EVIDENCE-BASED VOCATIONAL EVALUATIONS
ABVE Presentation Summary & Notes
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The concept of vocational evaluation is based upon the collection of vocational information relevant to the goals and purpose established by referral. Utilizing a scientific method (Stein 2002) for guidance in the data collection process and the development of the specific vocational evaluation process is the foundation of the evidence-based process. Data are collected per specific vocational evaluation models used, such as RAPEL or VRAM, and are designed to address measurement objectives addressed in the referral process. That data is used to identify specific functional capabilities of an individual for exertional demands, cognitive abilities, academic skills, worker personality, occupational interests, and the capacity of the evaluee to engage in work-like activities. Vocational evaluations can be used to assist individuals in self-evaluation and selection of appropriate career goals. Forensic vocational evaluations can be used to determine specific, measurable capacities to engage in work performance, ranging from the ability to engage in any competitive employment to the ability to engage in a specific occupation or job.

Evidence-based vocational evaluations refer to the process that data is collected, measured, and analyzed, which can be considered more of a framework applied to the model. The process of the evidence-based vocational evaluation relies on facts and data that can be measured by statistical analysis (normative referenced measurement) or specific criteria established by referral information (criteria referenced measurement). Evidence-based vocational evaluations must meet the criterion for substantial evidence (substantial vocational evidence) and must be based upon the application of the scientific method. David Stein Ph.D. referenced Rule 702 of the Federal Rules of Evidence (FRE) and the Daubert v Merrell Dow Pharmaceuticals case as a foundation for the need to utilize a scientific method for admissibility of scientific evidence, but only if it was both relevant and reliable. Mary Barros-Bailey Ph.D. further clarified the issue of data versus evidence using the Evidence Source Model (ESM) by providing operational definitions for data, evidence. She used the Evidence Source Model to identify primary and secondary data as the foundation for the application of the scientific method in vocational evaluation.

The evidence-based vocational evaluation process requires the collection and analysis of measurable data in an organized and consistent manner. The selection of measurable data will depend upon the vocational evaluation model selected and the specific referral questions (measurement objectives) that need to be addressed. Measurable data most familiar would be found in vocational testing that utilizes normative-referenced measurements. May vocational experts tend to limit their data collection to normative measurements that rely upon statistical analysis that contains validity and reliability coefficients as scientific support for the conclusions reached. Performance is compared to specific populations with identifiable characteristics.

Vocational testing is used to measure an individual's work-related functional capacities for general and specific cognitive abilities, academic achievement, and manual dexterity. Standardized vocational testing is primarily normative-based in results and is supported by reliability and validity studies that support objective results, although there appears to be a trend towards criterion-referenced measurement tools. Vocational tests are selected for administration based upon the need for the collection of specific data and may vary depending upon the vocational evaluation need criteria.

Cognitive testing involved with the vocational evaluation process can be general and designed to assess general problem-solving abilities. Cognitive testing can also be selected to measure specific work-related aptitudes such as mechanical reasoning, clerical aptitude, verbal-educational aptitude, etc.

Academic skill testing is the measurement of an individual's academic abilities, generally involving the basic reading comprehension and mathematical skills by developmental norms (standardized scores), or by comparison to selected normative groups such as specific occupations.

Dexterity testing accurately measures functional abilities for upper extremities and is standardized for validity and reliability. Dexterity tests measure fine finger coordination, finger rate, hand speed, and bimanual dexterity. Measured results are compared to normative groups from various industrial and vocational settings.

Vocational evaluations can also include work sampling and situational assessments, which may be based on behavioral observations. The evaluee is asked to perform specific work-related tasks that have been formalized for specific measurement criteria, such as a work sample. Work samples are constructed to measure work-related functions or general work performance. Some work samples are standardized with measurable objectives, normative data for comparison, and include reliability and validity measurements. Situational assessments are used to measure behavior in a work environment. Situational assessments are generally criterion-based evaluations involving behavioral observations of the evaluee engaged in work-like activities and measured by completion of the task.

What is often overlooked is the use of criterion-referenced data, when information is not based upon statistical analysis for reliability and validity. This source of data may not be considered due to a perception that there is a lack of normative-referenced data that would support the conclusions reached. However, when using a criterion-referenced measurement tool, this data can be established as substantial evidence, if properly defined and documented.

Criterion reference evaluation is just another measurement tool. Normative referenced tools utilize statistical forms of measurements that compare to the performance of normative groups. Validity and reliability coefficients are necessary to ensure the accuracy of the measurement tool. Where normative reference evaluations rate levels of performance, criterion-referenced measurements measure a singular, static aspect of performance on an either-or basis.

Consider the evaluation conducted by the Social Security Administration for the disability of a specific medical condition. The Federal Code of Regulations defines disability for each medical condition and determines medical conditions disabling when specific medical factors are present that "meet or equal the listings"...Vocational experts are given "hypothetical situations" and then asked if the claimant can or cannot engage in employment-based upon a set of specific vocational factors. When conducting a vocational evaluation to determine exertional capacities for a job or occupation, found in the Dictionary of Occupational Titles', Handbook of Analyzing Jobs, and related source documents that provide definitions for work (Sedentary, Light, Medium, Heavy, and Very Heavy) have been identified. The evaluator compares the exertional demands of a specific occupation or job to the D.O.T definitions and the results are compared to the parameters of the hypothetical situation accordingly. Rather than a statistical analysis, conclusions are based upon the either-or conclusion that conditions are met or not met.

Thus, when Dr. Barros-Bailey defined Evidence in her article, she determined that…" data is transformed through a process or series of processes. When we ask What, When, Where, Who, Why, and How questions of the data, we derive and allocate meaning to their static nature."

Criterion-referenced evidence can be from interviews with evaluees, subject matter experts, or other collateral sources such as reports prepared by identified experts, depositions, or in components of the formal vocational evaluation. Components of the vocational evaluation process include, but are not limited to the review of specific medical or legal information, by an interview with a physician to collect specific medical information, and interview with an evaluee to obtain work history information, past education/training, and related personal information.

The critical aspect of this data collection process is the structure of the questions in that they are consistent in design with little variance from the pre-determined criterion-referenced script. In addition to data collected from the interview with the evaluee, information from medical and legal documents may be relevant.

Obtaining an accurate work history and description of work activities/job duties is critical to ensure accurate characterization of the occupation or job, as it is performed on the national economy as well as the individual job in question. Variances in job duties can affect the analysis for acquired skills, a necessary aspect of the transferable skills analysis process. It is necessary to accurately define occupations identified in the work history or position at the time of injury to avoid inaccurate vocational analysis.

Medical and/or legal documents can provide critical information relevant to evaluee job functions, work history, educational/training accomplishments, and medical impairments. This information is classified as primary or secondary information as noted in the Evidence Source Model (Barros-Bailey, 2018). Medical information will describe the degree of medical impairment and can be tracked from medical diagnoses, medical testing, physical examination, and analysis by the medical expert. Medical information requires analysis of the vocational impact of disabling factors.

Vocational evaluations can include vocational testing designed to measure cognitive abilities, academic skills, manual dexterity, worker personality, and ability to engage in work-like activities (work samples, situational assessments). Vocational evaluations can also include observations of an evaluee in a pre-determined structured environment such as a situational assessment. The critical factor as described by Dr. Barros-Bailey is based upon five steps for observations she referenced from Hancock and Algozzine that provide the criteria for measuring behavior and/or performance. This forms the basis of the criterion-referenced measurement process. The vocational interview is designed to collect specific information/facts from the evaluee regarding work history, educational achievements, training completed, and additional activities involving skill application. The work history and educational achievements are used as a basis for the identification of acquired skills and subsequently transferable skills. The vocational evaluator uses source documents to characterize and analyze past employment by job title, dates of employment, and tenure in the occupation.

Some vocational evaluators use the Dictionary of Occupational Titles, 1991 edition and/or the O*NET Online program to assist in the analysis/characterization of past work history. However, the Dictionary of Occupational Titles, 1991 edition has not been regularly updated with new jobs and job classifications, thus rendering this source document lacking in current information. The

O*NET Online program has been highly effective as a tool for individualized career exploration as it provides useful information regarding occupations in general for knowledge, skills, abilities, and interests. However, it does not provide analytical data (statistics) for the transferable skills analysis and it is less than reliable in terms of measurable outcomes.

Vocational evaluators may use published computerized software programs to assist in the transferable skills analysis process. Computerized software programs such as the McCroskey Vocational Quotient System (MVQS), SkillTRAN, and Occu Collect allow for the organized collection of specific data pertaining to occupations, jobs, as they relate to the collection of relevant vocational data required in the systematic analysis of jobs identified from the evaluee's work history and job functions. The MVQS is based upon the Minnesota Theory of Work Adjustment and utilized 24 different worker traits identified in the Dictionary of Occupational Titles (24 Most Vocationally Significant Worker Traits) which is compared to the same 24 worker traits found in the job bank of approximately 12,000 primary jobs. The MVQS has updated the Dictionary of Occupational Titles for use in its system. This program conducts a statistical analysis of an individual's work history in terms of each of the 24 worker traits. When all worker traits are combined, the final, cumulative result documents the highest level for each of the 24 worker traits. The MVQS has been standardized for the validity and reliability of its process, which supports the evidence-based process. Similarly, SkillTRAN conducts a similar process for transferable skills analysis, which is widely used to determine the transferability of skills that connect with present and potential jobs and occupations. OccuCollect collects specific occupational information from the D.O.T., O*NET, and the Bureau of Labor Statistics that will assist in the clarification of work activities and the acquired skills needed for accurate analysis of individual jobs performed by the evaluee.

Vocational evaluations can also include work sampling and situational assessments. The evaluee is asked to perform specific work-related tasks that have been formalized for specific measurement criteria, such as a work sample. Work samples are constructed to measure work-related functions or general work performance. Some work samples are standardized with measurable objectives, normative data for comparison, which include reliability and validity measurements. Other work samples are better served as a basis for observations as a form of situational assessment or behavioral observation utilizing a criterion-referenced method of assessment. Situational assessments are used to measure behavior in a work environment. Situational assessments are generally criterion-based evaluations involving behavioral observations of the evaluee engaged in work-like activities and measured by completion of the task.

The behavioral observation process used during a vocational evaluation is designed to support the results of the medical evaluation for impairment and is a critical component of the vocational testing process. Clinical observations of an individual are based upon measuring gross physical performance as well as the interactive responses of the evaluee during the vocational evaluation. Behavioral observations must be clearly defined by the specific behavior or action and results should be documented on a criterion-referenced basis. Examples of such behavioral observations may address an individual's ability to engage in sitting and/or standing involved with competitive work activities. The evaluator may record the number of times in a given period that the evaluee changes position and how the position changes occur. The evaluator may measure the number of pain breaks taken by an individual during a specific period by documenting frequency, duration, and, perhaps, comments from the individual.

The final component to consider in an evidence-based vocational evaluation is the report. Documentation of the vocational evaluation process from the measurement objectives to the analysis of data and the conclusions derived from that analysis supports conclusions and opinions of the vocational evaluator. The vocational evaluation report provides the foundational structure for the report format. Measurement objectives identified in the vocational evaluation referral process define the parameters of the evaluation, and more specifically, the development and use of the measurement tools used in the evaluation.

A "thread" exists from the measurement objectives identified in the referral which applies to the model used as measurement tools developed to conduct the vocational analysis leading to conclusions and opinions. Documentation of that process is critical for structural support of the evidence-based evaluation and conclusions reached.

The report format is based upon the vocational evaluation model selected, which may be modified by referral or measurement requirements. What vocationally relevant issues need to be measured? What outcomes does the referral source need to be identified?

The purpose of the vocational evaluation will often direct the establishment of evaluation objectives and resulting measurement criteria. For example, a personal injury case is defined by the nature of the plaintiff's claim for damages, combined with the impact of federal and/or state laws. If issues involving the Americans with Disabilities Act have been documented, then measurement objectives will be defined accordingly. A long-term disability case is defined by policy definitions for "own occupation and/or any occupation" will establish the measurement criteria and process. Although the basic model remains intact, modifications may be made according to the referral requirements.

As the structure of the evaluation report is developed, then the method of data collection and analysis can be identified and documented. What data is to be measured and Why? What measurement criteria are to be used for data collection and analysis? How will data apply to the measurement objectives?

Documenting data collection and analysis must reference measurement criteria, the foundation for criterion-referenced measurement. For example, when utilizing a situational assessment designed to document behavioral observations, the vocational evaluation specialist may consider exertional demands according to the Dictionary of Occupational Titles definitions for work. This provides the opportunity for the vocational evaluator to document behavioral observations and then compare those observations to specific parameters for work activities at the Sedentary Work level. This measurement becomes an "either-or" proposition, in that the evaluee either is or is not able to meet the parameters of that work classification.

Documentation of the measurement parameters provides the structure or framework for the measurement process, allowing for an accurate basis for conclusions and opinions. It is necessary to document this process completely to address the "What", "Why", and "How" issues for measurement purposes. What evaluation process was done, why the evaluation process was used, and how was that evaluation process accomplished is necessary to support findings and conclusions.

Vocational Evaluation reports are best served if a thread established in the referral section is followed completely throughout the process of the evaluation report to the findings, conclusions, and opinions. Identifying the measurement objectives, establishing measurement criteria, documenting data collection and analysis forms the thread of the evaluation and allows for the critical factor of continuity referencing what is to be measured to the findings, conclusions, and opinions. Without documentation of that process, data is nothing more than data and facts remain facts. Facts will be considered evidence only when organized, analyzed, and documented by the vocational evaluator.

SUMMARY POINTS FOR EVIDENCE-BASED VOCATIONAL EVALUATIONS:

1. Must be a systematic process that is consistent with the Evaluation Model identified such as VRAM or RAPEL.

2. Supported by an inclusive model for classifying the different kinds of data-turned-evidence such as the Evidence Source Model (Barros-Bailey 2018), the identification of facts that are analyzed to establish evidence provides a solid, defendable vocational evaluation.

3. Establishes measurement objectives based upon referral requirements and information

4. Uses well-defined measurement criteria (measurement tools such as normative-reference or criterion-referenced assessments) that address measurement objectives.

5. Utilized “the thread” from measurement objectives through measurement process that will lead to findings, conclusions, and opinions.

6. Documents the process that is supported by an explanation of the “What”, “Why”, and “How” of the facts gathered and analyzed that lead to findings and conclusions.

REMEMBER:

Data is just data until analyzed. Much of the data collected can be considered a “snapshot” collected at a specific time from or about an individual. It is noted that some data that is longitudinal (historical information) is not necessarily characterized as a “snapshot”, but must be considered for accuracy Variances in the data will occur and must be taken into consideration. Don’t forget to look at the data as a whole and well as individually. Consistency and continuity of data allow us to adjust for “outliers”, just as done when engaged in statistical analysis. Daubert challenges become a risk when one relies on one piece of data to explain findings and conclusions. Always consider the “thread” of the evaluation and look for consistency of results in and between each section of the evaluation.