Using Web-Based Occupational Information to
Support Assessment of Employment Potential of
Individuals with Disabilities

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1) This is a program for training attorneys and vocational experts to use web-enabled, evidence-based occupational information to support assessment of employment potential of individuals with disabilities.

2) Delivery of instruction:

   a) Recent meta-analytic research funded casts web-based instruction in a favorable light, compared to classroom instruction: www.workerrehab.com/download/comparative_effectiveness_of_web-based_and_classroom_instruction.pdf.

   b) Blended learning is a form of web-based instruction that combines occasional face-to-face interaction between instructor and learners with distance learning. In this setting, the vast majority of learning occurs via web-based distance learning, relying on email, electronic bulletin boards, chat-rooms and instant messaging. A direct comparison of blended learning and classroom learning shows that blended delivery facilitates motivation to learn more than classroom instruction does, and distinguishes between ordinary distance learning and blended learning: www.workerrehab.com/download/motivation_to_learn_and_course_outcomes.pdf.

3) Objectives:

   a) Declarative Knowledge:

      i)   Compare and contrast major scientific approaches to assessing human *abilities* as opposed *performing generalized work activities,* and state how information produced either way can be used to assess occupational potential of individuals with functional limitations or disabilities.

      ii) Describe the Occupational Information Network (O*NET) of the U.S. Department of Labor and how the O*NET serves job-related decision making.

      iii) Describe the Position Analysis Questionnaire (PAQ) database and how it can be used to generate lists of jobs potentially appropriate for individuals with functional limitations or disabilities.

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i. Google "onet" (no quotes) and click on I'm Feeling Lucky). Click on Crosswalk Search, enter "Mail Clerk" and click Go. Page down and click on a job of interest that is shown to be in demand. Compare individual capabilities and tolerances with occupational information under both View Report Summary and View Report Details.

ii) Click on http://www.workerrehab.com/wrq /login.php username: "jrmooney" (no quotes) password "jimbob64" all in lower case. Click on 2nd choice: Examine PAQ ratings for one job. Enter "Accounting Clerk in the data blank. Click on the hotlink to Accounting Clerk. Click on the blinking Set Item Limits for This Job? Page down to Item #108 and enter 1.8. Click on Run the Job-Matching Analysis at the top of the page and wait about 1 ½ minutes for the report.

Select any job from the WRQ report generated above or from any other source and click on the 2nd choice: Examine PAQ ratings for one job. Either click on the first initial of the job title or enter keywords into the data blank. Click on the job title and view the job analysis ratings.

Same as 3)b) i) above.

All of the above in this sideboard (and more) are reflected on the following pages.

b) Procedural Knowledge:

i) Generate occupational information reports from the O*NET and compare information thus produced with capabilities and tolerances of individuals.

ii) Program the Worker Rehabilitation Questionnaire (WRQ) online to recognize impacts of functional limitations of an individual on their capabilities or tolerances to perform 150 generalized work activities and to generate lists of potentially appropriate jobs for the individual.

iii) Retrieve job analysis ratings on any of nearly 2,500 Dictionary of Occupational Titles (DOT) codes and titles from the PAQ database to compare with capabilities and tolerances of an individual with functional limitations or disabilities.

iv) Enter DOT codes or titles generated by the WRQ for an individual with functional limitations into O*NET Crosswalks, and produce O*NET information on occupations that an individual with disabilities or functional limitations may be able to learn and perform.

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4) Human Abilities

    a) http://www.google.com/search?source=ig&hl=en&rlz=&q=edwin+a.+fleishman&btnG=Google+Search. This is a 1-page Google search for **Edwin A. Fleischman.** The items on this page provide an overview of Fleishman's accomplishments and honors. His Web page http://www.managementresearchinstitute.com/people.aspx offers his resume in two-paragraphs. Clicking on Products, http://www.managementresearchinstitute.com/products.aspx lists Fleishman tools that enable users to capture ability requirements for virtually any job and to list specifications and sources of standardized tests demonstrating systematic relationships with such abilities, as oral comprehension, written comprehension, oral expression, written expression, fluency of ideas, originality or other abilities listed at http://www.workerrehab.com/download/Fleishman_Job_Analysis_Survey.pdf.

    b) Fleishman's ability scales (FJAS) can be used to establish ability requirements for virtually any job known job. This information provides a basis for assembling batteries of ability tests used for personnel selection or promotion. At this point, no database has been assembled from Fleishman ability scales.

5) Generalized Work Activities

    a) The Position Analysis Questionnaire (PAQ) is the gold standard of generalized work activities. It consists of 187 standardized job elements that have been used to rate more than 300,000 jobs that are classified on nearly 2,500 job titles and codes from the Dictionary of Occupational Titles.

6) Fleischman's ability scales and the PAQ are major components of the Occupational Information Network (O*NET) of the U.S. Department of Labor http://online.onetcenter.org. The O*NET was established in the late 1990's to replace the Dictionary of Occupational Titles, a traditional book in its (1991) Fourth Edition.

    a) The O*NET can be recognized as any other database or spreadsheet with rows and columns.

       i) O*NET row headings consist of generalized work activities, Fleishman abilities and other measures, e.g., vocational interests.

       ii) O*NET database column headings are jobs or occupations.

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    iii) Information in O*NET cells represent the importance or extent of use of a generalized work activity, ability or other measure.

b) Two forms of O*NET reports are available, plus a custom form.

    i) Summary reports express importance or extent of use of a generalized work activity, ability or other variable in text. This http://online.onetcenter.org/link/summary/43-3031.00 is a link to the O*NET Summary report on Bookkeeping, Accounting and Auditing Clerks.

    ii) Detailed reports show importance or extent of use a generalized work activity, ability or other variable quantitatively and in greater detail than a Summary report, as shown in this link http://online.onetcenter.org/link/details/43-3031.00 to the O*NET Summary report on Bookkeeping, Accounting and Auditing Clerks.

c) The O*NET provides wage and salary information on jobs or job families for any state, and links to additional information: http://www.careerinfonet.org/occ_rep.asp?optstatus=011000000&soccode=433031&id=1&nodeid=2&stfips=08&search=Go.

d) The O*NET is not designed to take disability or functional limitation into account. For example, if a person has decreased sitting tolerance because of a back injury, the O*NET does not provide a way to generate occupational information about jobs with less than average or minimal sitting requirements.

e) The Worker Rehabilitation Questionnaire (WRQ) is a Web-enabled system that uses a subset of PAQ job elements to accesses the PAQ database, using algorithms that list jobs that are potentially appropriate for individuals with disabilities or deficits. Job titles or codes thus listed can be entered into O*NET. In this regard, WRQ information offers the user a leg up to access O*NET information on jobs that are likely within the individual's capabilities and tolerances.

7) The Worker Rehabilitation Questionnaire (WRQ) http://workerrehab.com.

a) Access to the WRQ requires a User name and Password, which I am pleased to set, respectively, for Ritsema & Lyon as "rsmal" and "attorney" (no quotes).

b) The WRQ is shorthand for a system that includes:

    i) Access to the Position Analysis Questionnaire (PAQ) database. The PAQ database consists of job analysis (PAQ) ratings on more than 300,000 jobs

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that are spread across nearly 2,500 job titles and codes from the *Dictionary of Occupational Titles* (DOT).

ii) Standardized definitions of the150 PAQ job elements that best describe human performance. Each job element is defined in depth, and offers information to help job analysts to apply PAQ rating scales consistently and to help vocational evaluators apply the same scales to individual capabilities and tolerances. Examples include:

   (1) Item #1 Reading words: http://www.workerrehab.com/download/Reading_words.pdf and at

   (2) Item #88 Precision tools: http://www.workerrehab.com/download/Precision_tools.pdf

   (3) Note the distributions of ratings across all in the database, for example at http://www.workerrehab.com/download/Reading_words.pdf. Column heights show, among the 2,491 jobs, how many require reading or use of precision tools between 0.0-0.9, 1.0-1.9 and so on. This helps us to understand whether a rating as high as 2.5 reflects a medium level of importance, as it does for Reading, or a rather high level of importance, as it does for Precision tools. (Note that more than 2,000 jobs are rated between 0.0 and 0.9 on Precision tools, http://www.workerrehab.com/download/Precision_tools.pdf, and that very few jobs are rated as much as or greater than 3.0.) These distributions are designed to guide the use of the rating scales.

   (4) Medians are reported, e.g., at http://www.workerrehab.com/download/Reading_words.pdf to reflect central tendencies of ratings distributions to guide application of the rating scales.

   (5) Note examples of jobs in the PAQ database that are rated at each rating scale point http://www.workerrehab.com/download/Reading_words.pdf. These examples guide the application of the rating scales to analyze new jobs or to reflect capability or tolerance of an individual to perform the job element or item.

iii) Job analysis ratings on the 150 job elements. This purpose of this link http://www.workerrehab.com/download/150-generalized-work-activities-for-Programmer,-Engineering-and-Scientific.mht is to show the broad cov-

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erage of the 150 job elements, which are the same for every job in the database.

(1) An individual with functional limitations may not be able to perform every job element. The PAQ can be programmed to take these items into account, a process called **Setting Item Limits**. Setting item limits programs the job-matching algorithm (discussed below) to generate a list of jobs that this particular individual might be able to learn and perform.

(2) Notice which elements are rated above zero on this job: http://www.workerrehab.com/download/150-generalized-work-activities-for-Programmer,-Engineering-and-Scientific.mht. The non-zero elements show what most important elements are on this job.

iv) Algorithms that access the database to:

(1) List jobs that are potentially appropriate for individuals with disabilities or functional limitations. For example, this http://www.workerrehab.com/download/jobs-potentially-appropriate-for-an-accounting-clerk-with-decreased-sitting-tolerance.mht links to a report that lists jobs potentially appropriate for an Accounting Clerk who has decreased sitting tolerance because of low back pain.

(a) PAQ job analysis ratings for the Accounting Clerk are shown in the first section of the report: http://www.workerrehab.com/download/jobs-potentially-appropriate-for-an-accounting-clerk-with-decreased-sitting-tolerance.mht.

(b) Note that Item #108 is Sitting, and is rated 3.7, i.e., 3.7 x 5.0—considerable sitting—as we can picture in the Accounting Clerk's job. To the right of #108 in the Limit column is a 1.8. Setting an item limit of 1.8 programs the WRQ to generate a list of jobs that best match the accounting clerk's job, except with Sitting requirements of 1.8 or less.

(c) Note that Item #146 Education is also limited. Setting an item limit on #146 restricts the job match to jobs that require no more Education than the accounting clerk. The choice to set an item limit on Education depends upon individual intentions, plans or abilities to get further education.

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(d) The second section of the report
http://www.workerrehab.com/download/jobs-potentially-appropriate-for-an-accounting-clerk-with-decreased-sitting-tolerance.mht lists jobs that most closely match the Accounting Clerk job but with Sitting equal to or less than 1.8 and no more than 2.1 on Education. The number to the right of each job reflects the closeness of the match. The larger the number, approaching nearly 2,500 (jobs in the database), the worse the quality of the match.

(e) The third section of the report
http://www.workerrehab.com/download/jobs-potentially-appropriate-for-an-accounting-clerk-with-decreased-sitting-tolerance.mht lists closest-matching jobs with Sitting greater than 1.8 and/or Education greater than 2.1. This section shows on which items job requirements are greater than the item limit, and by how many rating scale points and decimal fractions of a rating scale point. In other words, 108 0.1 for the job of Mail Clerk, the first job listed in the third section of the report, means that the job of Mail Clerk requires a tenth of a rating scale point more on Sitting than our item limit of 1.8.

(2) List PAQ job analysis ratings for any job title or DOT code in the database as a basis to compare individual capabilities and tolerances to functional limitations. For example, the job of Mail Clerk is http://www.workerrehab.com/download/jobs-potentially-appropriate-for-an-accounting-clerk-with-decreased-sitting-tolerance.mht.

(a) To examine requirements for the Mail Clerk job, click on the third choice in the WRQ opening page http://www.workerrehab.com/download/opening-page.mht.

(b) The next page, http://www.workerrehab.com/download/examine-ratings-for-one-job.mht, presents the letters of the alphabet and a data entry blank. Clicking on a letter lists job titles that begin with that letter. Entering the first few letters of the job title of interest might get to the job analysis ratings more quickly than clicking on the letter.

(c) For example, clicking on the letter "M" for Mail Clerk, reaches a page that lists all jobs in the database that begin with "M" Scrolling down that list and clicking on Mail Clerk shows the job

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analysis ratings http://www.workerrehab.com/download/mail-clerk.mht.

(d) Individual capabilities and tolerances can be compared with job analysis ratings for any job in the PAQ database using one or both of the following methods:

 1. One method is to select a job in the database, set item limits to model the effects of permanent medical impairment, and run the job-matching algorithm, as in the example of the Accounting Clerk described above.

 2. The other method is to rate capabilities and tolerances of an individual to perform each of the 150 job elements, set item limits, and run the job-matching algorithm. Clicking on the fourth choice on the opening screen http://www.workerrehab.com/download/opening-page.mht begins this process

(3) Compare lists of jobs produced under different assumptions, which may be interpreted as evidence of convergent validity.

(4) Calculate test-retest or inter-rater reliability.

c) Job titles and codes listed by the WRQ that are potentially appropriate for an individual with a disability or set of functional limitations can be entered into an O*NET crosswalk in order to produce Summary or Detailed O*NET reports.

 (1) In this regard, the WRQ is a bridge to the O*NET for individuals with disabilities or functional limitations.

 (2) Assessment of return to work potential may not require O*NET information. WRQ information by itself may be sufficient to support a return to work opinion.

d) WRQ information can be used as a basis for prescribing job-related Functional Capacity Evaluations (FCEs).

8) Much of the above is summarized in a 2002 paper published in *The Forensic Examiner* that describes five tools for generating job information, each with a long development history, as they may apply to assessment of ability to work following injury or illness: http://workerrehab.com/download/assessing_occupational_effects_of_medical_im

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pairment.pdf. Since this article was published, the WRQ has become available online.