



Related Task Search

(as used in O*NET OnLine)

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Overview

The Related Task 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 occupational tasks. The tool allows a customer to select one or more occupation-specific tasks from their current occupation. It then lists occupations with tasks similar to the selected ones. 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 Tasks 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

The cornerstone of the Related Task 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

In the current database, the majority of task statements are linked to a single DWA. About 20% of tasks involve multiple activities and are associated with more than one DWA. About 6% of tasks are very specific and are not linked to any cross-occupational activities.

Step 1: Selecting an Occupation

First, a customer is asked to select their current occupation. With a database of nearly 20,000 task statements, narrowing down the choices is crucial. A single occupation contains an average of 20 tasks, 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 tasks or DWAs. Of the 1,110 occupations in the O*NET-SOC Taxonomy, all 974 data level occupations include DWA assignments.

Step 2: Selecting Task Statements

Once a customer selects their current occupation, the occupation's task statements are displayed. Each statement is accompanied by a checkbox; the customer checks each task they wish to use for finding related occupations. The occupation's most important tasks are listed first, in the same order used by OnLine's Summary and Details reports. Only tasks linked to at least one DWA are shown, as DWA linkages are crucial to the search.

Step 3: Related Occupation Results

The final screen of the Related Task Search shows occupations whose workers perform similar tasks. Since tasks are occupation-specific, the search relies on analyst-generated linkages of tasks to DWAs. All DWAs are linked to tasks from multiple occupations, so any task-DWA linkage can be used to suggest at least one other occupation. The underlying process is described below.

First, the list of task statements chosen in Step 2 is transformed into a list of DWAs by gathering the linked DWAs for each task. These "selected DWAs" are used for the matching and sorting steps listed below.

Matching occupations are found by examining task linkages for each of the selected DWAs. 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.

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

1. ***Closely Related*** – the task is linked to at least one selected DWA.
2. ***Related*** – the task is linked to a DWA with the same parent IWA as one of the selected DWAs.
3. ***Unmatched*** – the task is linked to at least one DWA, but none of the linked DWAs match either of the above criteria.
4. ***Unlinked*** – the task is not linked to any DWAs.

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

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

Within the results screen, OnLine presents each occupation's *closely related* tasks. These tasks serve to clarify why a given occupation appears in the result set. When more than one task is closely related, more important tasks are displayed first, in the same order as the Summary and Details reports.