



Related Detailed Work Activity (DWA) Search

(as used in O*NET OnLine)

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Overview

The Related Detailed Work Activity (DWA) Search at O*NET OnLine (www.onetonline.org) is a career exploration tool for workers looking to transition to a different occupation while leveraging their current experience with specific work activities. The tool allows a customer to select one or more detailed work activities from their current occupation. It then lists occupations which also perform one or more of the same activities. Using OnLine's extensive report features, customers can explore listed occupations to find out more about the work duties, education requirements, job prospects, and other factors which influence their career decisions.

The search algorithm is also used within OnLine's occupational reports to provide "see more occupations" results in the Detailed Work Activities reports. Developers may use O*NET Web Services (services.onetcenter.org) to include either O*NET OnLine feature in their own applications. The underlying data may be downloaded from the Developer's Corner at the O*NET Resource Center (www.onetcenter.org).

Work Activities Hierarchy

An important aspect of the Related DWA Search is a hierarchical framework linking occupation-specific task statements to broader, cross-occupational activity statements and ratings ([O*NET Work Activities Project Technical Report](#), National Center for O*NET Development, 2014). The hierarchy includes four levels of increasingly specific activities:

- **Generalized Work Activities (GWAs)** – 41 activities rated for all occupations in the O*NET Data Collection Program
- **Intermediate Work Activities (IWAs)** – roughly 300 activities spanning multiple job families
- **Detailed Work Activities (DWAs)** – roughly 2,000 activities usually specific to a single job family
- **Tasks** – roughly 20,000 occupation-specific task statements

Each detailed work activity is linked to exactly one parent IWA, and multiple task statements across two or more occupations. The DWA-task linkages provide the connection from a DWA to an O*NET-SOC occupation. The DWA-IWA linkages provide groupings of similar, but not identical, DWAs. Both of these linkages contribute to the matching and ranking process.

Step 1: Selecting an Occupation

First, a customer is asked to select their current occupation. With a database of nearly 2,000 detailed work activities, narrowing down the choices is crucial. A single occupation contains an average of 17 DWAs, which is a much more manageable list for workers to choose from.

The actual selection is handled by a keyword search. The customer enters their job title or other key words or phrases, and up to 20 occupations relevant to their query are returned. The matching process is described in [A Weighted O*NET Keyword Search](#). The search results are filtered to exclude occupations lacking DWAs. Of the 1,110 occupations in the O*NET-SOC

Taxonomy, all 974 data level occupations include DWA assignments.

Step 2: Selecting Work Activities

Once a customer selects their current occupation, the occupation's DWAs are displayed. Occupations are linked to DWAs through tasks; an "occupation's DWAs" is the set of DWAs linked to at least one of the occupation's task statements.

Each activity is accompanied by a checkbox; the customer checks each one they wish to use for finding related occupations. The occupation's most important activities are listed first, following the ranking procedure outlined in [Ranking Detailed Work Activities \(DWAs\) Within O*NET Occupational Profiles](#).

Step 3: Related Occupation Results

The final screen of the Related DWA Search shows occupations whose workers perform one or more of the selected activities. All DWAs are linked to tasks from multiple occupations, so every DWA can be used to suggest at least one other occupation.

Matching occupations are found by examining task linkages for each of the DWAs selected in Step 2. Every occupation linked to at least one of the selected DWAs (through one or more occupational tasks) is added to the result set, except the occupation originally selected in Step 1. The underlying process is described below.

For each occupation in the result set, every DWA linked to that occupation is classified into one of three categories:

1. **Shared** – the DWA is one of those selected in Step 2.
2. **Related** – the DWA has the same parent IWA as one of the selected DWAs.
3. **Unmatched** – the DWA does not match either of the above criteria.

Occupations in the result set are sorted based on four criteria:

1. Number of *shared* DWAs (largest numbers sort first)
2. Number of *related* DWAs (largest numbers sort first)
3. Number of *unmatched* DWAs (smallest numbers sort first)
4. Alphabetically by O*NET-SOC title, as the final tie-breaker

Within the results screen, if more than one DWA was selected in Step 2, OnLine presents each occupation's shared DWAs. This clarifies why a given occupation appears in the result set. The related and unmatched DWAs are only used for sorting and not included in the display.