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The Degree Gap: Are University Graduates Making Full Use of Their Degrees?

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by Mallory Angeli and Ryan Fuller

California's degree gap is a growing concern. According to recent reports and news articles comparing the number of degrees awarded with the jobs expected in the coming decade, California will not have enough university graduates to meet the needs of the labor market. Previous work by CPEC showed significant shortages of graduates in some high-demand technical fields such as nursing and computer science.

The solution is not as simple as increasing production of degrees. Many people with university degrees are in jobs where they may not be making full use of their education. Data from the 2007 American Community Survey shows that California has nearly half a million university graduates working in occupations that are not traditionally regarded as requiring a bachelor's degree. Nearly 50,000 work as secretaries and administrative assistants and 100,000 are in other clerical jobs. About 40,000 are in lower-level jobs in health care. Many thousands more are working in retail, food service, and manufacturing. More details are on page 3.

Breaking down the data for different age groups shows that this problem affects mid-career workers, not just recent graduates who may be establishing themselves in careers. Data for earlier years shows that these patterns of employment have existed for at least a decade. This apparent underemployment is a concern because a university education has become increasingly expensive and graduates often need the income from a well-paid profession to repay student loans. Employment of university graduates in low-skill jobs may be contributing to a shortage of skilled professional workers, limiting economic growth.

Wage Differences

Wage levels are an indicator of the value of a degree in the labor market. University graduates generally earn much more than workers with less education, and these wage differences are rising. In 2007, the wage premium for a bachelor's degree — the difference between median earnings of mid-career workers with bachelor's degrees and workers with some college or an associate degree — was 44%. This wage premium has doubled since 1980.

The picture is different for university graduates in non-degree occupations. In 1990, there was no wage premium — university graduates in non-degree occupations earned about the same as those with just some college. The wage premium picked up in the 1990s, but started to fall in 2005 and is now back to about 3%. It seems that university graduates who do not take a career path that leads to high-skilled professional work may see very little return from their degree in the labor market.

California Workers with Bachelor's Degrees

	Total workers	In non-degree occupations	
2000	2,060,000	340,000	16%
2005	2,300,000	410,000	18%
2007	2,430,000	450,000	18%

Workers aged 25 to 65. Data from the 2007 American Community Survey.

Non-degree occupations are occupations classified by the U.S. Bureau of Labor Statistics as requiring only on-the-job training, a vocational certificate, or some college education.

In some non-degree occupations, university graduates do better than workers without a degree. In 2007, median wages for mid-career secretaries and office clerks with a bachelor's were 13–14% higher than those with some college or an associate degree. This indicates that a university education is of value in the workplace, even though it may not be thought of as a gateway to the occupation.

But for many occupations, there is little or no premium for a university degree. California has 16,000 university graduates working as bookkeepers, but bookkeepers with bachelor's degrees do not earn any more than bookkeepers with a high school education. Engineering technicians with bachelor's degrees earn much less than engineering technicians with some college.

What Does This All Mean?

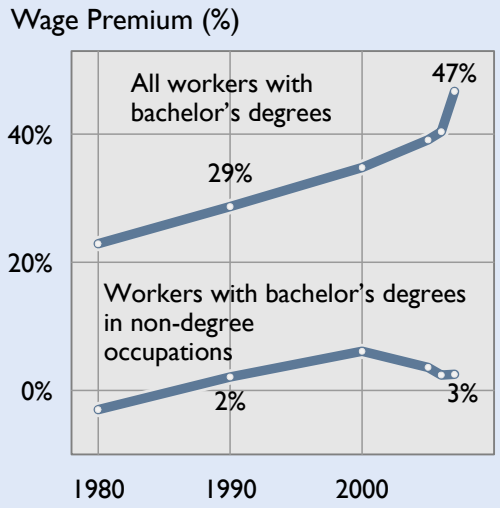
One of the reasons to have a publicly funded higher education system is to give all Californians the opportunity for an education that prepares them for a rewarding career. These job figures show that many university graduates are not gaining much monetary benefit from their degrees. Some might have personal reasons for choosing work that does not make full use of their education, but this pattern of employment raises many questions about a possible lack of alignment of degrees to workforce needs.

There may be factors limiting movement of some university graduates into more skilled, higher-paid occupations. The wage premium for a bachelor's is growing, but a steady 16–18% of graduates are working in non-degree occupations. Higher wages are apparently not drawing these workers into better-paid occupations.

It is important that California have the capacity to produce enough university graduates to fill workforce demands in the next decade and that people who have had the time and expense of a university education see some return from this investment.

Wage Premiums

The wage premium for a university degree has grown steadily over the last few decades. But the benefit of a degree is much smaller for university graduates working in non-degree occupations.



The wage premium is the percent difference in median earnings of workers with a bachelor's degree and workers with some college or an associate degree.

2007 Earnings

	Median earnings for mid-career workers	
	All workers	Workers in non-degree occupations
Workers with a bachelor's degree	$66,000	$41,000
Workers with some college	$45,000	$40,000

Wages for full-time, year-round workers aged 30 to 50 who speak English well. Data from the American Community Survey and U.S. Census.

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Workers with Bachelor's Degrees in Non-Degree Occupations

	Total workers in occupation	With a bachelor's degree		Annual earnings for mid-career workers with …			Wage premium: Bachelor's degree compared with some college
		Number	%	High school	Some college	Bachelor's degree	
Office work							
Secretaries, admin. assistants	229,800	47,000	20%	$36,000	$40,000	$45,000	13%
Office clerks	104,900	19,700	19	30,000	35,000	40,000	14
Miscellaneous office workers	45,700	17,200	38	32,000	42,000	46,000	10
Bookkeepers, account clerks	109,700	15,700	14	33,000	37,000	33,000	-11
Receptionists	67,300	11,200	17	28,000	30,000	37,000	23
Data entry keyers	32,800	6,200	19	30,000	32,000	40,000	25
Mail carriers	33,700	6,000	18	50,000	48,000	50,000	4
Clerks, office machine operators	35,800	5,300	15	28,500	33,000	40,000	21
Stock clerks, order fillers	76,600	5,200	7	30,000	34,000	40,000	18
Insurance processing clerks	22,400	5,000	22	35,000	42,000	48,000	14
Shipping and receiving clerks	62,500	4,200	7	29,000	32,000	40,000	25
Construction							
Construction foremen	95,600	8,800	9%	$56,000	$60,000	$65,000	8%
Carpenters	107,200	6,600	6	40,000	40,000	30,000	-25
Construction laborers	158,900	5,500	3	30,000	40,000	45,000	13
Electricians	61,000	5,300	9	45,000	60,000	40,000	-33
Other occupations							
Factory foremen	81,500	14,500	18%	$50,000	$60,000	$64,000	7%
Truck drivers, delivery drivers	274,000	14,100	5	40,000	44,000	39,500	-10
Cashiers	104,100	13,800	13	28,000	23,000	35,000	52
Security guards	71,500	11,100	16	27,000	40,000	50,000	25
Engineering technicians	41,000	9,300	23	41,500	60,000	49,000	-18
Janitors, building cleaners	168,900	8,700	5	24,500	35,000	29,000	-17
Automotive technicians	82,900	7,100	9	34,500	41,000	35,000	-15
Cooks	125,600	7,100	6	22,000	25,000	22,000	-12
Food service managers	39,100	5,900	15	22,000	36,000	32,000	-11
Maids, housekeepers	95,800	5,500	6	10,500	22,000	20,000	-9
Firefighters	28,000	5,300	19	80,000	98,000	90,000	-8
Licensed vocational nurses	34,800	4,700	14	42,000	48,000	59,000	23
Telecommunications installers	22,400	4,500	20	60,000	65,000	48,000	-26
Bailiffs, correctional officers	34,400	4,400	13	70,000	72,000	70,000	-3
Dental assistants	21,700	4,200	19	35,000	35,000	31,000	-11

Number of workers is all full-time, year-round workers aged 25 to 65. Mid-career workers are workers aged 30 to 50.

Next Steps

Previous CPEC work compared degree production with job openings in some high-demand technical fields such as nursing and computer science. This showed significant shortages of graduates in these fields. But for most occupations, there are less specific matches to degree disciplines. For example, a graduate with a degree in mathematics could work as a high school teacher, an actuary, or a software engineer. Liberal arts graduates can work in a wide variety of occupations.

In order to take a broader look at the relationship between degree production and labor market demand, CPEC has compiled data from a variety of labor agencies showing the match between degree disciplines and occupational fields. CPEC also has job projections from the U.S. Bureau of Labor Statistics and the state Employment Development Department. Staff plan to conduct an analysis combining this information with CPEC's degree data to assess whether California is producing enough educated workers to meet the demands of the labor market and to examine issues such as overproduction of degrees in some fields and underproduction in other fields.

Staff will also look at the way that wages vary between occupations and within occupations depending on educational level and how patterns of employment of university graduates have changed over the past few decades. An important question to be addressed is whether factors such as gender, ethnicity, language skills, and students' choices of degree major prevent university graduates from moving into high-demand, highly paid occupations.

English-speaking Ability Matters

Language ability is an important factor affecting earnings. Median earnings are less for university graduates who do not speak English well than for workers with some college who do speak English well.

Median Annual Earnings in 2007
Workers aged 30 to 50

Educational level	Speaks English well	Does not speak English well
High school	$35,000	$21,000
Some college	$45,000	$30,000
Bachelor's degree	$66,000	$40,000