
Procedures for O*NET Job Zone Assignment

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Executive Summary

The Job Zone classification provides O*NET database users a guide to the vocational preparation levels of O*NET-SOC occupations. With each new O*NET database release, approximately 100 occupations are classified or re-classified within the five-level Job Zone system, based on data from job incumbents and occupational experts (OEs) regarding the levels of education, experience, and training needed for work in their occupations. This document provides a detailed description of the procedure by which incoming O*NET data and other information contribute to the assignment of occupations to Job Zones.

The eight-step procedure by which four trained analysts assign each O*NET occupation to a Job Zone involves consideration of five classes of information: (1) the occupation's main duties and tasks, (2) incoming data on the occupation's education, training, and experience levels, (3) the occupation's previously assigned Job Zone, (4) Job Zones of other O*NET-SOCs, and (5) the occupation's Bureau of Labor Statistics (BLS) education and training classification. Two trained analysts independently consider these factors and make a tentative Job Zone assignment. The two analysts' assignments are then compared and discordant assignments reviewed and resolved by two senior analyst/managers.

Creation of the Job Zone system met the need for education, training, and experience information in the transition from the Dictionary of Occupational Titles to the O*NET database. Use of incoming incumbent and OE data to assign or reassign occupations to Job Zones maintains this classification as an up-to-date vocational preparation guide for job seekers, career counselors, and others making informed vocational choices.

Introduction

This paper describes the procedure within the O*NET[®] Data Collection Program for assigning Job Zone information to O*NET-SOC occupations. Each O*NET[®] database release includes updated data on approximately 100 O*NET-SOC occupations. For Content Model domain variables ([Peterson, N., Mumford, M., Borman, W., Jeanneret, P., & Fleishman, E., 1995](#)) and tasks, aggregate data from incumbents, occupational experts (OE), or analysts contribute directly to published estimates. Data from incumbents and OEs also contribute to occupations' values on a variable known as the Job Zone, a means of stratifying occupations based on their associated levels of education, experience, and training. Four trained analysts assign each occupation to one of 5 Job Zones, based on incumbent or OE data on the levels of education, experience, and training needed for their occupations. A brief history of the Job Zone assignment process and the 8 steps of the current Job Zone assignment procedure are described in the following paragraphs.

History

The Dictionary of Occupational Titles (DOT, U.S. Department of Labor, 1991) provided the data element Specific Vocational Preparation (SVP) as a means of stratifying occupations by level of required vocational preparation. In the transition from the DOT to the O*NET[®] database, SVP categorization guided development of the Job Zone system. Assignment of Job Zone classifications to the 1,122 occupational units (OUs) comprising O*NET 98 (U.S. Department of Labor, 1998) involved (a) mapping over 12,000 DOT classifications to 1,122 O*NET OUs; (b) averaging the SVP ratings for each OU's core DOT codes to provide an aggregated SVP rating for the OU; and (c) use of aggregated SVP ratings to sort the OUs into five Job Zones (Table 1). For additional information on this process, please see [Oswald, Campbell, McCloy, Rivkin, and Lewis \(1999\)](#).

Table 1: The 5 Job Zones Defined

Job Zone	Preparation Level
1	Little or No Preparation Needed
2	Some Preparation Needed
3	Medium Preparation Needed
4	Considerable Preparation Needed
5	Extensive Preparation Needed

Complete Job Zone definitions may be found in the Appendix or at <http://online.onetcenter.org/help/online/zones>.

Once data collection began to populate O*NET 5.0, incoming job incumbent and OE data became available for assignment of occupations to Job Zones. Specifically, data collected on questionnaire items capturing the levels of needed education, training and experience provided a suitable basis for occupation assignment or re-assignment to Job Zones. An analyst-rating procedure was developed to apply these data to Job Zone assignment. The procedure, currently in use, is described in the next section.

Job Zone Assignment Procedure

The procedure for assigning occupations to Job Zones involves 8 steps conducted by trained analysts. Herein, the term “analysts” refers to Master’s and Ph.D.-level industrial-organizational psychologists with extensive background in occupational analysis. Analysts use data from 3 items of the Education and Training questionnaire to make occupations’ Job Zone assignments. Education level, as indicated by job incumbents and occupational experts, serves as the primary criterion for assigning an occupation to a Job Zone. Related work experience, on-the-job training, the occupation’s previously assigned Job Zone, and other factors also contribute to Job Zone assignment.

Step 1) Review Occupation Characteristics

Two analysts review each occupation’s description, tasks, and other information to develop an understanding of the responsibilities and other characteristics of the occupation.

Step 2) Review Education Levels

Job incumbent or OE data on the 12 response options of the Education item are aggregated in correspondence with the education level(s) associated with each of the 5 Job Zones (Table 2). Table 3 presents the correspondence of each aggregate category to a Job Zone.

Table 2: Required Education Level Response Options and Aggregate Categories

Questionnaire Response Option	Aggregate Category
Less than High School	Less than High School
High School Diploma	High School Diploma
Post-Secondary Certificate	High School Plus
Some College	
Associate's Degree	
Bachelor's Degree	Bachelor's Degree
Post-Baccalaureate Certificate	Bachelor's Degree Plus
Master's Degree	
Post-Master's Certificate	
First Professional Degree	
Doctoral Degree	
Post-Doctoral Training	

Table 3: Guideline for Assigning Job Zones based on Education Data

Job Zone	Education Category
1	Less than High School
2	High School Diploma
3	High School Plus
4	Bachelor's Degree
5	Bachelor's Degree Plus

Each analyst reviews the percentage of survey responses in each aggregate category and assigns an initial Job Zone. For difficult cases, the analysts may review the non-collapsed data.

Step 3) Review Related Work Experience and Training

Analysts supplement their initial judgments with a review of related work experience and on-the-job training. Data on these variables may or may not lead the analyst to modify his or her initial Job Zone assignment. For instance, if the data suggest that a long duration of related work experience and/or training are associated with an occupation, the analyst may raise its Job Zone. A high level of related work experience is more likely to influence Job Zone assignments of occupations associated with lower education levels.

The 11 response options comprising the item Related Work Experience, along with the aggregate categories corresponding to Job Zones, are presented in Table 4. Table 5 presents each of the 9 response options of the item On-The-Job Training and the aggregate categories.

Table 4: Related Work Experience Response Options and Aggregate Categories

Questionnaire Response Option	Aggregate Category
None	None
Up to and including 1 month	≤ 1 month
Over 1 month to 3 months	> 1 month – 2 years
Over 3 months to 6 months	
Over 6 months to 1 year	
Over 1 year to 2 years	
Over 2 years to 4 years	> 2 years – 6 years
Over 4 years to 6 years	
Over 6 years to 8 years	> 6 years
Over 8 years to 10 years	
Over 10 years	

Table 5: On-The-Job Training Response Options and Aggregate Categories

Questionnaire Response Option	Aggregate Category
None or short demonstration	None, short demonstration, or training up to 6 months.
Anything beyond short demonstration, up to and including 1 month	
Over 1 month, up to and including 3 months	
Over 3 months, up to and including 6 months	
Over 6 months, up to and including 1 year	> 6 months – 1 year
Over 1 year, up to and including 2 years	> 1 year – 2 years
Over 2 years, up to and including 4 years	> 2 years
Over 4 years, up to and including 10 years	
Over 10 years	

Step 4) Compare Job Zone Assignment with Previous Assignment and BLS Data

Each analyst then compares each occupation's resulting Job Zone assignment with its previously assigned Job Zone. Each new Job Zone assignment differing from the occupation's previous assignment is flagged for additional review. This step does not apply to occupations with no previously assigned Job Zones.

The analyst-assigned Job Zone is also compared to the occupation's Bureau of Labor Statistics (BLS) education and training classification ([Chao & Utgoff, 2006](#)). Although the BLS rating system differs from the Job Zone system in the number of categories (11 BLS categories versus 5 Job Zones), as well as the means of stratification (BLS also considers 3 levels of on-the-job training), it provides Job Zone analysts additional perspective.

Step 5) Review Job Zone Assignments from a Career Ladder Perspective

Each analyst examines occupations' new Job Zone assignments from a career ladder, or organization hierarchy, perspective. Occupations lower on the career ladder or within the organization hierarchy should, in most cases, be assigned to lower Job Zones than occupations higher on the same ladder/hierarchy. One example of a career ladder is for physical therapy, as illustrated by Table 6, below.

Table 6: Analyst Review of Job Zones within Physical Therapy Field

O*NET-SOC Code	O*NET-SOC Title	Job Zone
29-1123.00	Physical Therapists	5
31-2021.00	Physical Therapist Assistants	3
31-2022.00	Physical Therapist Aides	2

Step 6) Review Assigned Job Zones from an Occupation Similarity Perspective

Each analyst also examines assigned Job Zones based on the similarity of occupations. For instance, the analysts will examine Job Zones across engineering occupations or across post-secondary teaching occupations (Table 7).

Table 7: Analyst Review of Job Zones for Postsecondary Teachers

O*NET-SOC Code	O*NET-SOC Title	Job Zone
25-1011.00	Business Teachers, Postsecondary	5
25-1021.00	Computer Science Teachers, Postsecondary	5
25-1022.00	Mathematical Science Teachers, Postsecondary	5
25-1031.00	Architecture Teachers, Postsecondary	5
25-1032.00	Engineering Teachers, Postsecondary	5
25-1041.00	Agricultural Sciences Teachers, Postsecondary	5
25-1042.00	Biological Science Teachers, Postsecondary	5
25-1043.00	Forestry and Conservation Science Teachers, Postsecondary	5

Step 7) Comparison of Analysts' Job Zone Assignments

After each analyst has completed his/her Job Zone assignments, the two sets are compared. Disagreements are highlighted for detailed review by senior analysts/managers.

Step 8) Senior Analyst/Manager Review and Final Assignment

Two senior analysts/managers independently review the analyst-assigned Job Zones and make final assignments for all occupations. They review all relevant data for occupations on which analysts disagree and for which the new Job Zone deviates from the previously assigned Job Zone. The senior analysts/managers may also question other assignments, based on their independent review.

References

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- Oswald, F., Campbell, J., McCloy, R., Rivkin, D., & Lewis, P (1999). *Stratifying Occupational Units by Specific Vocational Preparation..* Raleigh, NC: National Center for O*NET Development.
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Appendix: Job Zone Descriptions

Job Zone One: Little or No Preparation Needed

Overall Experience No previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a cashier even if he/she has never worked before.

Job Training Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.

Job Zone Examples These occupations involve following instructions and helping others. Examples include taxi drivers, amusement and recreation attendants, counter and rental clerks, cashiers, and waiters/waitresses.

SVP Range (Below 4.0)

Education These occupations may require a high school diploma or GED certificate. Some may require a formal training course to obtain a license.

Job Zone Two: Some Preparation Needed

Overall Experience Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

Job Training Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Job Zone Examples These occupations often involve using your knowledge and skills to help others. Examples include sheet metal workers, forest fire fighters, customer service representatives, pharmacy technicians, salespersons (retail), and tellers.

SVP Range (4.0 to < 6.0)

Education These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Job Zone Three: Medium Preparation Needed

Overall Experience Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Job Training Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Job Zone Examples These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include funeral directors, electricians, forest and conservation technicians, legal secretaries, interviewers, and insurance sales agents.

SVP Range (6.0 to < 7.0)

Education Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Job Zone Four: Considerable Preparation Needed

Overall Experience A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.

Job Training Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Job Zone Examples Many of these occupations involve coordinating, supervising, managing, or training others. Examples include accountants, human resource managers, computer programmers, teachers, chemists, and police detectives.

SVP Range (7.0 to < 8.0)

Education Most of these occupations require a four - year bachelor's degree, but some do not.

Job Zone Five: Extensive Preparation Needed

Overall Experience Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

Job Training Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

Job Zone Examples These occupations often involve coordinating, training, supervising, or managing the activities of others to accomplish goals. Very advanced communication and organizational skills are required. Examples include librarians, lawyers, aerospace engineers, physicists, school psychologists, and surgeons.

SVP Range (8.0 and above)

Education A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).