

Relating Employment Projections to Education and Training

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Long-term demand projections

- Labor force size and composition
 - By age, gender, and race/ethnicity
- Aggregate economy
 - Gross domestic product and its components
- Industry demand
 - Final demand, output, and employment
- Occupational demand
 - Employment
 - Job openings from growth and replacements

Issues

- What measures of “skills” make sense
 - ▶ For policy and strategic planning?
 - ▶ For career exploration and guidance?
- Formal educational attainment as a proxy for general skill level
- Occupation indirectly captures skills
 - ▶ Defined by tasks or activities performed
 - ▶ Occupational classifications may depict skill hierarchies

Issues

- Education needed in an occupation versus the education workers in the occupation have
- Multiple paths of entry to some occupations
 - ▶ Difficult to measure
 - ▶ Difficult to depict in summary information

The new U.S. approach

- Each occupation assigned a level in each of three categories:
 - ▶ Typical entry level education
 - ▶ Typical training needed to become fully qualified in the occupation
 - ▶ Work experience in a related occupation
- Show data on distribution of workers in the occupation by educational attainment

Education and training categories

Typical entry level education

Doctoral or professional degree

Master's degree

Bachelor's degree

Associate's degree

Postsecondary non-degree award

Some college no degree

High school diploma or equivalent

Less than high school

Typical Training Needed to Become Fully Qualified in the Occupation

Apprenticeship

Internship/ residency

Long-term on-the-job training

Moderate-term on-the-job training

Short-term on-the-job training

None

Previous Work Experience in a Related Occupation

More than 5 years

1 to 5 years

Less than 1 year

None

Assigning education and training categories

- Analysts research each occupation
- Use data from
 - ▶ American Community Survey, on education attainment of workers in the occupation
 - ▶ O*NET, on education and training requirements
- Information from industry and professional associations and experts
- On-line job banks for current hiring

Examples from the experimental data set

Occupation	Education and Training Categories			Educational attainment of workers 25 years and older, percent distributions, 2008 (1)						
	Typical entry level education	Previous work experience in a related occupation	Typical training needed to attain proficiency	Less than high school diploma	High school diploma or equivalent	Some college, no degree	Associate's degree	Bachelor's degree	Master's degree	Doctoral or professional degree
Computer and information systems managers	Bachelor's degree	More than 5 years	None	0.6	4.5	15.7	9.2	45.6	22.2	2.2
Budget analysts	Bachelor's degree	None	None	0.7	7.2	16.3	7.5	42.4	24.4	1.6
Computer programmers	Bachelor's degree	None	None	0.6	5.0	14.4	10.0	49.8	18.0	2.2
Civil engineers	Bachelor's degree	None	None	0.3	3.5	5.8	6.0	56.4	23.9	4.2
Occupational therapists	Master's degree	None	Internship/residency	0.2	0.5	0.9	8.6	55.5	31.1	3.2
Electricians	High school diploma or equivalent	None	Apprenticeship	9.0	40.1	30.4	12.9	6.4	0.9	0.4

(1) Based on 2006, 2007 and 2008 data from the American Community Survey data, U.S. Department of Commerce, Census Bureau.

Summarizing the results

Employment and projected job openings by education, training , and work experience categories of occupations								
Education, work experience, and on-the-job training	Employment				Change, 2010-20		Total job openings due to growth and replacement needs, 2010-20	
			Percent distribution					
	2010	2020	2010	2020	Number	Percent	Number	Percent
Typical entry-level education								
Total, all occupations	xxx,xxx	xxx,xxx	100.0	100.0	xx,xxx	100.0	xx,xxx	100.0
Doctoral or professional degree	x,xxx	x,xxx	x.X	x.X	x,xxx	x.X	x,xxx	x.X
Master's degree	x,xxx	x,xxx	x.X	x.X	x,xxx	x.X	x,xxx	x.X
Bachelor's degree	x,xxx	x,xxx	x.X	x.X	x,xxx	x.X	x,xxx	x.X
Associate's degree	x,xxx	x,xxx	x.X	x.X	x,xxx	x.X	x,xxx	x.X
Postsecondary non-degree award	x,xxx	x,xxx	x.X	x.X	x,xxx	x.X	x,xxx	x.X
Some college, no degree	x,xxx	x,xxx	x.X	x.X	x,xxx	x.X	x,xxx	x.X
High school diploma or equivalent	x,xxx	x,xxx	x.X	x.X	x,xxx	x.X	x,xxx	x.X
Less than high school	x,xxx	x,xxx	x.X	x.X	x,xxx	x.X	x,xxx	x.X

Summarizing the results

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Education, work experience, and on-the-job training	Employment				Change, 2010-20		Total job openings due to growth and replacement needs, 2010-20	
	Number		Percent distribution					
	2010	2020	2010	2020	Number	Percent	Number	Percent
Typical on-the-job training needed to attain competency								
Total, all occupations	xxx,xxx	xxx,xxx	100.0	100.0	xx,xxx	100.0	xx,xxx	100.0
Internship/ residency	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
Apprenticeship	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
Long-term on-the-job training	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
Moderate-term on-the-job training	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
Short-term on-the-job training	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
None	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
Previous work experience in a related occupation								
Total, all occupations	xxx,xxx	xxx,xxx	100.0	100.0	xx,xxx	100.0	xx,xxx	100.0
More than 5 years	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
1 to 5 years	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
Less than 1 year	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x
None	x,xxx	x,xxx	x.x	x.x	x,xxx	x.x	x,xxx	x.x

Watch for the new data

- Projections for 2010-2020 will be published February 1, 2012
 - <http://www.bls.gov/emp/home.htm>
- More information on the education and training categories
 - http://www.bls.gov/emp/ep_finaledtrain.htm

Contact Information

Thank you!

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