



Anybody Can Do it with the Right Tools; It Takes real Skill to do it with the Wrong Tools

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Abstract

This is practitioner-based information that is intended to provide information regarding the vocational evaluation process. A brief history of vocational evaluation as a science is presented followed by a model that can be used as the framework for the vocational evaluation process in forensic settings. Domains to be tested are identified and instruments and processes to collect data for each of the domains are included. Issues that drive the selection of tools are discussed. Finally, a case study is offered for further discussion.

Keywords

vocational evaluation, forensic evaluation, vocational evaluation process

History of Vocational Evaluation

The profession of vocational evaluation is a 20th Century phenomenon (Hursh & Kerns, 1988). The practice of vocational evaluation, however, can be traced as far back as 2200 B.C. when the ancient Chinese invented an aptitude test for use with government personnel (Rosenberg, 1973). An earlier “rough draft” of vocational evaluation, noted by Pruitt (1976), can be found in biblical times in the Book of Judges wherein Gideon is instructed to select soldiers based on a single observation. When the prospective soldiers were allowed to drink water, Gideon is instructed to select only those who “lap like dogs” and reject those who use their hands to cup the water and drink. The more seasoned soldiers would lap the water, keeping their eyes up and their hands on their weapons.

More recently, and perhaps setting the benchmark for the beginning of vocational evaluation as a formalized science, is the work of Hugo Munsterberg, an industrial psychologist. Early in the 20th century, Munsterberg was charged with the responsibility of assisting the Boston Railway Company’s with selecting new personnel. He developed what we now refer to as a “work sample” in the form of a simulated streetcar operator’s control panel. Munsterberg’s work served as a precursor to formalized work samples which proved to be one of the first approaches to vocational evaluation (Hursh & Kerns, 1988). Moving on in time to the 1960s, we began to see the development of multiple work sample systems including the JEVS (Jewish Employment Vocational Service) work sample system, the Singer System, and Valpar. Vocational evaluations during this era were labor intensive, expensive, and time

consuming. The work sample systems required maintenance and an inventory of supplies was required. Further, the systems approach was commonly augmented by psychometric testing.

As a remedy to the issues with work samples and in concert with the availability of new information, the VDARE (Vocational Diagnosis and Assessment of Residual Employability) concept was born in the early 1980s. The VDARE was unique in that it did not require face-to-face interaction, using an analysis of past relevant work and documentation of functional limitations (Sink & Field, 1981). It triggered a return to what Nadolsky (1971) termed as “the micro-analytic approach” to vocational evaluation and was the driving logic behind the proliferation of computer systems and software in the 1980s and 1990s (McClanahan, 1994). In a sense, the rebirth of the Worker Trait Factor approach to vocational evaluation was reborn when computers found their way into society and into VEs practice.

Worker Trait Factor Approach to Vocational Evaluation

The worker trait factor approach to the assessment of jobs and workers is the basis for most of the computerized job search programs. The Department of Labor data bases, a small part of which is contained in the Dictionary of Occupational Titles (DOT), include massive data sets on each job that exists in significant numbers in our national economy. The information on jobs compiled by the US Department of Labor (DOL) includes 20 physical demand factors, 14 environmental factors, the general educational development required for each job in three broad categories, the specific vocational preparation (duration and type) required for each job, eleven critical vocational aptitudes, interests in 12 “*Guide to Occupational Exploration*” (GOE) classifications, and eleven temperaments.

The most widely accepted vocational evaluation method for assessing persons with disabilities is the worker-trait factor (WTF) approach. The theoretical basis for this approach is that one can assess the traits of the worker individually, then add them up, and the sum of the component parts will be equal to the whole. This procedure has a number of advantages, perhaps the most distinguishing of which is that it can be used as an inclusive model for use of other approaches to assessment. Other advantages include the fact that it directly relates to the majority of databases that we access in vocational settings, have a common language and nomenclature, has at least a 60-year history, and can serve as the framework by which a number of employment-related services can be structured. The primary disadvantage is that the expert can become so enamored with measuring each of the individual traits (trees) that the client (forest) becomes forgotten. A valued characteristic of this approach is that it results in quantifiable information that ties directly into the DOL massive databases. These databases contain the same type of information on the composition of jobs that should be collected about the evaluatee. This feature, having quantifiable information across similar dimensions for both individuals and jobs, spawned the development and use of computers in vocational evaluation that began in the 1980s. It makes sense to use the same data so as to facilitate the evaluatee to job(s) “match.” To obtain the data specific to the evaluatee’s worker traits (the data

already exists for more than 12,000 jobs), we evaluate each factor by testing, analyzing past relevant work, analyzing educational and medical records, and various other means. The process then becomes one of selecting jobs by taking the evaluatee's profile and comparing it to the 12,000+ job databank.

The Dictionary of Occupational Titles

The DOT is at the same time the most maligned and invaluable job-related resource available today in multiple settings, and most particularly Social Security VE testimony. The value of it is in terms of its magnitude and specificity. It contains narrative descriptions of more than 12,000 jobs, quantifiable information with respect to exertional and skill categories, GOE codes, and the reasoning, math, and language levels of each job. In addition, there are multiple other factors associated with each job that are not included in the print version of the DOT that are available via computer programs. These include 20 physical demand factors, 14 environmental factors, eleven critical vocational aptitudes, eleven temperaments, census codes, MPSMS codes, and Worker Field codes, to name a few.

The shortcomings of the DOT have gotten far more press as of late than the benefits. These include the following.

- It is outdated. The most recent revision to the 4th Edition, print version, was in 1991. The Department of Labor, however, continued to update the DOT database for at least 10 years after the last revision. The problem is that many of the jobs were last updated in 1977. Many new jobs are not included, and outdated jobs are not purged.
- The Department of Labor conducted at least three job analyses on each job and may not be representative of how the job is performed on a national or local level.
- The “averaging” of job factors results in a document that might be considered “hypothetical.” Take, for example, the job of Cashier, Self-Service Gasoline #211.462-010. This job is listed as “light” by the DOT. It is possible that two job analysts observed workers who were required to unload trucks and rated the job as medium, and the third analyst saw the job as sedentary, noting the worker simply received payment and made change. This would lead to the DOT description of the job as light, despite the fact that *not one observer rated it at the light level*. This process of averaging is used for every worker trait factor found in the Department's databases.
- It has been estimated that there are more than 30,000 data entry errors in the DOT. One such example might include the classification of Cook, Fast Food #313.374-010, described as Medium, Skilled (SVP=5) work. The exertional category is appropriate, but the skill level, one that would require specific vocational preparation of 6 months to one year is clearly excessive. A task analysis from the DOT narrative job description is indicative of a job similar to Cook Helper #317.687-010, a Medium, Unskilled job (SVP=2).
- The DOT does not provide incidences of jobs at either the local or national level. There are other sources for these data, but it remains an inexact process and there is disagreement as to the steps in the process.

- The DOT does not include any jobs with a G (General Learning Ability) level of 5 (lowermost 10% of the working population). This can be translated to mean no one with an IQ of 79 or lower can work.

The O*NET

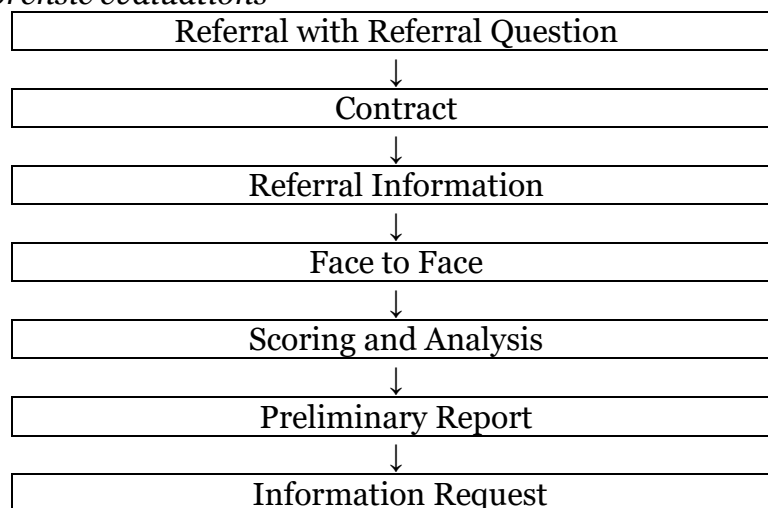
Initially touted as a source that would cure all the ills of the DOT, the O*Net (<https://www.onetonline.org/>) has fallen short of expectation in the forensic and disability determination sector and is unlikely to ever serve as an adequate replacement, particularly when specific worker traits are required. It is an excellent resource for jobs, careers, and vocational exploration but lacks the specificity of data needed in personal injury, workers' compensation, and the Social Security Disability Determination process. Although some experts might use O*NET information in Social Security hearings, further development is needed before it can be a suitable replacement for the DOT.

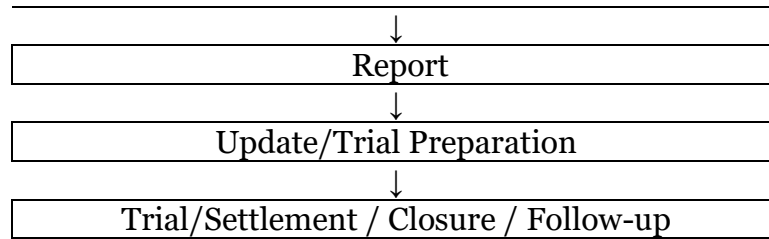
A Model for Forensic Vocational Evaluation

Nadolsky (1971) developed one of the first authoritative models for "Vocational Evaluation of the Disadvantaged" that includes multiple sequential steps for the vocational evaluation process. These steps include referral information, psychometric testing, work samples testing, situational assessment and ultimately the identification of the "ideal job." During the time that this model served as a flow chart for vocational evaluations, the process required three to six weeks of daily interaction with the person being tested. In today's forensic market, vocational evaluations are accomplished much quicker, typically completed in less than one full workday. In the present sample case that follows, less than four hours of face-to-face time with the person being assessed was required. Figure 1 might be considered a model for forensic evaluation with brief explanations of each step:

Figure 1

Flowchart for forensic evaluations





Referral with Referral Question. This is an inquiry from an attorney, usually a phone call, in which a thumbnail of the case is presented to the VE with the ultimate question being “can you help me on this case?” It may come by email or letter, but these may be discoverable, so most attorneys use the phone.

Contract. When agreement is reached, the VE can forward an employment agreement that details the services to be provided, procedures involved, and fee structure. An appointment with the person to be tested is usually scheduled in this step.

Referral Information. Once agreement of terms is reached, the attorney (or referring source) will forward relevant information.

Face to Face. Interview and testing is conducted. Many times it is accomplished in the attorney’s office, but can be performed in any setting that is appropriate for testing.

Scoring and Analysis. Tests are scored, records are reviewed, and a preliminary assessment is formulated.

Preliminary Report. Many attorneys request a preliminary report in verbal form, and some include it in the employment contract. The reason this step can be helpful is the reason for the next step.

Information Request. During the Preliminary Report, the VE may identify something that is missing, or make a recommendation that helps fully evaluate the case. For example, in the case where the VE has identified sequelae associated with head injury that has not yet been considered, a neuropsychological evaluation might be recommended.

Report. Once the needed information is available, a report is generated. This can be verbal or written.

Update/Trial Preparation. It is the norm rather than the exception that a significant period of time goes by after the report is generated and an actual trial is scheduled. Usually this period is months, but it can be a year or more. Any information that has developed in the interim between the Report and the trial needs to be considered and adjustments made. Some retesting may be warranted as well.

Trial/Settlement / Closure / Follow-up. In whatever fashion the case is resolved, it is time to close the case unless there are services that can continue to be provided. These services may include career counseling and guidance, help with job development and placement, or agency referral. In any case, follow-up with the person tested and/or the referral source can provide valuable feedback as to the efficacy of the work performed by the VE.

Case Study

Mr. M. Lindsey is a 51-year-old male who was referred for an assessment of vocational prognosis by his attorney in relation to a motor vehicle collision that he suffered late in 2014. List of instruments and techniques used:

Vocational Interview

Visual Analog Pain Rating Scale Technique

Wide Range Achievement Test-Revision 4

Wechsler Abbreviated Scale of Intelligence - Second Edition

Sage Manual Dexterity Test

Purdue Pegboard

Review referral information

Referral information. Grady Hospital; Orthopaedic Specialists; Behavioral Medicine; Neurology Associates; Mayo Clinic; Pain Management Center; *Employer's First Report of Injury*; Physical Therapy, miscellaneous.

History of Onset/Background Information. Mr. Lindsey related a history of a December 2014, motor vehicle collision: "My 18-wheeler was hit by drunk driver." He suffered a loss of consciousness and was uncertain how long he was out. He was treated at the emergency room, but his problems continued with pain and dysfunction to the right side of his body and head. He was able to return to work, "light duty" for a few weeks in a desk job, but he had no specific duties. A few weeks later he was referred to The Orthopaedic Clinic and was taken out of work. He was advised his "nerves are out of whack" and told that he would not be able to return to work as a truck driver.

Following multiple doctor visits, an MRI, and physical therapy, Mr. Lindsey remained in pain and was not returned to work. He went to have his CDL renewed and failed the exam. He eventually was referred to the Mayo Clinic and was diagnosed with severe chronic pain syndrome and fibromyalgia.

Mr. Lindsey's medical history, other than the above, includes nothing that would be expected to limit employability. He is on no medications as he has no insurance or money. He has gained almost 50 pounds since onset and attributed the weight gain to depression and an inability to exercise.

Claimant's Perception of Functional Abilities. Mr. Lindsey reports that he can reasonably handle 15-20 pounds. He alternates sitting and standing at 20 to 30-minute intervals, and he can walk a couple of blocks. He is able to drive. He has issues with vertigo, so he is unable to trust his balance. He avoids stooping, kneeling, crouching, and crawling as these activities are painful. Reach is limited by neck pain, and he has a loss of grip strength. He is right-handed.

Mr. Lindsey noted that his depth perception seems impaired since the wreck, and that he suffers

with ongoing headaches, short term memory loss, hyperphotosensitivity, and incoordination. He complained of problems with word selection when talking (expressive aphasia), he forgets conversations, and he has ringing in both ears. He denied any of these problems before the wreck.

Pain Assessment. Mr. Linsey described ongoing pain in multiple areas. He rated the intensity of the pain using *the Visual Analog Scale Technique* (zero is no pain and 10 requires an immediate trip to the emergency room; see Table 1) for the 30 days prior to the evaluation.

Table 1

Visual Analog Scale for Mr. Linsey

Location	At beginning / end of testing	Typical (past 30 days)	Worst (past 30 days)	Least (past 30 days)
Right lower extremity	4 / 9	5-7	9+	4
Back	4 / 9	7-8	9+	4
Neck	5 / 8	6-7	9+	5
Head	4 / 7	4-7	9+	4

Emotional Adjustment. Mr. Lindsey admitted to struggling with depression and described feelings of worthlessness. He was seen by a psychiatrist and wants to continue when he has the funds or insurance.

Education / Training. Mr. Lindsey dropped out of high school in the eleventh grade. He obtained a GED in 1994 and completed one year of community college. He has no military experience.

Employment History. Mr. Lindsey is a career Truck Driver for the past 25+ years.

Test Results

Academic. Mr. Lindsey's *Wide Range Achievement Test-Revision 4* (WRAT-4) scores (see table 2):

Table 2

WRAT-4 Scores for Mr. Linley

	Raw score	Standard score	Grade score
Word Reading (WR)	57	93	11.9
Sentence Comprehension (SC)	47	92	11.9
Spelling (S)	39	90	10.6
Math Computation (MC)	34	90	7.0
Reading Composite (RC)*	185	90	11.7

* Reading Composite is a derived score of WR and SC, combined.

Intelligence. The Wechsler Abbreviated Scale of Intelligence - Second Edition (WASI-II) is an IQ test designed to assess specific and overall cognitive capabilities. It is a battery of four subtests: Vocabulary, Block Design, Similarities and Matrix Reasoning. In addition to assessing general, or Full Scale, intelligence, the WASI-II is designed to provide estimates of Verbal and Performance intelligence consistent with other Wechsler tests. Specifically, the four subtests comprise the full scale and yield the Full Scale IQ (FSIQ-4). The Vocabulary and Similarities subtests are combined to form the Verbal Scale and yield a Verbal IQ (VIQ) score, and the Block Design and Matrix Reasoning subtests form the Performance Scale and yield a Performance IQ (PIQ) score. Mr. Lindsey demonstrated a Verbal Comprehension score of 95, Perceptual Reasoning 94, for a Full Scale of 94, which is in the Average range.

Vocational Aptitudes. Aptitudes are the capacities or specific abilities that an individual must have in order to learn to perform a given work activity. For this analysis, Mr. Lindsey's previously referenced academic and IQ scores, the Purdue Pegboard, and selected components from the Sage Vocational Aptitude Battery were considered. His scores are compared to competitively employed workers and presented in DoL's classification system in table 3.

Table 3

Comparison of Scores

Aptitude	Percentile Ranking	Normative Comparison
General Learning	34-66%	average
Verbal	34-66%	average
Numerical	34-66%	average
Spatial	34-66%	average
Form Perception	34-66%	average
Clerical Perception	34-66%	average
Motor Coordination	0-10%	significantly below average
Finger Dexterity	0-10%	significantly below average
Manual Dexterity	0-10%	significantly below average

Vocational Appraisal

[Author Note: The *Vocational Appraisal* section includes a recap of the evaluation, analysis of test scores, and a summary of the relevant medical documentation. For this case study, the analysis of test scores is presented followed by the recommendation for a neuropsychological evaluation. The conclusion reached was that Mr. Lindsey is incapable of employment].

It is noteworthy that the medical record is replete with many of the symptoms that Mr. Lindsey described during the present evaluation that may be sequelae of brain injury, and the precipitating event (i.e., motor vehicle collision) is commonly associated with brain injury. Specifically, the symptoms include psychological changes, short term memory loss, hyperphotosensitivity, incoordination, vertigo/balance problems, tinnitus, expressive aphasia, and visual changes. A neuropsychological evaluation is required for diagnosis and is

recommended.

Present testing resulted in reasonable scores given Mr. Lindsey's reported history, and there is good consistency for validation purposes. He has a GED with one year of community college and demonstrated achievement scores commensurate at the 11.9 in Word Reading and Sentence Comprehension. Spelling performance is at the 10.6 grade level, with Math Computation at 7.0. The multigrade disparity among the scores, combined with average range IQ scores is suggestive of a mild learning disability; further testing is required for diagnostic purposes. A comparison of the mean from standard scores of achievement testing (91) to his tested IQ (94) is in the range of expectation and suggestive of consistency of effort and overall validity. Upper extremity testing that included manual and finger dexterity resulted in significantly below average scores which are felt to be reflective of his presenting medical issues.

At the Deposition

About five months after the report was tendered, my deposition was taken. Prior to the deposition, I asked for and received updated medical records and called Mr. Lindsey. He told me that the intensity of his pain ratings had dropped somewhat as a result of an effective pain management program, but that he still experienced daily pain that reached a seven or greater on the pain scale. The medications continued to cause daytime somnolence, but he said he would rather sleep than suffer with pain. He had also undergone a neuropsychological evaluation that documented a mild to moderate brain injury.

During the deposition, the lawyers representing the insured (there were at least two companies being sued) questioned every element of my work on the case. They were thorough. They had at least ten copies of depositions I had given in other cases and were looking for inconsistencies. There were none (or if there were, very minor ones). Because my evaluations are fairly standardized, I have learned not to dread these inquiries and am receptive to explaining issues. I am driven by our ethical tenets. In every vocational evaluation, there must be specific reasons for each and every step in the process. It is an ethical violation to simply test someone because the test is a way to spend time. In forensic evaluations, the VE quickly learns that every test and procedure is going to be scrutinized. Table 4 summarizes my testimony as it related to the tools and techniques I used, and why I used them.

Table 4

Summary of Testimony

Domain	Source	Rationale / Comments
Physical Demands & Working Conditions	Referral information; Vocational Interview; Behavior Observations	FCEs require comment in Report. Note differences of FCEs, Behavior Observations and self-assessment from Vocational Interview
General Educational	Wide Range Achievement	WRAT4 covers necessary

Development	Test 4; Vocational Interview	domains, is well normed and used, and is relatively quick. Comparison of attained versus functional academic levels;
Aptitudes	Wechsler Abbreviated Scale of Intelligence (WASI); SAGE Vocational Aptitude Battery (selected components); Purdue Pegboard	WASI has high correlation coefficient with WAIS IV; SAGE VAB dexterity tests are well normed and allow good observations. PPB is a standard in the industry and has good norms and opportunity for observations.

One of the obvious differences between the vocational evaluation process in forensic and non-forensic settings is the possible presence of secondary gain. In forensic settings, motivation of the person being tested is often called into question, whereas, in non-litigated settings participation is commonly voluntary (thus eliminating the concern for secondary gain). Therefore, in forensic settings, concern is necessarily directed to consistency of data collected from the person being evaluated with medical and ancillary medical records as well as internal consistency of test data. Note in the testing recap in the Vocational Appraisal section of this case study the degree to which consistency of effort and test scores are discussed. This is in direct response to the issue of secondary gain that is so often alleged. Furthermore, as provided in the table above, rarely is one test or procedure considered to assess a particular domain. In most cases, triangulation of data is the standard.

After the Deposition

The case was mediated about a week after my deposition was taken and the case was settled. The settlement was “closed,” meaning the parties agreed that the details of the settlement were not to be disclosed. The attorney later told me that my report and the documentation of the head injury via the neuropsychological valuation more than doubled the defendants’ offer to settle. I guess he did not recall telling me during our initial contact about the case what was being offered.

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