



The Nexus Between Postsecondary Education and Workforce Development: Status Report for Second Policy Brief

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Introduction

This working paper serves as a preview of the second in a series of four policy briefs that will explore the nexus between postsecondary education and workforce development. The completed policy brief will focus on a number of questions about California's workforce and examine economic and workforce trends in California, including projected occupational growth and the level of education needed for entry into various occupations.

This policy brief will be followed by a third paper exploring what the postsecondary education systems are doing to address the state's workforce needs. The fourth and final policy brief will examine implications for education and future workforce needs.

The Workforce Nexus Technical Advisory Committee (TAC) met on August 2, 2006, to discuss staff recommendations for a framework for the second policy brief and to help identify data sources. In attendance were representatives from the California Workforce Investment Board, the California Workforce Association, the U.S. Bureau of Labor Statistics, the California Department of Rehabilitation, the California Department of Education, the National Association of Women Business Owners, the University of California, the California Community Colleges, and the Association of Independent California Colleges & Universities.

Framework for Second Policy Brief

Based on discussions at the TAC meeting, this framework will focus on the following five aspects:

I. California Workforce Trends and Changes

- Which occupations are projected to have the largest increase (or decrease) in the number of employees?
- Which occupations are experiencing the fastest (or slowest) rate of growth?
- What level of educational training is required for jobs in the largest and fastest growing occupations? What portion of these jobs will require postsecondary educational training?
- What is the median hourly wage for these occupations?

II. Sets of Skills

- What skills are needed to produce a California workforce that can support a healthy state economy that is competitive in the global economy?
- Is there a match between skills and knowledge of the current workforce and those needed in the future?

III. Training in the Workforce

- How are employers addressing expected skill shortages due to changes in the economy and technology? What challenges impede the state's ability to retain and recruit a high-quality, diverse workforce?

- Once employees are hired, what on-the-job training should be available in order to retain them? Does postsecondary education play a role in this?

IV. Population Fluctuations

- In projecting workforce demand and supply, how are fluctuations in the population accounted for, such as people who are educated in California but work in another state or country, or people who were educated elsewhere but work in California?
- How are workforce supply, demand, and preparation issues examined in light of California's changing demographics: increasing numbers of immigrants, aging workforce, ethnic/cultural diversity etc.?

V. National Workforce Trends

- Do California employment projections mirror what is happening in the nation?
- What is the importance of the national workforce picture to California's economic health?

Data Analysis

Using the occupational employment projections from the California Employment Development Department's Labor Market Information Division (LMID), staff intends to ascertain which (and how many) jobs are projected to grow, and which (and how many) jobs require postsecondary educational training.

The occupational employment projections from EDD are used by staff as the primary source of information for estimating job opportunities, for anticipating workforce needs in order to develop education/training programs, and for gaining an insight into future workforce needs and employment trends. When this analysis began, the figures from LMID contained projections for 2002-2012. A short time before this report was finalized, LMID released a new set of projections for 2004-2014. The examples given in this status report were drawn from the first set of projections; the updated projections will be used by staff in its second paper.

Numerical and Percent Change

Projections are calculated with both *Numerical Change* and *Percent Change* of jobs. However, one must be cautious when looking only at *Percent Change*. This figure can be misleading because a large percentage change does not necessarily equate to a large change in the number of jobs. For instance, an occupational category may show ten people in the base year and an increase of five in the forecast year. While this is a 50% increase (a seemingly large increase), in reality, only five jobs were added. In the comparison of the job growth lists, the *Fastest/Slowest Growth* is used to refer to *Percent Change*, and the *Largest/Smallest Growth* used to refer to *Numerical Change*. In order to precisely capture the workforce needs that will affect the most people, more attention should be paid to *Numerical Change* than *Percent Change*.

Major Growth Occupations

Largest Growth

A preliminary analysis of the earlier projections shows that of the new jobs, the 50 *largest* growing occupations will create over half of the state's job growth. Of the ten jobs with the greatest numerical change (see Display 1), three require some postsecondary education training. The projection indicates a significant need for registered nurses, business operations specialists, and general and operations managers. However, the projections also show a higher demand for cashiers, food service workers, and other occupations which require only on-the-job training.

Display 1: California Occupations with Largest Projected Growth, 2002 – 2012

Occupational Titles	Annual Average Employment		Numerical Change	Percent Change	Median Hourly Wage [1]	Education & Training Levels
	2002	2012				
Retail Salespersons	435,400	513,200	77,800	17.90%	\$9.45	Short-Term OJT
Combined Food Preparation and Serving Workers, Including Fast Food	215,100	277,300	62,200	28.90%	\$7.79	Short-Term OJT
Cashiers	358,800	420,700	61,900	17.30%	\$8.59	Short-Term OJT
Registered Nurses	201,600	258,400	56,800	28.20%	\$30.24	Associate Degree
Waiters and Waitresses	214,000	264,900	50,900	23.80%	\$7.44	Short-Term OJT
Business Operations Specialists, All Other	173,300	221,200	47,900	27.60%	\$25.87	BA/BS Degree
Customer Service Representatives	197,600	244,900	47,300	23.90%	\$14.43	Moderate-Term OJT
Office Clerks, General	400,300	446,500	46,200	11.50%	\$12.17	Short-Term OJT
General and Operations Managers	224,100	267,000	42,900	19.10%	\$44.47	BA/BS + Experience
Teacher Assistants	179,600	222,300	42,700	23.80%	[2]	Short-Term OJT

Fastest Growth

Among the top ten *fastest* growing occupations (see Display 2), half will require postsecondary education resulting from the growth in high-tech industry, health care, and some categories of postsecondary instruction. However, fewer than half of those jobs requiring postsecondary education will generate a large number of new openings. For instance, the need for dental assistants, an occupation which requires only moderate-term on-the-job training, will generate far more jobs than the need for dental hygienists, which requires an associate degree.

Display 2: California Occupations with Fastest Projected Growth, 2002 – 2012

Occupational Titles	Annual Average Employment		Percent Change	Numerical Change	Median Hourly Wage [1]	Education & Training Levels
	2002	2012				
Physical Therapist Aides	4,200	6,800	61.9%	2,600	\$10.80	Short-Term OJT
Dental Hygienists	16,600	26,200	57.8%	9,600	\$40.86	Associate Degree
Dental Assistants	42,700	67,100	57.1%	24,400	\$16.00	Moderate-Term OJT
Tapers	9,200	14,400	56.5%	5,200	\$21.06	Moderate-Term OJT
Drywall and Ceiling Tile Installers	26,800	41,800	56.0%	15,000	\$20.24	Moderate-Term OJT
Tile and Marble Setters	8,600	13,400	55.8%	4,800	\$19.19	Long-Term OJT
Network Systems and Data Communications Analysts	20,300	31,600	55.7%	11,300	\$31.74	BA/BS Degree
Physical Therapist Assistants	3,900	6,000	53.8%	2,100	\$21.30	Associate Degree
Occupational Therapist Assistants	1,300	2,000	53.8%	700	\$21.05	Associate Degree
Philosophy and Religion Teachers, Postsecondary	1,400	2,100	50.0%	700	[2]	Doctoral Degree

[1] Median Hourly Wage is the estimated 50th percentile of the distribution of wages; 50 percent of workers in an occupation earn wages below, and 50 percent earn wages above.

[2] For some occupations, workers may not work full-time all year-round. For these occupations it is not feasible to calculate an hourly wage.

Annual Job Openings

Projections indicate that California will have approximately 627,000 new job openings each year until the year 2012. Display 3 shows the estimated annual job openings in the state by education and training level from 2002 to 2012. About 25% of these new job openings will require a bachelor's degree or higher.

Display 3: California Annual Job Openings, 2002 – 2012

Education and Training Levels	Number of Jobs (2002)	Estimated Annual Job Openings	
Graduate or high level	458,000	24,000	3.80%
Bachelor's degree	2,730,000	132,000	21.00%
Associate degree or vocational qualification	1,055,000	50,000	8.10%
Experience or on-the-job training	10,101,000	421,000	67.20%
Total jobs	14,343,000	627,000	100%

Source: Staff calculations based on EDD projections.

Next Steps

The Employment Development Department (EDD) has recently issued new projections for the years 2004-2014. Staff will review and expand the analyses in this paper using these new projections, which will include updated job categories as well as a number of new job categories, such as self-employed and private household employees. The final report will include a re-aggregation of occupations with similar skill requirements to allow for a more accurate portrayal of occupations with the fastest and largest growth as well as a better estimate of the needs for California workforce.

Based on conversations with members of the Workforce Technical Advisory Committee, Commission staff will identify and conduct interviews with leaders in key industries and business sectors to gather information on how they think higher education can better prepare the state's current and future workforce. Questions will relate to the skills employers want to see, especially in postsecondary graduates, and their ideas about how employers might better partner with higher education to meet workforce needs. These interviews will contribute to a more in-depth understanding of how employers view what California's postsecondary education systems are doing to address actual workforce needs through the curricula and training they offer.

To better understand the changes that have already taken place and those that are anticipated for California's workforce in the future, staff will review recent research literature on trends in the state's economy and workforce needs, as well as reports on national and international economic trends. We will look for comparisons made by economic and workforce experts between California's workforce and that of similar states, as well as comparisons of California with national trends and trends in other leading industrialized nations. In making these comparisons, staff hopes to provide data that can help postsecondary institutions connect their own planning to workforce needs.

Fully understanding the nexus between postsecondary education and the workforce will require in-depth study in a number of areas and of a number of questions that are beyond the scope of this series of policy briefs. Also, there are some limitations in data sources for some of the questions the Commission staff considers important to that understanding. However, it is anticipated that the Commission will continue to look at the nexus between postsecondary education and the workforce on a periodic basis subsequent to this current study, and these issues should remain on the table and be considered for Commission research and analysis in the future.