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OCCUPATIONAL REQUIREMENTS IN THE UNITED STATES – 2018

On-the-job training was required for 76.8 percent of all civilian workers in 2018, the U.S. Bureau of Labor Statistics reported today. The average length of on-the-job training was 34 days.

Education, training, and experience

The preparation time required for a typical worker to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job can range between a short demonstration to more than 10 years. Preparation time includes formal education, pre-employment training, on-the-job training, and prior work experience.

Chart 1: Percent of workers with a minimum education requirement, 2018

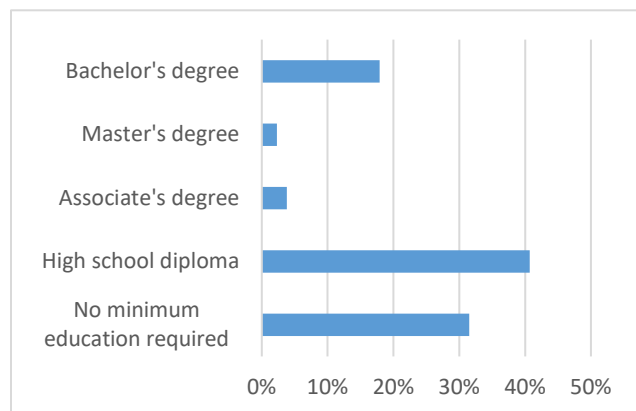
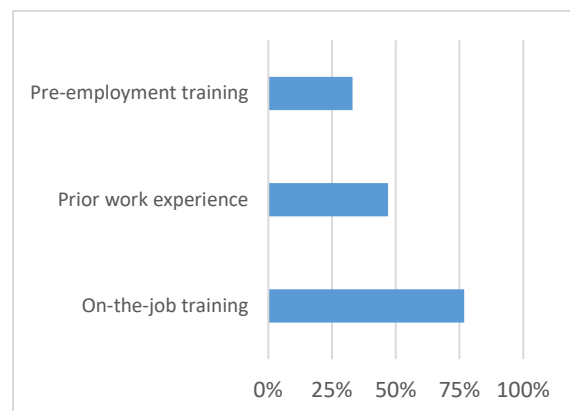


Chart 2: Percent of workers with training and experience requirements, 2018



Requirements for all workers:

- Approximately 31.5 percent of workers had preparation time requirements that included more than a short demonstration and up to 1 month of preparation and 19.0 percent were required to have between 2 years and 4 years of preparation time.
- High school was the most common minimum education level for workers in 2018, with 40.7 percent of jobs requiring at least a high school diploma. There was no minimum education level required for 31.5 percent of jobs, while a bachelor's degree was required for 17.9 percent of workers. (See chart 1.)
- On-the-job training was required for 76.8 percent of all civilian workers in 2018. Prior work experience was required for 47.0 percent of workers and 33.0 percent of workers were required to have completed pre-employment training. (See chart 2.)

Requirements by occupation:

- Prior work experience was required for 84.3 percent of accountants, with another 68.3 percent requiring on-the-job training. The majority (92.0 percent) of accountants required a bachelor's degree.
- For management occupations, the most common (59.5 percent) minimum education level required was a bachelor's degree.
- The majority of workers in food preparation and serving related occupations (81.4 percent) did not have a minimum education level requirement. A high school diploma was required for 18.1 percent of workers.
- Over half (55.3 percent) of workers in production occupations were required to have a high school diploma. Post-employment training was required for 86.6 percent of these workers.

Physical demands

Physical demands are the physical activities workers are required to perform to carry out critical job tasks. The presence and, in some cases, duration of these activities are published.

Chart 3: Percent of workers by required strength level, 2018

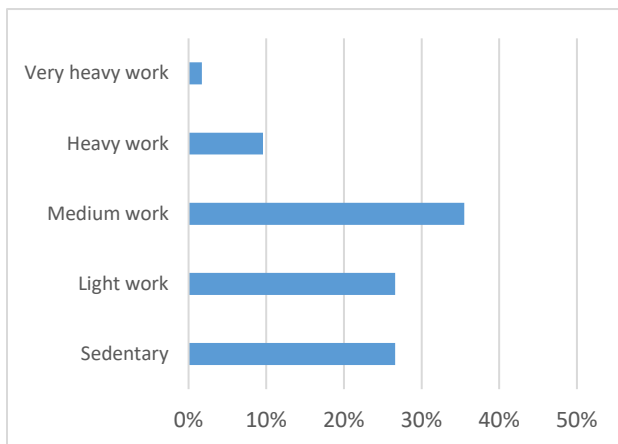
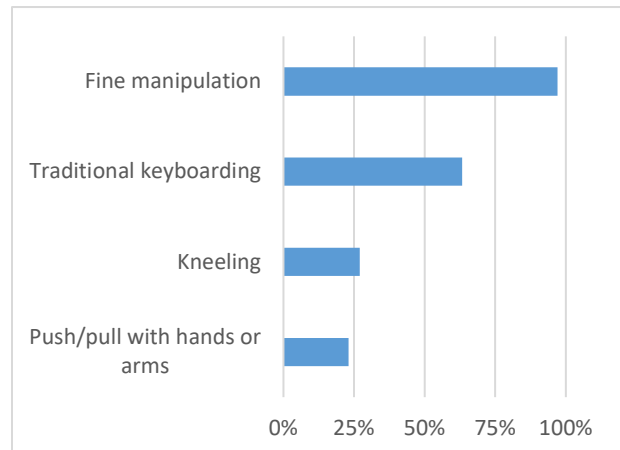


Chart 4: Percent of workers with physical job requirements, 2018



Requirements for all workers:

- A medium strength level was required for 35.5 percent of workers, while a sedentary strength level and a light strength level were required by 26.6 percent each. A heavy work strength level was present for 9.6 percent of workers and a very heavy work strength level accounted for the remaining 1.7 percent of workers. (See chart 3.)
- Almost all workers were required to use fine manipulation (97.0 percent) and gross manipulation (99.4 percent). Fine manipulation is the use of fingers (pinching, etc.), while gross manipulation is grasping with the palm or full hand.
- Traditional keyboarding was required for 63.3 percent of workers.
- Ability to push and pull with one's hands or arms was required for 23.1 percent of workers.

- Reaching at or below the shoulder was required for 81.9 percent of workers, while reaching overhead was required for 44.5 percent.
- Crouching was required for 35.6 percent of workers, while kneeling was essential for 27.0 percent, and crawling was necessary for 6.7 percent of workers.

Requirements by occupation:

- The average maximum weight lifted in construction and extraction occupations was 57 pounds.
- Traditional keyboarding was required in all computer and mathematical occupations.
- Approximately three-fourths (70.3 percent) of plumbers were required to climb ramps or stairs. Climbing ladders, ropes, or scaffolds on the job was required for 80.8 percent of plumbers.
- Jobs for protective service occupations required workers to reach at or below the shoulder (90.4 percent), reach overhead (57.7 percent), drive (55.6 percent), and kneel (53.1 percent).

Environmental conditions

Environmental conditions are the various tangible or concrete hazards or difficulties that are in the vicinity of where a job's critical tasks are performed.

Requirements for all workers:

- About one-third (33.3 percent) of workers were required to perform outdoor work.
- About three-fourths (75.1 percent) of workers experienced a moderate noise intensity level (such as a business office or department store noise level). A quiet noise intensity level (such as a private office or art museum) was experienced by 15.9 percent of workers and a loud noise intensity level (such as large earth moving or manufacturing equipment) was experienced 8.8 percent.
- Most workers were not exposed to humidity (98.9 percent), heavy vibrations (97.2 percent), extreme heat (94.8 percent), extreme cold (94.2 percent), hazardous contaminants (91.4 percent), or high, exposed places (89.8 percent).

Requirements by occupation:

- The majority of workers (92.3 percent) in construction and extraction occupations were exposed to the outdoors, while 76.1 percent worked in high, exposed places.
- Most recreation workers (74.3 percent) were exposed to the outdoors and 54.4 percent were exposed to wetness. Wetness is defined as any contact with waters or other liquids or working in a wet area.
- About half (53.0 percent) of welders were exposed to extreme heat, while 65.6 percent were exposed to moving mechanical parts.
- Most transportation and material moving workers (76.6 percent) were exposed to a moderate noise intensity level, and 21.5 percent worked at a loud noise level.
- About half (51.3 percent) of workers in installation, maintenance, and repair occupations were exposed to wetness on the job.

Technical Note

Data in this release are from the Occupational Requirements Survey (ORS), conducted by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). The ORS provides job-related information about the physical demands; environmental conditions; education, training, and experience; as well as cognitive and mental requirements of jobs in the U.S. economy. Additional job requirements are available through www.bls.gov/ors/#data.

Sample size

The ORS is a nationally representative establishment-based survey. To maximize the amount of publishable information, the BLS combined data across three samples collected over a three year period to produce the 2018 estimates. The total sample included approximately 25,300 establishments and estimates represent about 140,800,000 civilian workers.

Aligning previous collected requirements

Additional imputation procedures were used for these estimates to align previously collected data with current survey definitions. Where possible, three years of ORS samples are included in the estimates. The scope changes implemented before the third year of collection resulted in conceptual inconsistencies for physical demands and environmental conditions requirements across the three years. A multiple imputation approach employing an iterative logistic regression imputation procedure was used.

Measures of reliability

To assist users in ascertaining the reliability of ORS estimates, standard errors are made available shortly after publication of the news release. Standard errors provide users a measure of the precision of an estimate to ensure that it is within an acceptable range for their intended purpose. Collected and imputed data are included in the standard error calculation. For further information see: www.bls.gov/ors/se.htm.

Occupational classification

BLS uses the Standard Occupational Classification (SOC) system, www.bls.gov/soc. The ORS classifies occupations by eight-digit codes used by O*NET's detailed occupational taxonomy referred to as "O*NET-SOC 2010 Occupations," see www.onetcenter.org/taxonomy.html for more information regarding O*Net occupation classification. Military specific occupations (55-0000.00) are out of scope for the ORS.

Obtaining information

For addition information on estimation concepts and methods see the Handbook of Methods at www.bls.gov/opub/hom/ors/home.htm and www.bls.gov/ors/questions-and-answers.htm. More information can be obtained by calling (202) 691-6199, sending email to orsinfo@bls.gov, or by visiting www.bls.gov/ors. Information in this release will be made available to sensory impaired individuals upon request -- Telephone: (202) 691-5200; Federal Relay Service: (800) 877-8339.