JADARA

Volume 29 | Number 3 Article 9

October 2019

# Employment Trends for Occupations Requiring Vocational and Associate's Degrees

John Schroedel
*none*

Paul Geyer

# *Employment Trends for Occupations Requiring Vocational and Associate's Degrees*

**By: John Schroedel and Paul Geyer**

*Abstract*

*This article, second in a special series devoted to employment trends, focuses on occupations requiring some postsecondary training, usually for a one- to two-year Vocational or Associate's degree. The first article (Geyer & Schroedel, 1995) concentrated on occupations requiring a Bachelor's degree or higher. Forthcoming articles will report on occupations requiring (a) significant on-the-job training or (b) a secondary diploma or less education.*

Access to information is essential to surviving and thriving in a world filled with change. This is equally true for job seeking and career decision-making as it is in other life areas. Fortunately, much vocational information is systematically organized, especially by federal employment agencies. A key to broader utilization of these occupational databases is to make them more available to workers, job seekers, students, counselors and other consumers.

Timely knowledge of occupational information is especially important to persons who are deaf or hard of hearing. The well-informed career decision-maker is ahead of the competition for the desirable job openings or preferred slots in training programs. Access to high-quality information is essential to making good decisions about wanting to work, choosing a career, and determining which training or education is needed to qualify for the chosen career. The career decision-maker needs to know about the requirements of occupations as well as be aware of one's personal interests, abilities, and work skills.

This article provides information about 46 occupations which require some postsecondary preparation, mostly in one- or two-year training fields leading to Vocational or Associate's degrees. The article is written for use by counselors in rehabilitation, high school, college, and related settings in their efforts to provide career guidance to people who are deaf or hard of hearing. For each occupation, the article provides estimates of the number of people employed in 1992, the number and percent of additional workers to be employed by 2005, and income ratings.[1]

## Six-Hundred-Thousand Associate Degrees Awarded Yearly

Almost two million graduates annually receive college degrees, ranging from a Vocational degree to the doctorate (U.S. Bureau of the Census, 1991).

About one-third of these degrees are Associate's (N = 600,000). These degrees are especially important for deaf graduates. During 1994 there were 136 special college programs for deaf students in the United States (Rawlings, Karchmer, DeCaro, & Allen, 1995). About 70% of deaf alumni from these colleges with special service or instructional programs have completed a Vocational or Associates's degree (Rawlings & King, 1986; Schroedel & Watson, 1991). There is no comparable information on the degree attainments of deaf and hard of hearing alumni from colleges without support service programs.

The Vocational degree or Associate's degree can be either a terminal degree needed to enter a given career or a stepping stone towards a Bachelor's degree. Among the 600,000 Americans earning an Associate's degree in 1990, about 20% enrolled in liberal arts or general studies courses, whereas others pursued technical or professional careers (U.S. Bureau of the Census, 1991).

Rapid expansion of communication technology and other workplace accommodations is helping to diminish categorical stereotypes about which occupations are "appropriate" for either deaf or hard of hearing persons. Deaf and hard of hearing workers are facing dynamic opportunities in the labor market. Thus, none of the occupations classified by the Bureau of Labor Statistics (BLS) as requiring Vocational and Associate's degree-level training have been excluded from this article.

## Why Get a Vocational or Associate's Degree?

An attractive point about many Vocational and Associate's degrees is the marketability of their related job skills. Most of the majors or fields of study identified with

these degrees are directly linked to preparation for entry into specific jobs. This is especially the case in business, management, engineering technologies, and health sciences (U.S. Bureau of the Census, 1991).

Another merit of Vocational and Associate's degrees relates to the institutions of higher education offering them. Usually, community colleges and technical-vocational institutes providing two-year degrees have more flexible admissions standards than do four-year colleges and universities. Thus, students whose skills and potential were not top-ranked in their high school graduating classes can qualify for a postsecondary education.

In the face of high college costs, another advantage of the Vocational or Associate's degree is its relative economy. Rapid increases in tuition and other expenses are making a four-year college education less feasible for many people. Studying for a one- or two-year degree is a more affordable option. Time itself also has relevant economic value. Many persons are in life circumstances that do not allow full-time studies for a four-year degree. Again, Vocational and Associate's degrees are suitable options when preparing for a career.

## Employment Trends

Table 1 provides summaries of employment trends for occupations which typically require training at the Vocational or Associate's degree levels. This information was derived from estimates reported in *Occupational Projections and Training Data* by the U.S. Bureau of Labor Statistics (1994a). The occupations are grouped into seven broad categories: (a) Executive, administrative, and managerial; (b) Professional specialties; (c) Technical; (d) Marketing and sales; (e) Administrative support (including clerical); (f) Service; and (g) Precision production, craft, and repair occupations (each listed in **Bold** in Table 1).

This table presents the estimates of the number employed in 1992 and the number and percent of increased employment by 2005 for the occupations listed. It also provides a rating of 1992 weekly pay for each occupation relative to pay in other occupations. Pay ratings are based on the median earnings of full-time workers in a given occupation. The four pay rating codes are: VH=Very High (top 25% of occupations), H=High (upper-middle 25%), L=Low (lower-middle 25%), and VL=Very Low (bottom 25% of occupations).

It is important to note that the information in Table 1 represents estimates for the nation as a whole. Estimates may be higher or lower for certain occupations in some localities. Regional, state, or local statistics may be obtained by contacting state employment security agencies. The Counselor Notes section of Table 1 is available for recording such information.

Numerous well-paying, rapidly expanding **"hot occupations"** are open to qualified college graduates with Vocational or Associate's degrees. As exemplified in Table 1, these include jobs as Medical Records Technicians, Engineering Technicians, Drafters, and Legal Assistants. In contrast, declining employment, as indicated by the decreasing number of future workers, is envisioned for such **"cold occupations"** as Computer Operators as well as Electrical and Electronic Equipment Mechanics. These **"cold occupations"** are characterized by diminishing employment prospects, more lay-offs, and less economic security. Even top-of-the-line skilled workers in these jobs would face these problems. Naturally, those planning new careers should give prime consideration to their vocational interests and aptitudes before deciding to pursue a given career. The point is that career decisions involve factors other than a given occupation being "hot" or "cold."

## Career Counseling Tips

*Exploring occupations is important* in choosing a future career. Knowledge of many jobs is a key foundation for a good career decision. Persons seeking work requiring training for a Vocational or Associate's degree should read the list of occupations in Table 1. Occupations that interest a student should be explored further with their career counselor, either at the local high school or branch office of the vocational rehabilitation agency. Specifically, using the information from Table 1, they should discuss the following topics:

* *Employer demand for an occupation now* (using numbers for 1992). The number of workers in some occupations is greater than in others. A large number of jobs for a given occupation generally means more future employment opportunities.
* *The employment outlook in 2005* (forecasted percentage of growth). Growth tends to open job and advancement opportunities, especially in occupations with relatively large growth rates.
* *The pay rating.* Pay is important to most workers. Higher earnings can be associated with a better quality of life.
* *Educational requirements.* After selecting an occupation, an individual will want to know how to meet its specific educational requirements. For occupations requiring

**Table 1 Employment data for jobs requiring some postsecondary training**

(Numbers in Thousands)

| 1992 Job Titles | Number Employed 1992 | Number Increased by 2005 | Percent Increased by 2005 | Weekly earnings 1992 | Counselor Notes: |
|---|---|---|---|---|---|
| **Executive, administrative, and managerial occupations** | | | | | |
| Managerial and administrative occupations | | | | | |
| Funeral directors and morticians | 27 | 5 | 17.6 | VH | |
| **Professional specialty occupations** | | | | | |
| Architects and surveyors | | | | | |
| Surveyors | 99 | 13 | 13.2 | H | |
| Health assessment and treating occupations | | | | | |
| Registered nurses | 1,835 | 765 | 41.7 | VH | |
| Therapists | | | | | |
| Respiratory therapists | 74 | 36 | 48.3 | VH | |
| **Technicians and related support occupations** | | | | | |
| Health technicians and technologists | | | | | |
| Cardiology technologists | 14 | 5 | 35.0 | H | |
| Dental hygienists | 108 | 46 | 42.7 | H | |
| EEG technologists | 6 | 3 | 53.8 | H | |
| Emergency medical technicians | 114 | 41 | 35.9 | H | |
| Licensed practical nurses | 659 | 261 | 39.7 | H | |
| Medical records technicians | 76 | 47 | 61.5 | H | |
| Nuclear medicine technologists | 12 | 6 | 50.1 | H | |
| Psychiatric technicians | 72 | 19 | 26.0 | VL | |
| Radiologic technologists and technicians | 162 | 102 | 62.7 | H | |
| Surgical technologists | 44 | 19 | 42.4 | H | |
| All other health professionals and paraprofessionals | 413 | 181 | 43.9 | H | |
| Engineering and science technicians and technologists | | | | | |
| Engineering technicians | | | | | |
| Electrical and electronic technicians/technologists | 323 | 74 | 22.8 | VH | |
| All other engineering technicians and technologists | 372 | 59 | 15.8 | H | |
| Drafters | 314 | 35 | 11.3 | H | |
| Science and mathematics technicians | 244 | 61 | 25.0 | H | |
| Technicians, except health and engineering and science | | | | | |
| Broadcast technicians | 35 | 1 | 4.0 | VH | |
| Legal assistants and technicians, except clerical | | | | | |
| Paralegals | 95 | 81 | 86.1 | H | |
| Technical assistants, library | 71 | 18 | 25.0 | VH | |
| All other technicians | 33 | 5 | 15.1 | VH | |
| **Marketing and sales occupations** | | | | | |
| Real estate agents, brokers, and appraisers | | | | | |
| Brokers, real estate | 69 | 14 | 20.4 | H | |
| Real estate appraisers | 45 | 17 | 38.1 | H | |
| Sales agents, real estate | 283 | 32 | 11.3 | H | |
| Travel agents | 115 | 76 | 65.7 | L | |

## EMPLOYMENT TRENDS FOR OCCUPATIONS

**Table 1 Employment data for jobs requiring some postsecondary training**

(Numbers in Thousands)

| 1992 Job Titles | Number Employed 1992 | Number Increased by 2005 | Percent Increased by 2005 | Weekly earnings 1992 | Counselor Notes: |
|---|---|---|---|---|---|
| **Administrative support occupations, including clerical** | | | | | |
| Computer operators & peripheral equipment operators | 266 | -104 | -39.3 | L | |
| Computer operators, except peripheral equipment | | | | | |
| Secretaries, stenographers, and typists | 280 | 160 | 57.1 | L | |
| Secretaries | 235 | 106 | 45.2 | L | |
| Legal secretaries | 115 | -2 | -1.5 | L | |
| Medical secretaries | | | | | |
| Stenographers | | | | | |
| Other clerical and administrative support workers | 885 | 381 | 43.1 | VL | |
| Teacher aides and educational assistants | | | | | |
| **Service occupations** | 183 | 72 | 39.3 | L | |
| Health service occupations | 12 | 9 | 78.1 | L | |
| Dental assistants | 54 | 22 | 41.9 | L | |
| Occupational therapy assistants and aides | | | | | |
| Pharmacy assistants | 61 | 57 | 92.7 | L | |
| Physical and corrective therapy assistants and aides | 71 | -1 | -1.7 | VL | |
| Personal service occupations | | | | | |
| Barbers | | | | | |
| Cosmetologists and related workers | 628 | 218 | 34.7 | VL | |
| Hairdressers, hairstylists, and cosmetologists | 35 | 19 | 54.1 | VL | |
| Manicurists | | | | | |
| **Precision production, craft, and repair occupations** | | | | | |
| Mechanics, installers and repairers | | | | | |
| Electrical and electronic equipment mechanics, installers, and repairers | 83 | 38 | 45.5 | VH | |
| Data processing equipment and repairers | 39 | -2 | -5.4 | H | |
| Electronic home entertainment equipment repairers | 68 | 5 | 7.4 | H | |
| Electronics repairers, commercial and industrial equipment | | | | | |
| Vehicle and mobile equipment mechanics and repairers | 26 | 2 | 8.4 | VH | |
| Aircraft mechanics and engine specialists | 105 | 15 | 13.8 | VH | |
| Aircraft engine specialists | | | | | |
| Aircraft mechanics | | | | | |
| Production occupations, precision | 30 | 6 | 19.1 | H | |
| Metal workers, precision | | | | | |
| Jewelers and silversmiths | 48 | 2 | 3.1 | L | |
| Other precision workers | | | | | |
| Dental lab technicians, precision | | | | | |

postsecondary training this involves selection of a college major or a field of training in particular job-related skills. For deaf or hard of hearing persons, the availability of adequate support services and special instructional resources are important attributes to consider.

### A Case Study

Jeff, a high school senior interested in a career in aircraft engine maintenance and repair, wants to know if this would be a wise career choice. These aviation occupations are included with those labeled Aircraft Mechanics and Engine Specialists in Table 1. As shown, a 13.8% increase in the number of workers in these types of occupations is expected by 2005. This is a good sign that jobs will be available. Weekly earnings, averaging $625 during 1992, are in the Very High category; thus, pay is an attractive attribute. This would be a wise career choice for people who desire these attributes.

Ms. Lise Veridad, Jeff's vocational rehabilitation counselor, is helping him learn about what specific college majors would prepare him for this occupation and what other occupations would require the same college major. Although names of majors vary among postsecondary training programs, Aviation Mechanics and Aviation Maintenance Technology are common titles found in program catalogues. Such majors are often available at community colleges and technical institutes in metropolitan areas with nearby airports.

Ms. Veridad and Jeff sat down together to discuss the *Occupational Outlook Handbook* (U.S. BLS, 1994b). They especially talked about information on certain educational requirements (such as college major). The Aircraft Mechanics and Engine Specialists section of this handbook reports that relevant Federal Aviation Administration (FAA) certificates include Airframe (A) or Powerplant (P) Mechanics and Repairers; combinations of A and P certification also occur. Jeff finds that his completed courses in mathematics, mechanical drawing, physics, and chemistry will be helpful to working in this aviation field. Ms. Veridad helps Jeff become more aware that he needs specialized training in electronics and computers, in addition to advanced courses in the aforementioned training fields.

The *Occupational Outlook Handbook* also reports that the skills of aircraft mechanics are *transferable* to other occupations. This is good news for Jeff. If for some reason he became unemployed, his skills would enable him to meet the requirements for a variety of occupations other than aircraft maintenance. Workers trained in repairing airframes and engines are employable in related occupations such as Electricians, Elevator Repairers, and Telephone Maintenance Mechanics. Thus, it is less likely that they will face long periods of unemployment. Workers like Jeff would benefit from being aware of which other occupations require similar knowledge and skills to those of Aviation Mechanics.

High school students, such as Jeff, who are interested in aircraft maintenance, will be able to get answers to more detailed questions by meeting and observing people working in aircraft maintenance jobs. About 60% of these workers are employed by the larger airlines at major airports. About 20% of aircraft mechanics are employed by federal agencies (such as the FAA) and another 20% work at aircraft assembly firms. Ms. Veridad encouraged Jeff to visit the aircraft repair facilities operated by several major airlines at the nearby metro airport. Seeing people at work on these jobs as well as talking with them would probably be a pivotal influence upon Jeff's career decision. For information on other generic career learning activities of deaf high school students see Schroedel (1991).

## ■ Additional Resources

### Occupational Information

The most comprehensive occupational information is found in the following government publications:

*Occupational Outlook Handbook* (USBLS, 1996). It contains narrative-style information about 250 occupations. For each occupation, information is given on training and educational requirements, working conditions, pay, nature of the work, the outlook for growth in employment opportunities, and sources of other related information.

*Occupational Projections and Training Data* (USBLS, 1994(a)). Information for over 600 occupations is presented, including information on growth rates, educational requirements, and characteristics like worker age and race. Occupations are ranked on growth rate, unemployment rate, and pay.

*Occupational Outlook Quarterly (OOQ)* and the *Monthly Labor Review (MLR).* Both of these share useful occupational information such as "The 1992-2005 Job Outlook in Brief" from the Spring, 1994 *OOQ* and "Labor Force Trends of Persons with and without Disabilities" from the October, 1991 *MLR.*

The above resources are products of the U.S. Bureau of Labor Statistics, and are sold by: U.S.

Government Printing Office, Superintendent of Documents, Washington, DC 20402-0001. Phone: (202) 512-2303. These resources can also be found in many local public libraries as well as in college and university libraries.

Another source of occupational information is:

The *Complete Guide for Occupational Exploration* (1993). The *CGOE* is based on data provided by the U.S. Department of Labor. For over 12,000 occupations, it identifies the occupational requirements for: worker interests; reading, math, and language levels; physical abilities and other attributes. The *CGOE* is sold by JIST Works, Inc., 720 North Park Avenue, Indianapolis, IN 46202-343. Phone: 1-800-648-5478.

## Educational Information

The following organizations offer information about educational programs and support services for college-bound deaf or hard of hearing people:

Association on Higher Education and Disability (AHEAD), P.O. Box 21192, Columbus, OH 43221-0192. Phone: (614) 488-4972 (Voice or TDD).

Self Help for Hard of Hearing People, Inc. (SHHH), 7910 Woodmont Avenue, Suite 1200, Bethesda, MD. Phone: (301) 657-2248 (Voice) or (301) 657-2249 (TDD).

HEATH National Clearinghouse on Postsecondary Education for Individuals with Disabilities, American Council on Education, One Dupont Circle, Suite 800, Washington, DC 20036-1193. Phone: (800) 544-3284 or (202) 939-9320 (Voice or TDD).

Gallaudet University, National Information Center of Deafness, 800 Florida Avenue, NE, Washington, DC 20002. Phone: (202) 651-5051 (Voice or TDD).

National Technical Institute for the Deaf, National Center on Employment of the Deaf, 1 Lomb Memorial Drive, Rochester, NY 14623. Phone: (716) 475-6205 (Voice or TDD).

The following publication provides useful information about college programs offering Bachelor's degrees:

*College and Career Programs for Deaf Students* (1995), edited by Rawlings, Karchmer, De Caro, and Allen, is one of the best sources of published information for deaf students selecting a college with support services such as interpreters, notetakers, and tutors. It provides full information on 136 special colleges in the United States. It is available from the Center for Assessment and Demographic Studies, Gallaudet University, Washington, DC 20002. Phone: (202) 651-5575 (Voice or TDD).

## Additional Information

Requests for information can be sent to the Research and Training Center for Persons Who are Deaf or Hard of Hearing, 4601 West Markham Street, Little Rock, AR 72205. E-mail: rehabres@cavern.uark.edu. Internet Website: http://www.uark.edu/depts/rehabres. Phone: (501) 686-9691 (V/TDD) or (501) 686-9698 (Fax). This article was developed under grant H133B10001 from the National Institute of Disability and Rehabilitation Research, Office of Special Education and Rehabilitation Services, Department of Education, Washington, DC 20202.

*John Schroedel and Paul Geyer* are respectively, Research Professor and Research Assistant Professor, at the Research and Training Center on Persons Who are Deaf and Hard of Hearing, University of Arkansas, Little Rock.

## References

Complete Guide for Occupational Exploration (1993). JIST Works, Inc.

Geyer, P., & Schroedel, J. G. (1995). Employment trends for occupations requiring a bachelor's or higher degree. *JADARA, 29*(2), 37-43.

Rawlings, B. W., Karchmer, M. A., De Caro, J. J., & Allen, T. E. (Eds.). (1995). *College and career programs for deaf students* (pp. 231-256). Washington, DC & Rochester, NY: Gallaudet University & National Technical Institute for the Deaf.

Rawlings, B. W., & King, S. J. (1986). Postsecondary educational opportunities for deaf students. In A. N. Schildroth & M. A. Karchmer, (Eds.), *Deaf children in America*. San Diego: College-Hill Press.

Schroedel, J. G. (1991). Improving the career decisions of deaf seniors in residential and day high schools. *American Annals of the Deaf, 136*(4), 330-338.

Schroedel, J. G., & Watson, D. (1991). *Enhancing opportunities in postsecondary education for deaf students.* Little Rock: University of Arkansas, Research and Training Center on Deafness and Hearing Impairment.

Silvestri, G. T. (1995). Employment outlook: 1994-2005 – occupational outlook to 2005. *Monthly labor Review, 118*(11), 60-84.

U.S. Bureau of Labor Statistics. (1994a). *Occupational projections and training data.* Washington, DC: U.S. Government Printing Office.

U.S. Bureau of Labor Statistics. (1994b). *Occupational outlook handbook.* Indianapolis, IN: Jist Works.

U. S. Bureau of the Census. (1991). *Statistical abstract of the United States* (111th ed.). Washington, DC: U.S. Government Printing Office.

## Endnotes

[1]Occupational forecasting data for 1992 are being used for this series of articles. These were the most recent data available from the U.S. Bureau of Labor Statistics (US BLS) at the time this series was planned. After this series was started US BLS occupational data for 1994-2005 were published (Silvestri, 1995).