there is evidence that many of the state's high school and college students are not being adequately prepared for the workforce. This is evidenced by high school dropout rates, generally low academic performance, low secondary-to-postsecondary transition rates for certain populations, and the need for college remediation. According to a 2005 national survey of high school graduates,

54 California Public K–12 Enrollment and High School Graduate Projections by County, 2006 Series. (2006, October). California Department of Finance; and California Public Postsecondary Enrollment Projections, 2006 Series. (2006, December). California Department of Finance.

college instructors, and employers, as many as 40 percent of American public high school graduates are unprepared for both college and work.⁵⁵

Between one-fourth and one-third of all students fail to graduate from public high schools in California,⁵⁶ and African American and Hispanic students, who make up more than half of the state's student population, are at higher risk of noncompletion than their peers.⁵⁷ Close to 1 million Californians in the 18-24-year-old cohort do not have a high school diploma.⁵⁸ Further, a large percentage of students drops out as early as ninth grade. The eighth to ninth grade transition year is considered to be a particularly vulnerable time for students.⁵⁹ In addition, even those who do not drop out until eleventh or twelfth grade lose interest well before then. In one study, 71 percent of the students who dropped out said they had lost interest in school in the ninth and tenth grades. Nationally, much of the dropping out of school has shifted from the last two years of high school, typical three decades ago, to between ninth and tenth grades today.⁶⁰

This tragedy affects all levels of society, as high school dropouts are twice as likely as their graduating classmates to slip into poverty and experience unemployment, underemployment, incarceration, and poor health.⁶¹ In 2004, nearly three-fourths of all high school dropouts did not have jobs. Research shows that CTE can help to reduce the likelihood that a student will drop out of school by offering a student a broader array of experiences with clear relevance to life after school. CTE offers students more

55 Rising to the Challenge: *Are High School Graduates Prepared for College and Work?* (2005). Peter D. Hart Research Associates & Public Opinion Strategies. Retrieved on April 21, 2006, from [http://www.achieve.org/dstore.nsf/Lookup/pollreport/\\$file/pollreport.pdf](http://www.achieve.org/dstore.nsf/Lookup/pollreport/$file/pollreport.pdf)

56 The statistic varies depending on the way that dropout rates are calculated. The basic completion ratio graduation rate, which compares ninth grade enrollment to the number of students who graduated, found that only 70.7 percent of California students from the class of 2004 graduated from high school. This basic completion method yields a high school dropout rate of nearly 30 percent.

57 P.S. de Cos, *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/cprpt.issrec/etv.chap3sum.htm>.

58 *Environmental Scan: A Summary of Key Issues Facing California Community Colleges Pertinent to the Strategic Planning Process*. (2005, July). Center for Student Success of the Research and Planning Group for California Community Colleges. Retrieved on June 15, 2007, from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/28/07/e9.pdf

59 B. Berliner and E. Brodie. *The Drop Out Challenge*. (2007). REL West, WestEd. San Francisco, CA.

60 John M. Bridgeland, et al. *The Silent Epidemic: Perspectives of High School Dropouts*. (2006, March). Civic Enterprises in association with Peter D. Hart Research Associates for the Bill & Melinda Gates Foundation. Washington, DC.

61 Ibid.

individualized instruction, mentoring, and service or work-based learning opportunities, all of which are shown to help increase the likelihood that a student will stay in school.⁶²

Of the students completing high school, close to 70 percent go on to either two-year or four-year colleges. But, of those who continue on to postsecondary education, only half earn a degree within six years,⁶³ and only 15 percent of high school graduates earn a four-year college diploma within ten years after high school.⁶⁴ Taking into account a 30 percent dropout rate, this means that only 25 percent of entering high school freshmen complete any kind of postsecondary degree and only 11 percent eventually earn a bachelor's degree.

One reason for the low completion rates may be that many students are entering postsecondary education unprepared for college-level work. A survey of placement test results in California indicates that 70 percent of community college students place in remedial-level mathematics and 42 percent place in remedial-level English.⁶⁵ The most recent (Fall 2006) results of California State University's (CSU) Early Assessment Program (EAP) indicate that even students eligible for the CSU are in need of remediation, as only 62.5 percent of entering freshmen were proficient in mathematics, and 54.7 percent were proficient in English.⁶⁶

THE NEED FOR WORKPLACE SKILLS

Increasing the number of students who graduate from high school and are prepared for college-level work is only part of the challenge for California.

It is projected that 60 percent of future jobs will require training that only 20 percent of today's workers possess.⁶⁷ Other projections suggest that by the year 2020, 36 percent of

62 *The Challenge Facing our Nation*. (2006). Bill and Melinda Gates Foundation. Retrieved on November 20, 2007, from <http://www.gatesfoundation.org/UnitedStates/Education/TransformingHighSchools/RelatedInfo/TheChallenge.htm>

63 R. Kazis, J. Vargas & N. Hoffman (Eds.) M. Tucker. *High School and Beyond: The System is the Problem – and the Solution*. National Center on Education and the Economy. *Double the Numbers*. (2004, November). Retrieved November 1, 2006 from http://colosus.ncee.org/pdf/acsd/global/promo/gates_paper.pdf

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

65 Center for Student Success, op. cit.

66 *Proficiency Reports of Students Entering the California State University System*. (2007). California State University, Analytic Studies. Retrieved on July 15, 2007, from <http://www.asd.calstate.edu/performance/proficiency.shtml>

67 *Building a Nation of Learners: The Need for Changes in Teaching and Learning to Meet Global Challenges*. (2003). Business-Higher Education Forum. Retrieved on July 15, 2007, from http://www.bhef.com/includes/pdf/2003_build_nation.pdf

jobs will require “some college,” and an additional 39 percent of jobs will require a college degree. If current trends persist, the population supply will not meet the demand since only 28 percent of the population is expected to have “some college” and 33 percent will likely obtain a college degree.

As the nation continues to shift from an industrial to a knowledge-based economy, individuals with no postsecondary education or training will find it difficult to move beyond subsistence-level jobs.⁶⁸ Adults age 18 and older with only a high school diploma earned only \$29,448 per year, according to tabulations released in 2006 by the U.S. Census Bureau. And those adults without a high school diploma earned an average of only \$19,915. By contrast, graduates with a technical certificate or associate degree earned \$37,990 and those with a bachelor’s degree earned an average of \$54,689 in 2005.⁶⁹

Beyond the need for high levels of education, the workplace is seeking essential new skills that are not currently being stressed in schools and colleges. Completing programs or taking rigorous courses may not be enough. There continue to be “wide gaps between the skills that businesses value and the skills most graduates actually have.”⁷⁰ A recent survey of employers found that the future U.S. workforce is “woefully ill-prepared” for the demands of tomorrow’s (and today’s) workplace. Employers emphasize such skills as professionalism, teamwork, and communication as the most important skills for success in the workplace, and note deficiencies in key skills from workforce entrants coming in from every education level.⁷¹ Further, the New Commission on Skills for the American Workforce argues that creativity and innovation, as well as flexibility to respond to changes in the labor market, will be particularly critical skills as new workers try to compete in a global economy where high-skilled jobs are being outsourced to other countries.⁷²

IMPLICATIONS FOR CTE

The educational context for CTE suggests that better strategies are needed to support students’ academic achievement and persistence at the K–12 level, adult schools, and in community colleges and universities, and that all students will need a variety of workplace skills that are currently not taught in traditional academic programs. A strengthened system of career technical education can respond to these needs. CTE can

68 Jenkins, D. Workforce Strategy Center. (2006). *Career Pathways: Aligning Public Resources to Support Individual and Regional Economic Advancement in the Knowledge Economy*. Brooklyn, NY.

69 U.S. Census Bureau. (2007, March). *Annual Social and Economic Supplement, Current Population Survey 2006*. Washington, DC.

70 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.

71 Ibid.

72 National Center on Education and the Economy, op. cit.

engage and motivate students who are at risk of dropping out of high school, as well as support and enhance learning for all students. It is important not only for older high school students who may be at risk of dropping out in the eleventh and twelfth grades, or for those preparing for graduation and postsecondary education, training, or work, but also for younger high school students who are at risk of dropping out during their transitional ninth grade year, as they seek to find their place and feel competent in larger schools, with new sets of peers and with increasing academic pressures. It can prepare all students for entry to postsecondary education and careers, laying a foundation that allows students multiple options, with paths directly to work, to the community college system, or directly to four-year institutions – all as stepping stones to lifelong learning and ongoing career development. It can promote success and persistence in community college and university by providing focus, motivation, support, tangible skills, academic competencies, and critical thinking skills. Lastly, CTE offers opportunities to develop the full range of workplace skills that adults need to succeed over their lifetimes.

Policy Context

The policy context for this plan is shaped by a number of key workforce development and educational initiatives implemented by the federal government, as well as by state initiatives designed to meet the particular needs of California.

KEY FEDERAL POLICIES

Federal initiatives pertinent to this plan include the U.S. Department of Education Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins), the U.S. Department of Labor Workforce Investment Act (WIA), and the U.S. Department of Education No Child Left Behind Act (NCLB).

[THE CARL D. PERKINS CAREER AND TECHNICAL EDUCATION IMPROVEMENT ACT OF 2006](#)

The federal [Carl D. Perkins Career and Technical Education Improvement Act of 2006 \(Perkins IV\)](#), reauthorizing the Carl D. Perkins Vocational and Technical Education Act of 1998 (Perkins III), provides approximately \$140 million annually in funding to improve California's career technical education programs, integrate academic and career technical instruction, and serve special populations. The new act is intended to provide increased focus on the academic achievement of CTE students, strengthen the connections between secondary and postsecondary education, and improve state and local accountability.⁷³ In order to gain eligibility for federal funding under the Act, states are required to submit

73 U.S. Department of Education, Office of Vocational and Adult Education. Retrieved November 30, 2007 from <http://www.ed.gov/about/offices/list/ovae/pi/reauth/perkins.html>

state plans, which are intended to describe all of their CTE activities and how the Perkins funding will enhance these efforts.

WORKFORCE INVESTMENT ACT

The federal Workforce Investment Act (WIA), enacted in 1998, requires states to carry out a range of workforce development activities, such as training and tutoring, through statewide and local “Workforce Investment Boards,” to benefit job seekers and dislocated workers, as well as youth, veterans, persons with disabilities, and employers. The purpose of these activities is to increase the employment, retention, and earnings of participants. WIA programs are intended to increase occupational skills attainment by participants, and, as a result, improve the quality of the workforce, reduce welfare dependency, and enhance the productivity and competitiveness of the nation.⁷⁴

NO CHILD LEFT BEHIND

The No Child Left Behind Act of 2001 (NCLB) reauthorized the Elementary and Secondary Education Act (ESEA), which aims to improve the performance of primary and secondary schools, and is based on four principles: accountability for results, more choices for parents, greater local control and flexibility, and an emphasis on doing what works based on scientific research. NCLB requires that teachers be “highly qualified” as defined by the law, that progress of all students be measured annually for math and reading, that teaching strategies are based on scientifically based research, and that schools identified as “needing improvement” will offer eligible students supplemental educational services or allow them to transfer to better performing schools.⁷⁵

Perkins-funded activities must be aligned with both WIA, for the purpose of leveraging workforce development resources, and with NCLB, for the purpose of promoting the academic rigor of CTE programs. Alignment with WIA occurs through coordination of planning and implementation efforts; alignment with NCLB occurs through the implementation of the same accountability measures for academic achievement in Perkins as is used to measure states’ “adequate yearly progress” – in California, proficiency on the California High School Exit Exam.

74 Workforce Investment Act. <http://waysandmeans.house.gov/media/pdf/greenbook2003/WIA.pdf>

75 Introduction, Overview, No Child Left Behind. (2007). U.S. Department of Education. Retrieved on July 15, 2007, from <http://www.ed.gov/nclb/overview/intro/edpicks.jhtml?src=ln>

KEY STATE POLICIES

Workforce development and educational initiatives in California are inextricably linked – both working toward the common goal of ensuring individuals' economic security and career fulfillment.

WORKFORCE DEVELOPMENT INITIATIVES

State-level initiatives have paralleled federal initiatives. In 1993, legislation was passed in California to promote economic development strategic planning. A bipartisan California Economic Strategy Panel was created to develop an overall economic vision and strategy to guide public policy in shaping a prosperous future for California. The panel examined regional patterns of employment as well as opportunities for growth and expansion in specific industry sectors. In its 1996 report, *Collaborating to Compete in the New Economy, An Economic Strategy for California*, the Panel articulated its primary recommendation for sustaining the new economy: Improve the preparation of the workforce. Doing so required "...the development and implementation of a new policy framework for a competitive and coherent workforce preparation system that is consistent with the new economy and that supports emerging clusters."

Regional Workforce Preparation and Economic Development Act (RWPEDA). One of the outcomes of the Panel's report was the enactment in 1998 of the Regional Workforce Preparation and Economic Development Act (RWPEDA), for the primary purpose of forging a collaboration among K–12, postsecondary, health and human services, and trade and commerce agencies to create a coherent system of workforce preparation, linking education and training with economic development. This work resulted in the recommended policy framework for workforce development, *California Workforce Development: A Policy Framework for Economic Growth*, which laid the foundation for ongoing collaborative efforts.

California Regional Economies Project. More recently, the California Economic Strategies Panel spearheaded the California Regional Economies Project to better understand regional differences, gain insight into how the various regions and economic sectors interrelate with each other, and, most critically, identify regional "clusters of opportunity"⁷⁶ for potential economic and workforce growth. The project also monitors how change in one region affects other regions and the state as a whole. This is

76 "Clusters of opportunity" are sectors of the economy identified by growth in one or more areas: value, jobs or wages. California Regional Economies Project Clusters of Opportunity User Guide October 2006, retrieved November 30, 2007 from <http://www.labor.ca.gov/panel/pdf/Clusters%20of%20Opportunity%20Methodology%20Guide.pdf>

particularly important given the size and diversity of the state, its resources, population variables, transportation corridors, and rate of change.

This research-focused project is sponsored by the California Workforce Investment Board of the Labor and Workforce Development Agency. Other partners include the Labor Market Information Division of the California Employment Development Department, which provides the employment and occupational data used by the Project, and the California Community College Chancellor's Office, which sponsors training workshops.

Senate Bill (SB) 293: Workforce Training Act. Beyond laying the groundwork for needed research and monitoring of regional economies and industry-specific developments, RWPEDA and the policy framework laid the groundwork for ongoing collaboration in the implementation of workforce development efforts. In September 2006, the Governor signed Senate Bill (SB) 293: Workforce Training Act, replacing the Family Economic Security Act in the California Unemployment Insurance Code with provisions that generally implement the Workforce Investment Act (WIA) of 1998 in California. SB 293 took effect on January 1, 2007. A majority of the provisions in SB 293 are taken from the federal WIA, but the act also includes new, unique California provisions, which will require substantive changes in the workforce system. One of these is the requirement that the California Workforce Investment Board create a strategic workforce plan for the state. The state plan is described in SB 293 as a strategic plan for the entire workforce system, and is intended to serve as a framework for the Strategic Two-Year Plan for the WIA. It will also serve as a framework for the development of workforce policy and fiscal investment, and for the operation of California's labor exchange, workforce education, and training programs.⁷⁷

CAREER TECHNICAL EDUCATIONAL INITIATIVES

Consistent with workforce development policies aimed at strengthening California's labor force and economy, policymakers in California have renewed their commitment to CTE. In the educational arena, particularly at the K–12 level, the focus of recent policy initiatives is not only on ensuring a highly qualified workforce for existing and emerging industries, but ensuring also that students have the academic, employability, and career management skills they will need to realize their personal goals. Through legislation and budget initiatives, policymakers are addressing such issues as the need for high standards in CTE, the need for state-of-the-art facilities, the need for seamless pathways from secondary to postsecondary education, and the shortage of qualified CTE teachers and counselors, among others. Below is a brief synopsis of a few key initiatives.

77 California Work Force Investment Board, SB 293. (2007). California Community Colleges Chancellor's Office. Retrieved on July 31, 2007, from <http://www.calwia.org/sb293/index.cfm>

Assembly Bill 1412 and Senate Bill 1934: The California Career Technical Education Model Curriculum Standards and Framework, Grades Seven Through Twelve. The 2002 Assembly Bill 1412 and Senate Bill 1934 mandated that a Career and Technical Education (CTE) Advisory Group oversee development of the CTE Model Curriculum Standards and Framework, as had previously been developed for the core academic subject areas and the arts. Adopted by the State Board of Education in May 2005, the resulting California Career Technical Education Model Curriculum Standards, Grades Seven Through Twelve, integrate California's academic content standards with industry-specific knowledge and skills in order to prepare students both for direct entry into the workplace and for postsecondary education. The standards emphasize 21st century labor market realities, flexibility and adaptability to local CTE conditions, and increased rigor in the CTE system.

The CTE Curriculum Standards are organized into 15 industry sectors, or groupings, of interrelated occupations and broad industries. Each sector has two or more career pathways, which are a coherent sequence of rigorous academic and technical courses that allow students to apply academics and develop technical skills in a curricular area. Career pathways are intended to prepare students for successful completion of state academic and technical standards and more advanced postsecondary coursework related to the career in which they are interested. Identified with industry input, the 15 industry sectors are:

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

The CTE Curriculum Framework for California Public Schools, Grades Seven Through Twelve, provides guidance for implementing the CTE Model Curriculum Standards. It provides context for the content laid out in the standards, and discussion of best practices and important issues in implementation. The Framework was approved in January 2007.

Proposition 1D: Kindergarten–University Public Education Facilities Bond Act of 2006. In November 2006, the voters of the State of California passed a \$10.4 billion school facilities bond that for the first time included a significant share of funds (\$500 million) for building or modernizing Career Technical Education facilities located within comprehensive high schools. It also allowed for the purchase of CTE equipment.

The Governor's CTE Initiative/Senate Bill 70: The Economic Development and Career Technical Education Reform Initiative. Governor Arnold Schwarzenegger has brought increased visibility to CTE over the past year through budget initiatives and statewide policy discussions. In the May revision of the Governor's 2008 budget, the Governor proposed "substantial ongoing and new support for the expansion of CTE and teachers and counselors to ensure that the many students who directly enter the workforce are educated and prepared to succeed."⁷⁸ In March 2007, the Governor hosted the state's first ever CTE summit, bringing together education, business, labor, foundation, and political leaders in an effort to "strategize how CTE can maintain California's competitive edge in the global marketplace." In his remarks opening the summit, the Governor called this the beginning of a dialogue that would expand CTE, with a goal of moving to a place where CTE is seen as an equal option to a four-year college degree.⁷⁹

Consistent with his commitment, the Governor's 2005–06 budget called for expanded CTE opportunities and improved linkages between public schools and community colleges. Enacted as Senate Bill 70: The Economic Development and Career Technical Education Reform Initiative, the overall goal of these funds is to strengthen California's workforce development efforts by linking the state's investment in economic development with its investment in public education and other services.⁸⁰ Through Senate Bill 70, funding will therefore be used for:

- » "Quick Start" Partnerships, which will enhance linkages and pathways between secondary schools and selected economic and workforce development initiatives in community colleges.
- » Projects that will grow program capacity and infrastructure.
- » Projects that will strengthen Career Technical Education sectors at secondary schools.

78 California Office of the Governor. (2007, May). *Revised Budget Summary, K–12 Education, Program Enhancements and Other Budget Adjustments*. Sacramento, CA.

79 Governor's Remarks at CTE Summit. (2007, March). Office of the Governor. Retrieved on March 13, 2007, from <http://gov.ca.gov/index.php?/print-version/speech/5622/>

80 Economic Development and Career Technical Education Reform Implementation Strategy for Senate Bill 70 (Scott) (2005, October). California Community Colleges Chancellor's Office. Retrieved on August 2, 2007, from <http://www.cccco.edu/divisions/esed/sb70/implementation.doc>

Portions of the funds will be used for community and regional consortium-based projects that bring together economic development initiatives and consortia composed of community colleges, high schools, and ROCs. Twenty percent of the funds (\$4 million) will be used to develop regional articulation councils with the charge of aligning seamless, nonredundant education and training in California. Another 12.5 percent of the funds (\$2.5 million) are targeted for strengthening existing CTE sectors. Middle school career exploration projects are allocating 7.5 percent of the funding (\$1.5 million). The remaining 6 percent of the funds (\$1.2 million) are targeted at critical professional development and capacity-building needs.⁸¹

Assembly Bill 2448 (Hancock): Regional Occupational Centers and Programs. AB 2448, signed by the Governor on September 28, 2006, redefines the role of ROCs in the CTE delivery system. The bill sets average daily attendance (ADA) limits on services to adult learners through ROCs, implements several recommendations by the Legislative Analyst's Office to refocus ROC services on high school students and ensure that courses are part of occupational course sequences, and makes various modifications to ROCs.⁸²

Assembly Bill 1802: The Middle and High School Supplemental Counseling Program. Among its provisions, this education finance bill establishes the Supplemental School Counseling Program (\$200 million) and requires the governing board of a school district that maintains any of grades seven through twelve to adopt a counseling program that includes a provision for a counselor to meet with each student to review the student's academic and department records and explain his or her educational options, the coursework and academic progress needed for satisfactory completion of middle or high school, and the availability of career guidance activities. The educational options explained at the meeting may include CTE programs, including ROCs.⁸³

Senate Bill 52: Teacher Credentialing: Career Technical Education. A very important component in the efforts to rebuild and expand CTE opportunities is ensuring pupils have qualified instructors teaching CTE courses. Signed by the Governor in October 2007, SB 52 renames the designated subjects vocational education teaching credential the designated subjects preliminary career technical education teaching credential, streamlines and aligns the "designated subjects" to the 15 industry sectors established in the California CTE Model Curriculum Standards and Framework, and limits the barriers to part-time

81 Chancellor's Office California Community Colleges. (2005). *Request for Applications of New Grant Awards Instructions, Specification, Terms and Conditions Technical Assistance Center for Career Pathways and Work-Based Learning FY 2005-06*. Sacramento, CA.

82 AB 2448. (2006). California Legislative Council. Retrieved on September 17, 2006, from http://www.leginfo.ca.gov/pub/bill/asm/ab_2401-2450/ab_2448_bill_20060915_enrolled.pdf

83 AB 1802. (2006). California Legislative Council. Retrieved on September 17, 2006, from http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_1801-1850/ab_1802_bill_20060706_enrolled.pdf

service, thus facilitating the recruitment of interested individuals, such as industry representatives, as part-time instructors.

IMPLICATIONS FOR CTE

This CTE plan builds on a broad and deep foundation of both federal and state policies that, over the last ten years, have all increasingly emphasized the alignment of efforts toward the common goal of ensuring both individual success and economic vitality.

The current plan, with its vision for a statewide CTE system and its focus on the Carl D. Perkins funding, comes at a time of great interest in CTE – a time of tremendous opportunity. California and the nation are facing a “perfect storm” as economic, demographic, and educational forces create a potential shortage of skills that threaten both the state’s economy and individuals’ economic security.⁸⁴ Global markets and international competition are creating pressure to develop a highly skilled “knowledge” workforce. In addition, many “unexportable” well-paying technical jobs are going unfilled. With the imminent retirement of baby boomers, and lower levels of education and skills in prospective replacement workers, industry and policymakers are calling for significant improvements in education and CTE – including close alignment of education with workforce and economic development efforts – to maintain global competitiveness and individual economic stability.⁸⁵ California’s Governor and Legislature are looking to CTE to help the state address these issues by keeping students engaged in secondary and postsecondary education and preparing students at all stages for ongoing education, employment, and long-term career success.

Given these heightened expectations, resources must be allocated and targeted to the K–12, adult school, and community college systems in ways that meet the priorities of the state and economy. Specifically, support for strategic planning, leadership, and implementation is necessary for CTE to rise to California’s challenges and seize the opportunities offered.

84 Educational Testing Service. (2007). *America’s Perfect Storm: Three Forces Changing Our Nation’s Future*. Princeton, NJ.

85 *Global Engagement: How Americans Can Win and Prosper in the Worldwide Economy*. (2006). U.S. Chamber of Commerce. Retrieved on July 15, 2007, from http://www.uschamber.com/NR/rdonlyres/e37qbx3vp6opk4h7br5a5dthq37ou4xd6p55hzxerdmmy7byta5ggw6a4c3jz2gadlaabbiyskvn4vlfdu3fxg2csa/Global+Engagement_rdc.pdf

CHAPTER THREE

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

California is at an important crossroads as it continues to strengthen and expand the delivery of CTE and the skills of the California workforce. New demands from the 21st century workplace and rapid globalization, shifts in the state's demographics including immigration and baby boom retirements, and pressures to improve outcomes for K–12, adult school, and community college students, are creating a new urgency for increasing the pace of CTE reform begun in previous decades. Education must keep pace with the realities of a changing world.

Many new priorities are reflected in the new Carl D. Perkins Career and Technical Education Improvement Act of 2006, as described in the introduction to this document. In California, given vast regional differences and powerful economic and demographic forces, completion of high school and ongoing training or education has become essential to individuals' economic security and quality of life. With support from the current governor and many other policymakers, California intends to leverage Perkins-funded efforts to improve the entire CTE system – to move toward a more coherent, world-class delivery system that serves as the primary engine for the state's workforce and economic development, and as a key vehicle to engage students in learning.

The state's shifting economy has created a need for new knowledge, skills, and attitudes in the workplace. Employers view skills such as communication, critical thinking, problem solving, and teamwork as essential prerequisites for work. They also want employees with basic academic knowledge and skills, a high school or college degree, and appropriate levels of training or certification in their respective industries. Equally important, individuals must be self-motivated and able to continuously learn and manage their careers in response to ongoing and rapid change.

These skills are essential to success for all working adults, be they artists, scientists, nurses, or carpenters. They are, further, essential to society in addressing the challenges posed not only by a changing economy, but a changing world. CTE can therefore no longer continue to exist as a separate educational alternative; it must be woven into the very fabric of our educational delivery system. CTE – with its focus on rigorous and relevant content, hands-on learning, supportive relationships, and demonstrated outcomes – can set the standard for the kind of challenging, engaging, student-centered instruction that we know is required for students of all ages to succeed. Integrated thoughtfully with the arts, humanities, and sciences, and guided by basic principles of youth and adult development, CTE can complement and enhance learning in all disciplines, reinforcing rather than