

Education & Training for the **Jobs** of the **Future**



Career pathways explained — there may be several ways to achieve your career goals.

The Utah Department of Workforce Services recently released statewide occupational employment projections for 2010 to 2020. Those seeking career guidance — students and other career changers — can use the projections as a guide to the preparation needed to enter an occupation. For each of the roughly 770 occupations included in these projections, there are educational and training categories that detail the preparation needed to enter and become competent in a specific occupation. Counselors, teachers and parents use this information to assist students and others who want to embark in a chosen occupation.

The education and training categories used in the projections were developed specifically by the U.S. Bureau of Labor Statistics (BLS) for people interested in career exploration, but they are also used extensively by those who need to make decisions with regard to human resource planning, business workforce investments and public policy and by others who want to know what the future demand may be for workers with various levels of education and training. For example, the fastest projected job growth, 32.1 percent, is among occupations with a master's degree as the typical entry-level education needed, while the largest number of projected new jobs, 133,815, is among occupations with

a high school diploma as the typical entry-level education needed.

The New Education and Training Categories

Some occupations have a single distinct path for entry and achieving competency, while others have several paths. Whatever paths there are for an occupation, BLS has found that career pathways can be categorized using three dimensions: (1) education, (2) work experience in a related occupation and (3) typical on-the-job training. The first two dimensions, education and work experience, are pre-employment requirements usually needed to enter an occupation, while on-the-job training generally occurs once someone is initially employed.

Of the two pre-employment dimensions, work experience most often applies to first-line supervisors or managers who need to have experience in the activities they are supervising. There are some non-managerial occupations where work experience in a related field is needed. In Utah, about 17 percent of all jobs are in occupations that require work experience in a related area.

The level of education needed to enter an occupation is well-defined for some and not so clear-cut for others. For example, to become a lawyer you need to graduate from law school after completing a bachelor's degree. Paralegals, in contrast, may enter the occupation with one of three different levels

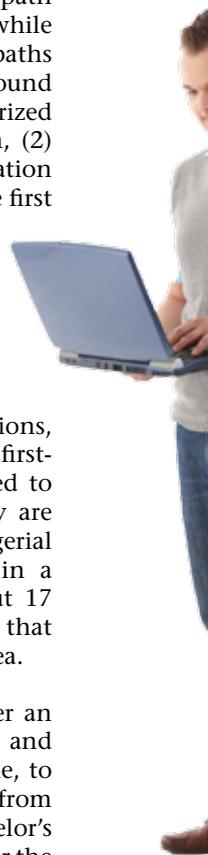


Table 1: Utah Employment and Annual Job Openings
by Education, Work Experience and On-the-Job Training Category
2010–2020

Education, Work Experience and On-the-Job (OJT) Training	Employment				Employment Change 2010–2020		Annual Job Openings Due to Growth and Replacement Needs 2010 – 2020		Number of Occupations	
	Number		Percent Distribution				Number	Percent	Number	Percent
	2010	2020	2010	2020	Number	Percent				
TYPICAL EDUCATION NEEDED FOR ENTRY										
Total All Occupations	1,273,451	1,581,297	100%	100%	307,846	24.2%	61,036	100%	770	100%
Doctoral or professional degree	30,869	39,584	2.4%	2.5%	8,715	28.2%	1,470	2.4%	61	7.9%
Master's degree	18,738	24,753	1.5%	1.6%	6,015	32.1%	1,025	1.7%	34	4.4%
Bachelor's degree	195,440	248,674	15.3%	15.7%	53,234	27.2%	9,577	15.7%	152	19.7%
Associates degree	73,745	90,974	5.8%	5.8%	17,229	23.4%	3,140	5.1%	46	6.0%
Postsecondary non-degree award	54,741	69,060	4.3%	4.4%	14,319	26.2%	2,493	4.1%	41	5.3%
Some college, no degree	9,533	12,389	0.7%	0.8%	2,856	30.0%	549	0.9%	5	0.6%
High school diploma or equivalent	565,121	698,936	44.4%	44.2%	133,815	23.7%	26,131	42.8%	334	43.4%
Less than high school	325,264	396,927	25.5%	25.1%	71,663	22.0%	16,651	27.3%	97	12.6%
WORK EXPERIENCE IN A RELATED OCCUPATION										
Total All Occupations	1,273,451	1,581,297	100%	100%	307,846	24.2%	61,036	100%	770	100%
More than 5 years	34,104	41,185	2.7%	2.6%	7,081	20.8%	1,410	2.3%	17	2.2%
1 to 5 years	148,331	181,496	11.6%	11.5%	33,165	22.4%	6,442	10.6%	69	9.0%
Less than 1 year	28,523	35,068	2.2%	2.2%	6,545	22.9%	1,344	2.2%	11	1.4%
None	1,062,493	1,323,548	83.4%	83.7%	261,055	24.6%	51,840	84.9%	673	87.4%
TYPICAL ON-THE-JOB TRAINING										
Total All Occupations	1,273,451	1,581,297	100%	100%	307,846	24.2%	61,036	100%	770	100%
Internship/residency	40,788	52,110	3.2%	3.3%	11,322	27.8%	2,109	3.5%	31	4.0%
Apprenticeship	24,639	32,947	1.9%	2.1%	8,308	33.7%	1,424	2.3%	15	1.9%
Long-term OJT	64,420	80,064	5.1%	5.1%	15,644	24.3%	3,072	5.0%	68	8.8%
Moderate-term OJT	230,452	284,750	18.1%	18.0%	54,298	23.6%	10,477	17.2%	214	27.8%
Short-term OJT	535,707	657,406	42.1%	41.6%	121,699	22.7%	26,543	43.5%	172	22.3%
None	377,445	474,020	29.6%	30.0%	96,575	25.6%	17,411	28.5%	270	35.1%

Source: Utah Department of Workforce Services.

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cont.



The pathways that account for most of the projected employment are shown in Table 2.

of formal education: postsecondary non-degree award, an associate degree or a bachelor's degree.

For some occupations, education can be substituted for work experience and vice versa. Chefs and head cooks are a good example. Preparation to become a chef may be a formal degree from a culinary school with no prior work experience or through years of experience as a lower-level cook and advancing to become a head cook or chef.

The third dimension to a career pathway is on-the-job training, or OJT. Some OJT is needed for a person to become competent at performing an occupation in about 70 percent of all jobs in Utah. To be competent means that someone is qualified to perform the occupation independently. Most often, OJT is a postemployment activity received after being hired.

Apprenticeships, which are common in some construction occupations and internship or medical and teaching residences, are examples of OJT that must be successfully completed with appropriate state licensure or certification before entering an occupation.

Under the current BLS education and training pathways, there are eight education levels, four work experience categories and six OJT levels. The first column in Table 1 lists the various types of education and training there are under each of the three dimensions. Table 1 also provides the 2010 base year employment and the projected 2020 employment for each of the levels under the three different dimensions of education and training.

The Education and Training Assignments Represent a Typical Path

Each of 770 detailed Utah occupations receives an education, work experience and OJT assignment. While there are a possible 192 different combinations, all 770 occupations fall into 58 different assignments of education, experience

and OJT. The 58 occupational assignments for entry-level education, work experience in a related occupation and OJT represent the typical path to enter an occupation and become a competent performer. BLS has determined the "typical path" after reviewing and analyzing various data sources, qualitative information and public input from career counselors, human resource professionals and other interested parties. Although some occupations have more than one identifiable path, only one path — the one most prominent — is assigned as the typical path. Occupations that have multiple pathways for entry are discussed in narratives contained in the BLS Occupational Outlook Handbook.

Of the 58 typical paths assigned to detailed Utah occupations, the 15 pathways that account for most 2020 projected employment are presented in Table 2. These 15 pathways account for 88 percent of total 2020 employment and 79 percent of the detailed occupations.

Educational Attainment versus the Typical Pathway

The typical education and training pathway to enter and achieve competence for an occupation does not indicate the demand for workers by educational attainment. While the BLS assignments by occupation of a typical pathway are carefully determined, occupations generally have many workers with higher levels of educational attainment than the typical pathway would suggest.

For example the educational pathway for a registered nurse is an associate degree, but if we look at the educational attainment of registered nurses as reported in the 2010 American Community Survey, 55.9 percent of all registered nurses nationally have at least a bachelor's degree. The typical pathway to become a cashier is less than a high school diploma and short-

term, on-the-job training. However, 82.9 percent of cashiers report having at least a high school diploma and 16.4 percent have at least an associates degree.

When businesses make hiring, promotion or wage decisions, candidates with higher levels of education often have an advantage over other qualified, but less-educated individuals.

Conclusion

The BLS education and training categories provide information on how a job seeker or student can prepare to

enter an occupation and become a competent performer. Counselors, educators, human resource professionals and others use occupational projections and their pathways to better understand the preparation and training needs necessary for the workforce in the coming years. When the three dimensions of education and training are applied to Utah’s 2010 to 2020 employment projections, they show faster job growth in occupations where postsecondary education is needed for entry. For the various types of OJT, 2020 projected employment growth is fastest for apprenticeship and internship/residency occupations. ⓘ

Table 2: The 15 Pathways of Education, Work Experience and On-the-Job Training with the Highest 2020 Projected Employment

Education Needed for Entry	Work Experience in a Related Occupation	Typical On-the-job Training (OJT)	2020 Projected Employment	As a Percent of Total 2020 Employment	Number of Occupations with this Pathway
Doctoral or Professional Degree	None	None	28,159	1.8%	46
Bachelor's Degree	1–5 years	None	30,474	1.9%	25
Bachelor's Degree	None	Internship/Residency	38,502	2.4%	11
Bachelor's Degree	None	Moderate OJT	25,069	1.6%	17
Bachelor's Degree	None	None	134,034	8.5%	81
Associates Degree	1–5 years	None	25,189	1.6%	1
Associates Degree	None	None	54,224	3.4%	29
Postsecondary Non-degree Award	None	None	47,849	3.0%	19
HS Diploma or Equivalent	1–5 years	Short-term OJT	24,677	1.6%	2
HS Diploma or Equivalent	1–5 years	None	83,022	5.3%	21
HS Diploma or Equivalent	None	Apprenticeship	32,617	2.1%	14
HS Diploma or Equivalent	None	Long-term OJT	51,968	3.3%	46
HS Diploma or Equivalent	None	Moderate-term OJT	200,345	12.7%	144
HS Diploma or Equivalent	None	Short-term OJT	266,913	16.9%	89
Less than HS	None	Short-term OJT	350,519	22.2%	63
Sum of 15 Categories			1,393,561		608
Total All Occupations			1,581,297		770
Sum as a Percent of Total			88.1%		79.0%



Source: Utah Department of Workforce Services.