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Knowledge Enhancement Seminar
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ABVE KNOWLEDGE ENHANCEMENT SEMINAR

- Area 1: Psychological Testing and/or Psychology
- Area 2: Vocational Testing and Work Sampling
- Area 3: Physical Capacities
- Area 4: Handbook of Analyzing Jobs (HAJ-R)
- Area 5: Job Placement
- Area 6: Dictionary of Occupational Titles
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- Area 14: Life Care Planning
- Area 15: Pain and Pain Management
- Area 16: Occupational Density

AREA 1:

PSYCHOLOGICAL TESTING and/or PSYCHOLOGY

Emotional Trauma

Effects of external events, which can produce undesirable physical changes in the brain.

Causes symptoms that produce **measurable** declines in occupational performance and represent **vocational deficits** which can be tracked and identified in terms of diminished capacities on **10 of the 24 most vocationally significant worker trait variables** (R, M, L, S, P, Q, K, F, M, E).

R, M, L – drops from fatigue and concentration problems.
S, P, Q – impaired when a person is distracted or depressed.
(Q impairment stems from diminished attention to detail in written and tabular material is the single perception variable that, typically, shows the most impairment.)

Tests requiring more intense concentration toward the end of the testing day will likely provide more accurate vocational information for emotional trauma clients than placing such tests at the start of the testing day. (MCT, MMPI-2, and WAIS-III). Order of testing is very important in cases involving emotional trauma. Results will be better in the AM than the PM. Fatigue and concentration problems begin to affect test results more during the 4th and 5th hour of testing.

The **learning event** (single episode) produces fear or possible repression. Learning from curiosity **expands** behavior. Learning from emotional trauma **narrows and restricts range of behavior**.

Post Traumatic Stress Disorder (PTSD)

First classified as a psychiatric disorder in 1980. Vocational Evaluation with PTSD (1) emotional trauma can't be directly measured; (2) assess and document changes in process by measuring and comparing pre- and post- measures of functioning; (3) cognitive capability is most likely documented by measuring a) ability to abstract information; b) attend to details; c) stay on task; and d) limitation to concentration associated with emotional and physical fatigue. Early abuse increases symptoms. Lower intelligence is also a factor. Resulting changes in functioning more debilitating than the original trauma. Physical alterations in the brain processes (structure and functioning) become diagnosable condition.

Goodwin (1987) researched Vietnam Veterans:

- 1) Chronic and Delayed Depression - Symptoms: Sleep disturbance, psychomotor

- decline, feelings of worthlessness, difficulty concentrating, very developed sense of helplessness, and substance abuse.
- 2) Isolation – few friends, distant from others
 - 3) Rage – extreme emotions, such as rage, are frightening. PTSD individuals strike out for no apparent reason.
 - 4) Avoidance of Feelings and Alienation – emotional coldness, uncaring and distant; inability to experience the joys of life; feeling emotionally dead.
 - 5) Anxiety Reactions – very vigilant; tuned to anything out of the ordinary i.e. unexpected noises, sights, etc.; can produce dramatic and unexpected responses.
 - 6) Sleep Disturbance – hours before sleep very uncomfortable; stay awake as long as possible. Smoking pot or drinking to dull uncomfortable thoughts. Where there is nothing to occupy their minds, thoughts wander and can be traumatic.
 - 7) Intrusive Thoughts – obsessive thoughts might be triggered by common, every day experiences (sights, smells, touches, sounds, etc.)

Testing Standards

A standardized test is an objective sample of some aspect of human behavior. The terms *standardized* and *objective* stipulate that the test is structured, administered, scored, and interpreted in an established and uniform manner that is independent of the subjective biases, opinions, and judgements of any individual administrator. A standardized methodology is critically important for assuring fairness and suitability for the population to which it is administered. Standardized tests are also objective in that reliability and validity are statistically analyzed. The difficulty levels of test items are experimentally tested and adjusted based on administration to appropriate samples of the target population (Cohen & Swerdlik, 2005).

Test Selection

When selecting appropriate tests, it is essential to consider the purpose of testing. What are the referral questions? If referring an individual for testing, take the time to clarify the reason for referral. The demographics of the individual must also be considered as well as any constraints such as time or budgetary limitations or need for accommodation.

There are a number of sources of information to learn more about particular tests. These include the Mental Measurements Yearbook, Tests in Print, and publisher web sites and catalogs. Review these resources to prepare a list of tests that suit your intended purpose and then compare the tests with respect to practical considerations for administration, and information pertaining to norms, reliability, validity and fairness. Practical considerations include the cost of testing materials, availability of computerized scoring and reporting, method of administration and qualification or training requirements for test administrators.

The following checklist can be helpful in regards to legal and ethical concerns (Drummond & Jones, 2006):

- _____ I have the educational and experimental background to administer the tests I have selected to use.
- _____ The tests are valid for the purposes I have identified.
- _____ I have sufficient information about the client's cultural, linguistic, social, and educational background.
- _____ I have received informed consent from clients if of age.
- _____ I have received consent from minors' parents or guardians.
- _____ I have discussed the reasons for the test with clients.
- _____ The clients see the value of the testing.
- _____ I have explained the limitations of the tests to be given.
- _____ I have discussed how the tests will be used.
- _____ I have discussed how the data will be stored and who will have access to the data.
- _____ I will promise to seek written approval to share the confidential information.
- _____ I will provide feedback in language that each client can understand.

Test Administration

To ensure reliability, a test must be administered in a uniform manner to all test-takers even though it is given in different locations or on different dates. Use of a checklist can be very helpful for an administrator to ensure that the test administration procedures are standardized.

Test Fairness

Test fairness is an especially important consideration when administering tests to individuals with disabilities. The evaluator must determine whether the client is represented in the norm group on which the test results were standardized. If tests are administered to those who are not sufficiently similar to the norm group, the evaluator must report this and discuss the test results in relation to this issue.

The Americans with Disabilities Act requires reasonable accommodations for those with physical or cognitive limitations. According to Power (2006), the types of testing accommodations usually fall in three categories: testing medium, time limits, and/or test content.

AREA 2: VOCATIONAL TESTING & WORK SAMPLING

Vocationology = the study of human capabilities relative to vocational requirements and development of worker-trait-factor systems to match people with jobs.

Frank Parsons (1909) – “Father of Vocational Guidance”

- (1) Knowledge of the requirements and conditions for success in different lines of work, as well as related advantages and disadvantages, compensation, opportunities and prospects. (Knowledge of the world of work)
- (2) Clear understanding of the aptitudes, interests, ambitions, resources and limitations of the client. (Self-knowledge and insight)
- (3) Systematic techniques for integrating these two sources of information in the vocational decision making process.

Battery of vocationally relevant tests has been better than those used as lone predictors of employability.

Vocationally relevant measures must be:

Standardized, reliable, valid, and interpreted in terms of relevant job requirements relative to general adult worker norms.

ORIGINS OF JOB-PERSON PROFILE MATCHING

Initially began to help veterans get job who were disabled. Depart of Labor (DOL) began in the early 1930s to conduct a widespread study on job requirements. The goal was to reduce or eliminate the impact of vocationally disabling conditions.

A Theory of Work Adjustment (1964) was structured at the University of Minnesota to guide the on-going Minnesota Studies in Vocational Rehabilitation. It significantly extended its predecessor by profiling and matching the **needs** of individuals against **reinforcers** associated with a job that met those needs. Also added a solid **worker-trait-factor** theory based on the research model.

Psychology emerged as a discipline in the late 1800s with medicine began the task of categorizing people and human capacities. Vocational capacity became important. **Worker Traits and Trait Factors** were conceived and began to take definition in terms of human capacity relative to job demands.

Binet and Wechsler emerged as champions of intellectual measurement with the development of mental age scores and, subsequently, deviation quotients, respectively.

Thurstone – studied tests of abilities and factor analyzed them in an effort to better describe and operationally define the measured worker-trait-factor aptitudes.

General Aptitude Test Battery (GATB) – 12 subtests. Aptitude battery could produce measures of nine basic aptitudes (worker-traits) considered essential for work.

United States Employment Service (USES) developed the Occupational Analysis Field Centers (OAFCS) which formulated a basis for standardizing job description and job-person matching for helping returning disabled veterans from WWII and the Korean War return to work.

VDARE = Vocational Diagnosis and Assessment of Residual Employability Process

- Developed specifically to shorten the time taken to determine vocational potential.
- VDARE Process was shown to be relatively fast and effective method of handling large volumes of client diagnostic information.
- Positive reliability, validity, and utility of the information output using VDARE.
- Assumes that the client having demonstrated certain worker traits required on past jobs, could again meet these job demands, barring vocational restrictions stemming from disabling conditions.
- Client work history establishes a baseline or Unadjusted Vocational Profile (UVP). Once the baseline is established, vocationally relevant medical, psychological, social, educational, and vocational information collected on the client adjust the profile. The resulting profile is the Residual Employability Profile (REP).
- Other VDARE considerations: Interests (preferences for certain types of work activities); Temperaments (types of occupational situations to which an individual must adjust); Physical Demands (physical activities required in work situations); and Working Conditions (physical surroundings prevalent in jobs).

Most frequently disabling conditions are *musculoskeletal* and *cardiovascular* impairments followed by mental and nervous system disorders.

** More information does not necessarily lead to more effective or accurate decision making. Too much information may inhibit the effectiveness or decision making.

Transferability of Skills = applying one's demonstrated work skills acquired during the performance of past relevant work history (jobs held in the last 15 years) to meet skill demands of semi-skilled or skilled jobs in which the same, or a lesser degree, of skills required.

PRECEDENT

Celebreeze v. King (1963) Judge Swinford had the qualifications of the Vocational Expert read into the record. Set a precedent. Provides basic guidelines and parameters within which a VE's credentials, work experience, and testimony about his or her conclusions maybe accepted as reasonable.

- Different tests and measures relative to different norm groups over time yield different results.
- General Adult Worker Norms should be used when such norms are available. Clinical judgment should be used to determine most reasonable norms to approximate Adult General Norms.
- The most recent test version be used, later versions are typically better, but NOT always, more desirable.

- Measures should be standardized, reliable, valid, and interpreted in terms of relevant job requirements to reasonable approximations of general adult worker norms.

Work Sample Assessment

Work samples are assessment tools that replicate as closely as possible the tasks, tools and materials found in an actual job or occupational group. The formal definition of a work sample is as follows:

Work sample - A well-defined work activity involving tasks, materials, and tools that are identical or similar to those in an actual job or cluster of jobs. Work samples are used to assess a person's vocational aptitude(s), work characteristics, and/or vocational interests (Dowd, 1993, p. 32).

Dowd (1993) also identified specific types of work samples: cluster trait sample, job sample, simulated work sample, and single-trait sample. A cluster trait sample is an assessment of ability on a sample that is representative of a group of related jobs that have similar performance requirements. A job sample is a replication of an actual job using the same procedures, equipment, tools and materials and adhering to the same work standards. A simulated work sample replicates the essential tasks of a job as it is performed in a competitive work setting. A single-trait work sample assesses a single performance characteristic that may be relevant to a single job or a group of jobs.

The predictive validity of the work sample depends upon the representativeness of the work tasks and upon the reliability of the test-takers performance and behavior. Some of the advantages of using work samples are as follows:

- Work samples do not require reading. Instruction is provided verbally with demonstration by the evaluator. The test-taker's language preference does not matter as long as the evaluator can provide instruction in the preferred language. Work samples can also be useful in assessing an individual's learning style.
- The test-taker is able to experiment with different job tasks to determine vocational interest and ability.
- The evaluator is able to observe work behaviors to include pace, persistence, and accuracy of performance.
- Work samples assess an individual's ability to meet the physical demands of a job or occupation.
- Samples have face validity and performance on a work sample provides immediate feedback for both test-taker and evaluator. This enables immediate discussion of work capabilities and any problems encountered.

As with any method of assessment these are also disadvantages or limitations.

- Work samples may not be adequately researched to establish accurate norms, reliability and validity.
- The validity of work samples is assumed due to the similarity to actual jobs. However, there have been few empirical studies of predictive validity.

- While work samples simulate job tasks, other aspects of a work environment, such as noise and interaction with supervisors and co-workers, cannot be accurately replicated.
- Work samples are effective in assessing performance on routine tasks working with things or data, but are not effective in determining behavior or performance when things go wrong (lack of supplies, need for technical assistance, or work error).

AREA 3: PHYSICAL CAPACITIES

**Job Frequency Counts from the 6th ed. DOT (N=12,975)
(Includes GED, Aptitudes, Physical Demands, Environmental Conditions,
Temperament Trait and Element-Level Counts)**

Note: The *HBJR-91* defines DOT Trait and Element Scales on ascending scales of measurement, except for Aptitude Traits, (N=11) which were placed on descending scales. The EOJR (*Encyclopedia of Job Requirements*, McCroskey, 2003) defined All Traits, including Aptitudes, on ascending scales.

General Educational Development: (R)easoning, (M)ath, and (L)anguage							
EOJR-2003	%-ile	Number Jobs at Each Level					
Trait-Level	Range	(R)easoning	(M)ath	(L)anguage			
6	82 - 99	286	114	172			
5	59 - 81	1063	469	858			
4	40 - 58	3017	1060	1375			
3	18 - 39	3669	2812	2851			
2	6 - 17	4117	3601	3746			
1	1 - 5	823	4919	3973			
Totals:		12975	12975	12975			
Academic Aptitudes: (G)eneral Intelligence, (V)erbal, & (N)umerical							
EOJR-2003	%-ile	Number Jobs at Each Level					
Trait-Level	Range	(G)en Intellect	(V)erbal	(N)umerical			
5	81 - 99	271	189	34			
4	50 - 80	2366	1963	1070			

3	19 - 49	5306	3953	3975			
2	5 - 18	5032	6853	7574			
1	1 - 4	0	17	322			
Totals:		12975	12975	12975			

WORKER TRAIT RATINGS								
Physical Demands PD-1 through PD-6								
PD1 - (S)trength [Exertional levels for Lifting, Carrying, Pushing and/or Pulling]								
EOJR-2003	HAJ-R91	Weights Lifted/Carried or Force Exerted in Push/Pull						
Trait-Level	Code Lev	1-Occas (O)	2-Freq (F)	3-Const (C)	# Jobs	% Jobs		
5-Very Heavy	V	100 +	50 +	20 +	97	0.75		
4-Heavy	H	50 - 100	25 - 50	10 - 20	1185	9.13		
3-Medium	M	20 - 50	10 - 25	* - 10	3820	29.44		
2-Light	L	* - 20	* - 10	*	6430	49.56		
1-Sedentary	S	* - 10	*	-	1443	11.12		
Totals:					12975	100.00		
* negligible weight								
The range excludes the lower number and includes the higher number, i.e, the range 10 - 25								
excludes 10 (begins at 10 +) and includes 25. Overlapping ranges of * - 10 in the Occasionally (O)								
column for Sedentary and Light jobs are differentiated on the basis of the worker's posture and whether work is performed at a production rate. For example, all Sedentary jobs involve Sitting > 2/3rds								
of the work day. However, in some jobs workers may sit constantly but exert force of an amount or at a								
frequency rate that exceeds the limits for Sedentary. Such jobs are, therefore, rated at least Light.								
For information on frequencies for Sitting, Standing & Walking and related ratings on a 5-point Work								
Context Physical Capacity/Environmental Tolerances Elements Frequency scale (Range=0-4), See								

MVQS2001 Resources - 6th Edition Revised, (McCroskey, 2002, Chapter 4, Statistical Tables on pp. 1-12).

49.56% of the DOT is Light work, 11.12% is sedentary work; therefore 60.68% of the DOT is light duty or less.

PD2 - (C)limbing/(B)alancing						
EOJR-2003	HAJ-R91	Number Jobs at Each Worker Trait Level				
Element-Level	Code Lev	PD-2: Climbing/Balancing				
3-Constantly*	C*					
2-Frequently*	F*	>1/3 of time	457			
1-Occasionally	O	<1/3 of time	12518			
0-None	N					
Totals:			12975			
PD3 - (S)toop/(B)end/(C)rouch/(C)rawl						
EOJR-2003	HAJ-R91	Number Jobs at Each Worker Trait Level				
Element-Level	Code Lev	PD3 - (S)toop/(B)end/(C)rouch/(C)rawl				
3-Constantly*	C*					
2-Frequently*	F*	>1/3 of time	1556			
1-Occasionally	O	<1/3 of time	11419			
0-None	N					
Totals:			12975			
PD4 - (R)each/(H)andle/(F)inger/(F)eel						

EOJR-2003	HAJ-R91	Number Jobs at Each Worker Trait Level			
Element-Level	Code Lev	PD-4: (R)each/(H)andle/(F)inger/(F)eel			
3-Constantly*	C*				
2-Frequently*	F*	>1/3 of time	12095		
1-Occasionally	O	<1/3 of time	880		
0-None	N				
Totals:			12975		

Functional Capacity Evaluation

Assessment of physical capacity for employment may involve functional capacity evaluation (FCE). The FCE provides objective information about an individual’s ability to perform a variety of physical activities. It may be conducted to assess global functioning or it may be customized to simulate very specific work activities. Physical capabilities to be assessed may include:

- Mobility (walking and climbing stairs)
- Postural activities (sitting and standing)
- Strength (lifting, carrying, pushing and pulling)
- Balance and coordination
- Use of the upper extremities (reaching, grip, pinch, fine finger dexterity, manipulation)

An individual’s physical capacity can then be compared to the physical demands of a job or occupation to determine if he or she should be able to perform the job tasks.

Functional capacity evaluations are typically performed by physical or occupational therapist. However, it is usually necessary to have the treating physician review the results of the FCE and recommend restrictions and limitations that should apply.

AREA 4: HANDBOOK OF ANALYZING JOBS (HAJ-R)

Minnesota Theory of Work Adjustment – MTWA (1964) Provided the basic foundational underpinning for all worker-trait-factor job person matching system which later emerged beginning in the late 1970s in the Vocational Diagnosis and Assessment of Residual Employability (VDARE). MTWA was manually “operationalized” with the development of the VDARE process which formed the initial basis for virtually all computerized job-person matching systems that followed. All involved quantitative measurement some to a greater degree than others.

US DOL has collected a myriad of worker trait/job requirement **elements-level** data, and utilized that data to develop a worker trait/job requirements **traits-level** data.

Satisfaction & Satisfactoriness scores – Proposition I of the theory suggests that an individual's work adjustment at any point in time is indicated by his concurrent levels of Satisfaction and Satisfactoriness AND that these two indicators of Work Adjustment are relatively independent.

Prediction of Satisfactoriness Scores - Proposition II suggests that Satisfactoriness is a function of the correspondence between a person's abilities and the ability requirements of the work environment, provided that the person's need correspond with the reinforcer system of the work environment. Corollary IIa indicates that the knowledge of an individual's abilities and of his satisfactoriness permits the determination of the effective ability requirements of the work environment. Corollary IIb indicates that the knowledge of the ability requirements of the work environment and of an individual's satisfactoriness permits the inference of an individual's ability.

Prediction of Satisfaction Scores – Proposition III suggests that Satisfaction is a function of the correspondence between the reinforcer system of the work environment and the individual's needs, provided that the individual's abilities correspond with the ability requirements of the work environment. Corollary IIIa suggests knowledge of an individual's needs and of his satisfaction permits the determination of the effective reinforcer system of the work environment for the individual. Corollary IIIb suggests knowledge of the reinforcer system of the work environment and of an individual's satisfaction permits an inference of an individual's needs.

Satisfaction and Prediction of Satisfactoriness – Proposition IV suggests that Satisfaction moderates the functional relationship between Satisfactoriness and ability-requirement correspondence.

Proposition V suggests that Satisfaction moderates the functional relationship between Satisfaction and need-reinforcer correspondence.

Proposition VI suggests the probability of an individual being forced out of the work environment is inversely related to his Satisfactoriness.

Satisfaction and Termination – Proposition VII suggests the probability of an individual voluntarily leaving the work environment is inversely related to his satisfaction.

Tenure – Proposition VIII indicates that satisfactoriness and satisfaction scores in combination provided the best predictor of tenure. (Combining Prop VI and VII). Given Propositions II, III, and VIII, this Corollary VIIIa follows: Tenure is a function of ability-requirement and need-reinforcer correspondence.

Proposition IX: Work-personality and work-environment correspondence increases as a function of tenure.

Realistic Occupational Counseling (ROC) Handbook

First private sector supplement to the 1965 DOT. The 114 modal worker trait job requirement profiles in ROC provided the original database for the Realistic Occupational Counseling Computerized Job-Person Matching Transferable Skills Analysis (ROC TSA).

Datamaster Transferable Skills Analysis (TSA) program – first micro-computerized worker-trait-factor job person matching TSA system designated specifically for use on personal computers.

Job Value = less difficult jobs valued less. Vocational Quotient (VQ) is the “job equivalent” of Intelligence Quotient (IQ).

Vocational Quotient = The most comprehensible approach to bring order to the world of work and work adjustment in terms of understanding overall job difficulty and maximum vocational potential (Developed from the US DOL behavioral anchor rating, 51 worker traits in HAJ-R (1979) and 12, 099 jobs titles in DOT (1977).

All worker trait profiles and their VQs published in the original four volume Encyclopedia of Job Requirements now electronically incorporated in the McCroskey Dictionary of Occupational Titles (McDOT) and related McCroskey Transferable Skills Program (MTSP) and McPLOT. Updated and reformulated with a mean of 100 and a standard deviation of 15.

There are **24 most vocationally significant, trait-level, worker traits** which should be measured, or rated, and used for evaluative data profiling in Vocational Analysis. (See handout)

Four Vocationally Significant Worker Trait Factors

- 1) General Education
- 2) Vocational Aptitudes
- 3) Physical Capabilities
- 4) Environmental Tolerances

AREA 5: JOB PLACEMENT

Many individuals with disabilities have restrictions and limitations that limit their access to the labor market. Working with a vocational rehabilitation counselor can help the individual to identify realistic job goals. Even so, individuals with disabilities may have difficulty obtaining work and will benefit from job placement services for selective employment (Weed & Field, 2001).

Client preparation is a key component of the job placement process. Competition is an inherent characteristic of the labor market. The client needs to make the best possible presentation and to be able to explain their talents and capabilities. The client will also benefit from practice with the counselor in regards to explaining gaps in the work history, any pertinent restrictions and limitations, and need for reasonable accommodation. Instruction in job seeking skills will help the client conduct the job search and learn how to engage in an independent job search in the future. The client must also be prepared for the inevitable disappointments a job search can bring and will benefit from access to a vocational counselor to discuss their efforts, learn from mistakes, and celebrate success.

Structuring a job search and locating as many viable job leads as possible will maximize the client's chances for successful job placement. Hager (2003) suggests five themes that may be used to varying degrees and in combination as part of a comprehensive job placement strategy. First, encourage maximum involvement of the job seeker. The client who invests him or herself in the process will have the most to gain. The job search is a learning process in and of itself but the client's reward will be a favorable job fit and/or reasonable compensation. Second, the job developer should take a businesslike approach with employers so that the employer receives a needed service (referral of a qualified employee) and will be willing to work with the job developer in the future. Third, the importance of networking cannot be understated though this is most true for skilled, professional or managerial positions. Individuals working in jobs or industries in which the client is interested may know of job opportunities that have not been advertised. Fourth, helping employers to design jobs or make reasonable accommodations may provide access to opportunities that did not previously exist. Fifth, knowledge of incentives and services may help an employer offset any extra costs for accommodation or training. Tax credits or services of a job coach are examples.

Attorney Lynn Lund – documented job search single most important issue indicating a good faith defense. U.S. Supreme Court.

Job Openings and Labor Turnover (JOLT) (2002) www.bls.gov/jlt/

Definitions:

- Collection - survey of business establishments
- Coverage - randomly selected non-farm establishments
- Concepts - Industry classification. Standard Industrial Classification (SIC)
- Employment - persons on the payroll for pay period on the 12th day of the month.
- Job Openings - 1) specific position exists 2) work could start in 30 days 3) Employer actively recruiting outside company.
- Hires - anytime during the reference month
- Separations - terminations of employment. Quit = voluntary separation

JOLT is subject to both sampling and non-sampling errors. The exact different, or sampling error, varies depending upon the particular sample selected, and this variability is measured by the STANDARD ERROR OF THE ESTIMATE.

Research has found that some reporters systematically under report separations relative to hires due to a number of factors, including the nature of their payroll systems and practices.

One of the most important factors lost or changed during unemployment is STRUCTURE. Structure helps clients stay motivated, on task, and to see steps in the job seeking pursuit.

Apply for dream job -----→ inactivity as reward for work done -----→ makes desired job too important -----→ too much anxiety during interview leads to poor showing.

Apply for dream job -----→ start working on other applications -----→ addition options reduces anxiety about the dream job -----→ more comfortable in interview increasing chances.

McCroskey Transferable Skills Program (MTSP) also provides information on Labor Market Access (LMA) = % of the labor market is accessible to a given client. It is based on the Pre/Post Evaluation Profiles and it is a very useful way to show the client the impact of a disability or disadvantage.

A client with average skills (around 50th percentile range) has access to about 81% of the Labor Market.

MTSP Training Index (Availability) – valuable for a person who wants to go to school. Predicts the likelihood of being successful in training (80 = average). > 80 for a person who wants to go to school. Low score indicates client might be unrealistic.

MTSP Labor Market Utilization score = a client's ability to utilize the available labor market. Ratio of Access to Training Indices and represents an index of the degree to which transferable skills and abilities can be used in a given labor market. Higher the value – the greater the chance that the client will regain meaningful employment without extensive accommodation.

If a person returns to the SAME TYPE OF JOB it is 97% transferability. (The 3% accounts for the difference between one employer and another—even if the job has the same DOT code.)

MOST VALUABLE – Earning Capacity Index (EC)

The predicated hourly income provides a translation of the VQ into a value that directly relates to the published research. This research demonstrated that a person's income (adjusted by age and geographical location) can be predicted (to the middle of the income distribution) to within \$.25 per hour. A more conservative estimate would be \$.50 per hour.

This is the estimate that is most useful for job placement. If the MTSP predicts that a client making a given EC, but the job is \$1.50 above that level, you can expect that the job requires skills that are 3 standard deviations beyond a person's abilities. Job failure can be expected. Likewise, job failure can be expected when the job pays \$1.50 below the estimated EC value.

MOST USEFUL – Standard Industrial Classification (SIC)

Each DOT code has a corresponding SIC code that identifies an industry where that job can be expected to exist.

Behavioral Job Placement – Behavior is a key word. Only observe, assess, and influence behavior to facilitate a successful job search.

Consequences – affects behavior and that analyzing the impact of consequences provides a desired effect. Consequences of behavior determines behavior strength because the clients finds a particular consequence good or bad.

Antecedents – affects behavior because experience teaches that participate antecedents become associates with a particular behavior that will be followed by a particular type of consequence.

Anticipated consequences was one of the STRONGEST motivators for behavior and had equal or greater influence than actual consequences.

Lewin’s Behavior Formula = whether the appropriate technique is employed or not, the formula is *always* working. Behavior is *always* being reinforced or modified. Therefore, if you do not recognize and reward good behavior in the environment, unwanted behavior will automatically be increased.

Increasing or Accelerating Behavior

- Behavior may be increased through the use of positive or negative reinforcement techniques.
- Reinforcer = procedure of following a behavior by a consequence (reinforcer) that increases response strength.
 - a. Increases probability that the behavior will be repeated.
 - b. Any consequence that follows a behavior increasing the frequency or duration of that behavior.
 - c. Could be desirable or undesirable.
 - d. Introducing a positive or terminating a negative.

Negative Reinforcement is a procedure by which an increase in the frequency or duration of a response is obtained by removing an aversive event immediately after the targeted behavior is performed. Negative reinforcement requires an ongoing aversive event that can be removed after a specific response is performed. The best example of Negative Reinforcement is job hunting is when the process (effort and feeling rejected) ends by obtaining meaningful employment. Negative reinforcement can be probation when starting a job. Perform to a desired standard and the probation (“punishment”) will be removed.

FOUR TYPES OF REINFORCERS

1. Material any tangible item food, clothes, car, etc.
2. Activity anything that a person likes to do.
3. Social verbal praise; anything to make some feel appreciated.

Feedback = effective form of social reinforcement. Enables comment on specific behaviors you want to accelerate. Can be in the form of letter, reports, memos, charts, and displays.

Criticism = very likely to reinforce unwanted behavior. Criticism is often used during busy times when it seems that only inappropriate or annoying behaviors are noticed. Ignore the negative and reinforce the position.

4. Token Reinforcement

Tokens are exchanged for any of the other three reinforcers. Therefore, they become what they want. Useful in institutions but little or no use in community job placement program.

Seven Rules for Positive Reinforcement

- 1) Reinforce after target behavior. Not for promises – action only. When rule is followed, reward is given.
- 2) Do not reinforce undesirable behavior. Do not give attention to....
- 3) Reinforce immediately. Social reinforcement can always be provided. Easier to give verbal than always have a “treat.”
- 4) Add social reinforcement when using activity or material.
- 5) Make behavioral system fair.
- 6) Premack Principle – rearranging of reinforcers that already exist in the environment can help increase a behavior. In any pair of responses or activities in which a person freely engages, the more frequent one will reinforce the less frequent one. “A higher probability behavior can be used to reinforce a lower probability.”
- 7) Always choose to give the least disrupting type of reinforcer available.

AREA 6: DICTIONARY OF OCCUPATIONAL TITLES (DOT)

In order to look at the millions of jobs in the U.S. economy in an organized fashion, the DOT groups jobs into “occupations” based on their similarities and defines the structure and content of all listed occupations. Occupational definitions are the result of comprehensive studies of how similar jobs are performed in establishments all over the nation and composites of data collected from diverse sources. The term “occupation” as used in the DOT, refers to this collective description of a number of individual jobs performed, with minor variations, in many establishments.

There are six basic parts to an occupational definition. The present data about a job in a systematic fashion. The parts are listed below in the order in which they appear in every definition:

- (1) The Occupational Code Number
- (2) The Occupational Title
- (3) The Industry Designation
- (4) Alternative Titles (if any)
- (5) The Body of the Definition
 - (a) Lead statement
 - (b) Task element statements
 - (c) “May” items
- (6) Undefined Related Titles (if any)

Occupational Code Number – the first three digits identify a particular occupational group. All occupations are clustered into one of the nine broad “categories” (first digit), such as professional, technical and managerial, or clerical and sales occupations. These categories break up into 82 occupationally specific “divisions” (first two digits), such as occupations in architecture and engineering within the professional category, or stenography, typing, filing, and related occupations in the clerical and sales category. Divisions, in turn, separate into small, homogeneous “groups” (first three digits) – 559 such groups are identified in the DOT. The nine primary occupational categories are listed below:

- 0/1 Professional, Technical, and Managerial Occupations
- 2 Clerical and Sales Occupations
- 3 Service Occupations
- 4 Agricultural, Fishery, Forestry, and Related Occupations
- 5 Processing Occupations
- 6 Machine Trades Occupations
- 7 Bench Work Occupations
- 8 Structural Work Occupations
- 9 Miscellaneous Occupations

The middle three digits of the DOT occupational code are the worker function rating of the tasks performed in the occupations. Every job requires a worker to function to some degree in relation to data, people, and things. A separate digit expresses the worker’s relationship to each of these three groups:

DATA (4 th digit)	PEOPLE (5 th digit)	THINGS (6 th digit)
------------------------------	--------------------------------	--------------------------------

0 Synthesizing	0 Mentoring	0 Setting up
1 Coordinating	1 Negotiating	1 Precision Working
2 Analyzing	2 Instructing	2 Operating-Controlling
3 Compiling	3 Supervising	3 Driving-Operating
4 Computing	4 Diverting	4 Manipulating
5 Copying	5 Persuading	5 Tending
6 Comparing	6 Speaking/Signaling	6 Feeding/Off-bearing
	7 Serving	7 Handling
	8 Taking Instructions/Helping	

The last three digits of the occupational code number indicate the alphabetical order of titles within 6-digit code groups. They serve to differentiate a particular occupation from all others.

Critical Worker Traits Variables (Set 2): Eleven Temperament Traits – vocationally relevant in the prediction of an individuals specific Labor Market Access and Earning Capacity Potential.

D	=	<u>Directing</u> , controlling and planning
R	=	<u>Repetitive</u> or short-cycle work
I	=	<u>Influencing</u> people
V	=	Performing a <u>Variety</u> of duties
E	=	<u>Expressing</u> personal feelings
A	=	Working <u>Alone</u>
S	=	Performing effectively under <u>Stress</u>
T	=	Attain precise set limits and <u>Tolerances</u>
U	=	working <u>Under</u> specific instructions
P	=	dealing with <u>People</u>

Temperament Trait Restrictions are most helpful in the elimination of job options which would typically be contraindicated for individuals with special problems including, but not limited to: Addiction, disfigurement, emotional trauma, PTSD, depression, learning disabilities, blindness, deafness, brain damage, mentally challenged, and related psychiatric or psychologically diagnosed diseases/disorders.

For some temperaments, those where no valid trait or element predictors have been identified. ***Reasonably Certain Vocational Expert Clinical Judgment*** is the only arbiter for translating medical, psychological, educational, social and vocational assets/limitations into functional worker trait/temperament employability profiles.

AREA 7: TESTIMONY AND LEGISLATION

Rule 702

Any discussion of expert testimony begins with *Rule 702* of the *Federal Rules of Evidence (FRE)*. For 70 years, the civil courts have permitted expert witnesses (including Vocational Experts) to testify under the *Frye* or "general acceptance" standard (*Frye v. U.S.*, 1923). Quite simply, the *Frye* standard stated that if expert testimony was based on methods generally accepted in the relevant professional field of knowledge, it would be admissible. In 1993, the US Supreme Court ruled in the *Daubert v. Merrell Dow Pharmaceuticals* case that the *Frye* standard was no longer to be the guideline. The Court stated that *Rule 702 of the Federal Rules of Evidence (FRE) – Testimony by Experts* – did not mention "general acceptance" as the standard. *Rule 702* simply states that:

If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education may testify thereto in the form of an opinion or otherwise.

CHANGING STANDARDS OF ADMISSIBILITY

Frye v. United States (1923)

- *Scientific evidence meets the “general acceptance” criteria in the particular field in which it belonged based on “scientific principle or discovery.*
- *Expert testimony based on methodology which was significantly divergent from procedures generally accepted by recognized experts was NOT admissible under Frye. The application of “general acceptance” has been an impediment and has imposed undue delays in development.*

In 1993, Supreme Court ruled against EXPERTS using junk science in the courtroom. Since then it has reiterated the use of scientific standards:

Daubert v. Merrell Dow Pharmaceuticals (1993) Judges act as a GATEKEEPER.

Federal Rules of Evidence superseded Frye.

The trial judge will determine:

- a. *Expert’s qualifications*
- b. *Reliability and scientific validity of expert theories & methodology includes but is not limited to:*
 1. *Extent to which theories, methods, and procedures can be tested.*
 2. *Theories, methods, and procedures are subject to peer review and publication.*
 3. *The potential error rate (frequency of erroneous results).*
 4. *Existence and maintenance of standards.*

5. *Generally accepted by the relevant scientific community.*
- c. *“Fit” relevancy in terms of extent to which the trier of fact will be assisted by the expert testimony to be presented.*
- d. *Role of the judge or jury which involves more rigorous scrutiny in the preliminary assessment made by the judge as to whether the reasoning and methods used by experts are scientifically valid. “Evidentiary reliability will be based upon scientific validity.”*

Federal Rule of Evidence 702 = (1) reliable i.e. based on scientific knowledge, methods, and procedures; and (2) relevant (testimony that will assist the trier of fact.)

DAUBERT: IMPACT ON STATES

The Nebraska Supreme Court has ruled that the admissibility is based on Nebraska Case law instead of Daubert:

Daubert (Favorable)

Louisiana, New Mexico, South Dakota, Texas, and West Virginia

Frye (Favorable)

Arizona, California, and Florida

General Electric Company v. Joiner (1996)

The Supreme Court mandated that the same standards must apply when the trier of fact either allows or disallows an expert’s testimony. This decision commonly referred to as the “abuse of discretion” standard, reinforces Daubert by implying that judges be active in making determinations as to both reliability and relevance.

***Kumho Tire Co. v. Carmichael (1999)** the Supreme Court broadened the authority of judges to act as “gatekeepers” to disallow the testimony from an expert witness. (Product liability case and the expert testimony was that of a technical tire expert. The expert contended that a product defect caused injuries. Evidentiary dispute involved the expert’s specific methodology, which involved a visual inspection of the tire that was allegedly defective. Kumho Tire contended that the expert failed to meet the reliability requirement in Federal Rules of Evidence 702 as set forth in Daubert and was granted summary judgment. Justice Breyer stated FRE 702 applied to the admissibility of all expert evidence without any distinction between “scientific, technical, and other specialized knowledge.”*

Judge determines: RELEVANCE and RELIABILITY in admitting expert testimony. (1) Does the testimony have a ‘reliable’ basis in the knowledge and experience of the relevant discipline? (2) Requiring that an expert employ in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in his or her relevant field whether basing testimony on professional studies or personal experience.

Trial judges obligation to allow or disallow expert testimony is applicable to testimony based on “technical” and “other specialized” knowledge, and NOT exclusively on “scientific” knowledge.

Scientific = Testing, work samples, and other measures. Most have known reliability, validity and error rates.

Technical and Specialized Knowledge = Labor market surveys, job analyses, rehabilitation planning, life care planning and other factors that do not lend themselves readily to measurement.

Experts must first: Establish a foundation of reliability before being allowed to testify about observations and conclusions. Decision concerning reliability is the exclusive province of the trial judge.

Court determined that PUBLICATION, PEER REVIEW, ERROR RATES, "ACCEPTABILITY" IN THE RELEVANT SCIENTIFIC COMMUNITY establish reliability.

Daubert/Kumho standards require expert knowledge based on scientific data of GREATER SPECIFICITY from peer-reviewed, published research for it to be admissible in the courtroom.

Discovery Rules

Rule 26 = General rules of discovery and alters the attorney's duty to disclose. Discoveries can take several forms including depositions, written interrogatories and subpoena duces tecum. *Information sought need not be admissible at trial if the information appears reasonably calculated to lead to discovery of admissible evidence.

Significant for the expert is that prior to their deposition, a report must be submitted under 26 (a)(2)(B).

Rule 35 = Even experts retained as consultants, who are not expected to testify, may have to respond to interrogatories or deposition in order to discover their opinions (Rule 35[b]).

Rule 45 = Considered a welcome addition to the Rules of Evidence, providing protection to experts subject to subpoenas. Attorney's must make reasonable steps to avoid undue hardship or expense on the expert. Rule 45 (3)(A) = recourse to have a subpoena quashed or modified to permit reasonable time and remove sources of undue burden.

Rule of Evidence 403 = exclusion of evidence which wastes time.

Motion in limine (Latin: "at the threshold") is a motion made before the start of a trial requesting that the judge rule that certain evidence may, or may not, be introduced to the jury in a trial. This is done in judge's chambers, or in open court, but always out of hearing of the jury. If a question is to be decided *in limine*, it will be for the judge to decide. Usually it is used to shield the jury from possibly inadmissible and unfairly prejudicial evidence.

Federal Rules demand that written reports be prepared and signed by the witness and contained complete statements of all opinions be expressed as well as the basis and reasons for underlying the expert's opinion.

Exhibits must be disclosed as well as the expert's qualifications including a list of all publications within the preceding 10 yrs., compensation to be paid, a listing of all other cases in which the expert has testified either by trial or deposition in the last 4 years.

Rehabilitation Counseling Bulletin and Journal of Applied Rehabilitation – prominent professional journals in the area of VEs.

Journal of Forensic Vocationology, Journal of Forensic Vocational Analysis (ABVE), The Earnings Analyst (AREA), Estimating Earning Capacity.

Expert Opinions:

Should be relevant, reliable, and factual, and must always be provided with reasonable vocational and rehabilitation economic certainty (i.e. more reasonable than not or greater than 50% certainty).

Should be based on scientific research and incorporate the use of validated expert tools, including computer job-person matching programs backed with scientific, peer-reviewed, published research demonstrating reliability, predictive validity and known error rates regarding: Transferable Skills Assessment (TSA), Occupational Density Estimates (Expected yearly openings and current employment in Relevant Labor Markets of Interests (RLMI) and Pre/Post earning capacity in relevant Labor Markets of Interests.

AREA 8: THEORY

While *informal* Job-Person Matching Theory dates back to Parsons (1909), the *Minnesota Theory of Work Adjustment* (Dawis, England and Lofquist, 1964) provided the first *formal* foundational underpinning for all worker-trait-factor job person matching systems. These later emerged, beginning in the late 1970s with the development of the *Vocational Diagnosis and Assessment of Residual Employability* [VDARE; (McCroskey, Wattenbarger, Field & Sink, 1977)], and continuing through the 1980s and 90s. These worker-trait-factor job-person matching TSA systems were all developed and computerized based on data describing job requirements in terms of the objectively defined behaviorally-anchored rating scales found in the *Handbook for Analyzing Jobs-Revised* (HAJ-R; USDOL, 1972; Reprinted, 1976; Re-revised 1991).

Minnesota Theory of Work Adjustment (MTWA)

First formal foundational underpinning for all worker-trait factor job person matching systems.

Basic Concepts of the *Minnesota Theory of Work Adjustment*

In an effort to simplify and further explain *The Minnesota Theory of Work Adjustment*, Dawis (In: Bolton, 1976), said:

Speaking at a simple level, a theory is an account of what is happening or what has happened. The *Theory of Work Adjustment*, then, is an account of what is happening or what has taken place in work adjustment. As an account, the theory is itself, quite simple.

Tenure, Satisfaction, and Satisfactoriness

When a person goes to work, one of the first objective observations that can be made is that he/she continues on the job for a certain length of time. Tenure, length of time on a job, is a basic concept of the *Theory of Work Adjustment*. Tenure implies a minimal level of work adjustment in terms of correspondence between Satisfactoriness and Satisfaction. If an employee's work adjustment were to drop below this level, then it is presumed that he/she would be let go (fired) from, or would otherwise leave (quit), the job.

Tenure, satisfaction, and satisfactoriness, then, are the basic outcomes, or dependent variables, of work adjustment. To the extent that work adjustment has taken place, tenure, satisfaction, and satisfactoriness would be manifested to some commensurate extent. That is, they are indicators of work adjustment. These indicators point to the basic factors involved in work adjustment. Satisfaction suggests factors on the individual side, while satisfactoriness suggests factors on the work side (viewing work adjustment as what happens when a person goes to work)...." (pp. 229-230).

Tenure = length of time on the job. Basic theory of the Theory of Work Adjustment.

Tenure = implies minimal level of work adjustment in terms of correspondence between Satisfactoriness and Satisfaction.

Satisfaction

Worker Interests
Temperaments
Attitudes
Satisfaction
Needs
Values
Occupational Reinforcer
Patterns (ORP)

Satisfactoriness

Worker Characteristics/Job Requirements
Ability Requirements
Abilities
Occupational Aptitude Pattern (OAP)
Reinforcer Systems

A formal test of a theory requires that the theory's concepts be operationalized (observations are to be made in order to confirm or to disconfirm the theory. This requirement is usually fulfilled through the used of instruments in data.

Theory of Work Adjustment (6 instruments)

- 1) Satisfactoriness = Minnesota Satisfactoriness Scales (MSS)
- 2) Satisfaction = Minnesota Satisfaction Questionnaire (MSQ)
- 3) Abilities = General Aptitude Test Battery (GATB)
(maximum least demonstrated worker traits i.e. work history)
- 4) Ability Requirements = Occupational Aptitude Patterns (OAPs),
Worker Trait/Job Requirement Profile (HAJ-R)
- 5) Needs = Minnesota Importance Questionnaire (MIQ)
- 6) Reinforcer Systems = Minnesota Job Description Questionnaire (MJDQ)
Vocational Interest & Personality (VIPR) Type Indicator

Work Adjustment = achieving and maintaining of individual-environmental correspondence. Work adjustment mechanisms involving correspondence, discorrespondence, flexibility, activeness, reactiveness and Rate of Work Adjustment, on the part of the individual and the work environment.

If an employee's work adjustment were to drop below a certain level, then it is presumed that he/she would be fired or would otherwise quit the job.

Realistic Occupational Counseling (ROC) Handbook was the 1st private sector supplement to the 1965 DOT provided the original modal worker traits profiles used for work history analysis and post-injury residual employability using VDARE.

ROC TSA Program was the first worker trait factor job-person matching program on the mainframe computers at University of Georgia. It was used primarily as a tool for reliable vocational expert analysis of Social Security Disability Insurance (SSDI) applicant appeal cases.

Primary considerations being given to AGE, EDUCATION, PAST RELEVANT WORK HISTORY and WORK RESTRICTIONS stemming from MEDICAL and/or PSYCHOLOGICAL DISABILITIES.

Area 9: RESEARCH

The Purpose of the American Board of Vocational Experts

The *American Board of Vocational Experts* (ABVE) exists for the dual purpose of:

1. *Providing standards for the certification of Forensic Vocational Experts, and*
2. *Providing quality education to experts in vocational forensics.*

In the spring of 1988, in keeping with the ABVE organization's tradition of high standards, the ABVE board of directors decided to develop and incorporate a standardized ABVE Exam designed to measure the construct *Forensic Vocational, Psychological and Regulatory Expertise*, as a portion of the membership certification screening criteria. Specifically, the ABVE Exam was designed for the purpose of assisting the Membership Committee in determining which ABVE applicants would be assimilated as certified members and what level of membership and certification they would be accorded. Further, the test would help *objectify* the ABVE *membership selection and certification process*. Ultimately, it was decided that standardized testing of all ABVE applicants would help provide an empirical basis for what could be, if the organization were not careful, a wholly arbitrary and capricious process. The organization was very concerned about the fairness of its decision making and the implications of that process to the applicants and its membership. After all, standards are a way of life in vocational forensics.

Area 10: STATISTICS

In light of the renovated admissibility standards for scientific evidence established by *Daubert v. Merrell Dow Pharmaceuticals* and earlier discussed by Feldbaum and McCroskey (1995), a review of the basic statistical and psychometric properties underlying applied research, assessment technology and earning capacity prediction is in order.

If we are to be held accountable, not only by our peers, but also by the judicial process, we would elect a pro-active effort to underscore the basic statistical underpinnings of most testing and research in the field of Human Services.

Reliability refers to the consistency or stability of measurements based upon systematic methods, procedures and instrumentation (e.g., thermometers, polls, heart monitors, standardized vocational and psychological tests, structured interviews, labor market surveys, computerized job-person matching program inputs and outputs, objective Pre- and Post-Injury Earning Capacity algorithms, and related methods, procedures, and instrumentation). Reliability is measured by squared correlational statistics and ranges from Zero to +1.0. Reliability coefficients are always interpreted directly; squaring a reliability coefficient is not appropriate.

Four types of reliability are most often mentioned in the literature of the field of Human Services. These include:

1. **Test-Retest Reliability** (which produces a coefficient of stability),
2. **Alternate Forms Reliability** (which produces a coefficient of equivalence),
3. **Internal Consistency Reliability** (typically based on item analysis, odd-even and/or split-half correlation coefficients), and
4. **Inter-Rater Reliability** (consistency across raters).

Reasonable Reliability Coefficients typically range from .70 to .99. Reliability coefficients ranging from: .70-.79 are considered Low; .80-.89 are considered Moderate; .90-.95 are considered High, and .96-.99 are considered Very High.

Although reliability cannot guarantee validity for methods, procedures and related instrumentation, one cannot establish scientific validity without first establishing reliability.

Validity

Validity indicates the degree to which methods, procedures, and related instrumentation accurately serve their purpose and do their job. Validity is measured by unsquared correlational techniques and therefore must be squared to produce the coefficient of determination. This allows us to statistically determine the amount of variability in the dependent, or criterion variable, which is caused by, accounted for, or explained by, variability in the independent or predictor variable.

While validity is always the most important question, a validity coefficient can never be greater than the reliability coefficient and seldom, if ever, does the validity coefficient approach the magnitude of the reliability coefficient for vocational and psychological tests, methods and procedures in Human Services. This is because the maximum possible validity (of a method, procedure, or test) equals the square root of the reliability (of the method, procedure, or test) times the reliability of the criterion (against which the method, procedure or test is being evaluated). In other words, the reliability of the criterion variable plays a major role in determining scientific validity. This is why validity coefficients tend to be lower than reliability coefficients.

Reasonable Validity Coefficients typically range from .30 to .69. Validity coefficients ranging from .30-.39 are Low; those ranging from .40-.49 are Moderate; those in the .50-.59 range are High; those in the .60-.69 range are Very High; and, those in the .69 and above range are classified as being in the Extremely High Range.

Seldom have validity coefficients, typically associated with Human Services methods, procedures and Instrumentation, been found to be in the extremely high range. With the advent of computers and the speed at which technology has been moving in the last few years, extremely high validity coefficients for some variables will eventually be more common. For this to occur, researchers must achieve greater empirical control over the heretofore uncontrolled error variance typically identified and/or associated with criterion variables.

Types of Validity

There are four basic types of validity frequently mentioned in the area of tests and measurement. These are listed below with the primary question that would lead to a determination of the level of validity possessed by various methods, procedures and related forms of instrumentation.

- 1) **Face Validity** - Do the methods, procedures, or instrumentation appear, on the face of it, to measure what they claim to measure? While face validity means little or nothing statistically, under Frye, it was much more likely to be given disproportionate weight by the trier of fact, than would be the case under Daubert.
- 2) **Content Validity** - How well does the content of the assessment methods, for example, comprise an adequate sample of the defined domain of what supposedly being measured?
- 3) **Criterion-Related Validity** - How well do the methods, procedures, or instrumentation compare with external variables considered to be direct measures of the characteristic or behavior of interest? Criterion-Related Validity was formerly known as predictive validity and concurrent validity (a modified form of predictive validity).
- 4) **Construct Validity** - To what extent do certain theoretical or explanatory concepts or qualities account for the obtained results from the selected methods, procedures and/or instrumentation?

Standard Errors

There are three types of Standard Errors (measures of error rates) frequently mentioned in the literature. These are:

1. **Standard Error of Means** - this is same as the Standard Deviation of Means in the Sampling Distribution. It is associated with Probability Theory, which underpins the scientific approach to research. It allows researchers to empirically derive and explain the underlying concepts and foundation upon which all other standard measures of error rates are based.
2. **Standard Error of Measure** - this type of error is associated with tests and measurements instrumentation.
3. **Standard Error of Estimate** - this type of error is associated with prediction estimates derived from regression analysis research studies.

True Scores

True scores are 100% accurate measures with an error rate of 0. These are very rarely, if ever, known and must be estimated using the formula $T1=(T2 + e)$; where T1 = the True Score Estimate, T2 = the True Score and e = random error around the True Score. This True Score Estimate Formula allows researchers to calculate Confidence Intervals for measures and estimates systematically derived by field services practitioners.

Confidence Intervals

As none of our methods, procedures, tests or other forms of instrumentation yield the hypothetical True Score, it is clearly helpful to the trier of facts for an expert to give a statement regarding the probability that a given measurement or prediction is worthy of confidence within a specified range of error.

Standard Errors of Measurements and Estimates allow us to place bands of confidence around the measures and estimates we derive and predict. These confidence bands or intervals allow us to address issues relating to how accurate we expect our measures and estimates to be, based on Probability Theory. Primary assumptions that we must be able to make and defend under Probability Theory include:

- 1) Data samples are reasonably randomly selected,**
- 2) Sample size (N) is reasonably adequate, and**
- 3) The Universe from which data are sampled is reasonably normally distributed.**

For example, if we administered a normally distributed IQ test with a mean of 100 and a standard error of measure of 3 IQ points, we would be able to say with 67% confidence that the True IQ Score of an individual who scored 100 on the test would be in the plus or minus one Standard Error of Measure (SEM) score band ranging from 97 to 103. Likewise, we would be able to say with 95% confidence that this individual's true score would be in the plus or minus two SEM score band ranging from 94 to 106.

Similarly, if we predicted a low-end Post- earning capacity estimate for an injured worker (using the MTSP 7.11R program, which has a Standard Error of Estimate of \$1.31/hr) to be \$6.99/hour, we would be able to say with 67% confidence that the individual's true low-end Earning Capacity would be \$6.99 plus or minus \$1.31/hr. Likewise, we would be able to say with 95% confidence that the individual's true low-end earning capacity would be \$6.99/hr plus or minus \$2.62/hr.

Reasonable Certainty

Reasonable Certainty is an all or none phenomenon in that it represents a belief or conviction of the mind which cannot be reduced to a percentage. The expressions most likely or more likely than not are sometimes used to convey a probability of occurrence of 51% or more (Benjamin, 1995).

AREA 11: OCCUPATIONAL INFORMATION NETWORK (O-NET)

In 1993, O-Net model was developed with greatly expanded the list of specific element-level data from 51 worker traits with 20 physical demand trait elements and 14 environmental condition trait elements to include 1298 element level variables by 1998.

In 1998, US DOL replaced the much more specific descriptions and modal-data profiles of worker trait job requirements described in the DOT with much more GENERAL descriptions and grouped means-data profiles of worker trait requirements in the O-NET.

1. Since 1998, the US DOL O-NET has provided vocational experts with knowledge of LESSER SPECIFICITY than is usable for expert opinion to meet specific standards for admissibility in the courtroom.
2. Since 1998, proprietary programs such as McDOT 2003 and Volcano 4.1 have been filling the data void left when O-NET replaced the DOT by providing vocational experts with required data of GREATER SPECIFICITY.

Occupational Employment Statistics (OES) – O-NET originally grouped 12,761 DOT occupations into 852 OES occupations.

Such a large collection of jobs within so few OU code groups drastically limits how precise you can be about specific job tasks or sites.

AREA 12: TRANSFERABLE SKILLS ANALYSIS

Transferable skill analysis (TSA) software is commonly used to identify suitable jobs and associated earnings for individuals with disabilities. Vocational specialists in the private sector use these programs to determine the availability of jobs and their subsequent wages and to assist in job placement for individuals receiving benefits from workers' compensation or from their long-term disability carrier. Insurance carriers use the results of the TSA to deny, approve, or reduce an individual's claim of disability. These are the areas that are the most litigated in vocational rehabilitation. Therefore, the methodology used by the vocational specialist may be scrutinized by federal or state courts, particularly if the transferable skill analysis was conducted specifically for litigation purposes. When that is the case, the vocational specialist becomes an expert witness and his or her methodology will be analyzed by using the Daubert standard

Research on transferable skills analysis software

In various forensic arenas, vocational experts must be able to complete a skill transferability analysis. Skill transferability in the workplace involves the application of demonstrated work skills acquired from jobs held during the past 15 years in meeting the demands of semi-skilled or skilled jobs in which the same or a lesser degree of skill is required [15]. In the mid-1970s, the Vocational Diagnosis and Assessment of Residual Employability (VDARE) was developed as a means of profiling a client's vocational functioning capacities based on the job analysis data outlined in the third edition of the Dictionary of Occupational Titles (DOT) [15]. The user of the VDARE assumes that the client acquired certain worker traits from past jobs and can meet similar job demands in different occupations. Thus, VDARE allows a vocational expert to build a potential employment profile to be used as a tool for job-person matching in the determination of employability and skill transferability, in other words, the client's work history is used to establish a baseline profile of data pertaining to his or her demonstrated vocational capacities. Once a

baseline data profile has been established, it can be modified as necessary by vocationally relevant medical, psychological, social, and educational information of an individual client. The resulting profile represents the client's Residual Employability Profile (REP) of vocational potential. The REP, in turn, can be matched against the profiles of job requirements for jobs in the U.S. economy that might be accessible in the local economy. The VDARE process has been statistically analyzed as a predictive measure of employability. The more matches that are found, the greater the client's vocational potential in a given area.

Transferable Work Skills Definitions

Williams (1998) stated that computer programs based on *DOT* (1991) ran the risk of not controlling for methodological error variance if not basing the sorting functions of the software on the appropriate factors. He went on to explain that the *Revised Handbook for Analyzing Jobs* (HAJ-R, 1991) listed three variables that were relevant to assessment of transferable skills: Work Fields, MPSMS and Specific Vocational Preparation (SVP).

1. Work Fields are *Machine, Tools, Equipment and Work Aids* (MTEWA) grouping codes that reflect how work gets done, the result of work, and the purpose of the job. Although these categories range from specific to general, they represent homogeneous groups related to technologies or objectives. It is easy to justify the inclusion of Work Fields into a Transferable Skills Analysis. People can acquire skills in getting work done, and these skills can be transferred to another job.
2. *Materials, Products, Subject Matter, and Services* (MPSMS) grouping codes describe what a worker does and what gets done to what. This coding structure is similar to the Work Fields structure, and its use in Transferable Skills Analysis appears logical. Skills related to what the worker does and how this work is completed can realistically be transferred to another job.
3. *Specific Vocational Preparation* (SVP) is the amount of lapsed time required for a typical worker to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job-worker situation. Use of SVP as a selection variable in Transferability of Skills Analysis (TSA) assumes that the individual can perform all occupations, which have the same or lower SVP, and that jobs requiring an SVP of no more than 2 (up to 1 month), are unskilled jobs. Since SVP represents time required to learn a job (though on-the-job training, formal vocational or academic training) and not any inherent knowledge or skill associated with the job, SVP cannot be transferred from job to job; instead, it is used primarily in differentiating between *unskilled* jobs (with an SVP level of either 1 or 2) and *semi-skilled* or *skilled* jobs.

The *SSA Transferable Work Skills Definition* stated in the *Code of Federal Regulations* (20CFR404.1568, 383-385) has been generally accepted as the fundamental basis for most transferable skills analyses. Restated for clarity, it said:

1. *What we mean by transferable skills. We consider you to have skills that can be used in other jobs, when the skilled or semi-skilled work activities you did in past work can be used to meet the requirements of skilled or semi-skilled work activities of other jobs or kinds of work. This depends largely on the similarity of occupationally significant work activities among different jobs.*
2. *How we determine skills that can be transferred to other jobs. Transferability is most probable and meaningful among jobs in which--*
 - o *The same or a lesser degree of skill is required;*

- *The same or similar tools and machines are used; and*
 - *The same or similar raw materials, products, processes, or services are involved.*
3. *Degrees of transferability. There are degrees of transferability of skills ranging from very close similarities to remote and incidental similarities among jobs. A complete similarity of all three factors is not necessary for transferability. However, when skills are so specialized or have been acquired in such an isolated vocational setting (like many jobs in mining, agriculture, or fishing) that they are not readily usable in other industries, jobs, and work settings, we consider that they are not transferable.*
 4. *Transferability of skills for individuals of advanced age. If you are of advanced age (age 55 or older), and you have a severe impairment(s) that limits you to sedentary or light work, we will find that you cannot make an adjustment to other work unless you have skills that you can transfer to other skilled or semiskilled work (or you have recently completed education which provides for direct entry into skilled work) that you can do despite your impairment(s). We will decide if you have transferable skills as follows. If you are of advanced age and you have a severe impairment(s) that limits you to no more than sedentary work, we will find that you have skills that are transferable to skilled or semiskilled sedentary work only if the sedentary work is so similar to your previous work that you would need to make very little, if any, vocational adjustment in terms of tools, work processes, work settings, or the industry. (See Sec. 404.1567(a) and Sec. 201.00(f) of appendix 2.) If you are of advanced age but have not attained age 60, and you have a severe impairment(s) that limits you to no more than light work, we will apply the rules in paragraphs (d)(1) through (d)(3) of this section to decide if you have skills that are transferable to skilled or semiskilled light work (see Sec. 404.1567(b)). If you are closely approaching retirement age (age 60-64) and you have a severe impairment(s) that limits you to no more than light work, we will find that you have skills that are transferable to skilled or semiskilled light work only if the light work is so similar to your previous work that you would need to make very little, if any, vocational adjustment in terms of tools, work processes, work settings, or the industry. (20CFR404.1568, 383-385)*

AREA 13: ABVE STANDARDS AND ETHICS

Canon 1 Behave in a Legal, Ethical and Moral Manner

Vocational experts shall behave in a legal, ethical and moral manner in the conduct of their profession, maintaining the integrity of the Code and avoiding any behavior that would dishonor the profession.

Canon 2 Respect for Clients

Vocational experts shall respect the integrity of people with whom they work; namely, individuals or organizations designated as clients. The primary obligation of a vocational expert is to provide a fair and honest assessment of an individual's vocational capacity.

Canon 3 Professional Relationships

Vocational experts will act with honesty and integrity in their relationships with colleagues, other organizations, agencies, institutions, referral sources, and other professions.

Canon 4 Public Statement/Fees

Vocational experts shall adhere to fair and reasonable standards in establishing fees and promoting their services.

Canon 5 Confidentiality

Vocational experts shall maintain the confidentiality of information obtained from referral sources, understanding that much of the information received may be discoverable through the normal legal process. The confidentiality issue should be discussed with the individual being evaluated upon initial meeting.

Canon 6 Assessment

Vocational experts shall ensure that the selection, utilization and interpretation of assessment measures is done in accordance with the standardization and recommended use and administration of those instruments,

Canon 7 Research Activities

Vocational experts will attempt to assist in efforts to expand the knowledge and processes in determining an individual's vocational capacity.

Canon 8 Competence

Vocational experts shall establish and maintain their professional competencies so that the evaluatees receive the benefit of the highest quality of services that the vocational expert is capable of offering.

AREA 14: LIFE CARE PLANNING

Paul Deutsch pioneered Life Care Planning (LCP)

LCP can encourage and assist parents in advocating for those services that need to be developed to fill in the gap between what is and what ought to be.

Family's that fail to plan for the developmentally disabled child after parental death is most challenging.

Coordinating all the care a client receives makes sure care does not overlap with other services making it more cost effective and efficient.

Guidelines

- 1) Cost projections based on the costs in the client's region.
- 2) No automatic recommendations of either the most or least expensive equipment or service.
- 3) No probability projections contrary to accepted fact and literature.
- 4) Projections should consider the use of free or discounted services for which a client may be eligible, as well as the client's own desire and goals.
- 5) Based on the individual's needs.

LCP uses specific software and copyrighted format which covers any or all of the following: 1) educational needs; 2) mobility requirements; 3) drug and medical supplies; 4) architectural modifications; 5) home care or residential care; 6) attendant requirements; 7) transportation needs; 8) assistive technology; 9) psychiatric needs; 10) occupational needs; and 11) recreation needs.

LCP = helps use money effectively by tailoring investments to client needs and assuring the most effective services and equipment.

- Decreases the trust administrator's anxiety as to a game plan for the future.
- Decreases the trust administrator's need to work outside his expertise.
- Decreases the client's anxiety as to the future.
- Establishes a better, more effective relationship among all involved parties.

Obviously, living at home has many psychological and financial advantages for a senior and those advantages need not be detailed here. LCPs are also aware, as suggested in George's case,

that social interaction is important. Training a person who is older and blind to cross the street has little meaning unless he/she has somewhere to go or someone to visit.

Life Care Planners are also aware that the needs of the elderly are both sophisticated and simple. Many people may focus on the sophisticated medical needs and overlook the simple, non-medical services, such as bathing, dressing, shopping and transportation, which can ease the elderly person's life, not only on a day-to-day basis, but on an hour-to-hour one, as well.

Further, LCPs are also aware that it is generally the collapse of the elderly person's support system, and not a sudden change in his/her health, that sends the elderly person into a nursing home. A well-managed support system not only identifies high-risk individuals before a crisis occurs, but coordinates all the care a client receives at one time so that care does not overlap. This makes the care more efficient and cost-effective.

AREA 15: PAIN AND PAIN MANAGEMENT

SUBJECTIVE: How much pain is the patient experiencing?

A patient's level of subjective *PAIN* (what the patient feels) is best measured with a device called the *Visual Analog Scale* (VAS). There are different versions of the VAS. Typically, on a simple *0 to 10* scale, pain is assessed by asking the patient the following question regarding their pain: "*Mrs. Jones, on a scale of 0 to 10, where 0 is no pain and 10 is the worst imaginable pain, where does your current level of pain fall .*" VAS assesses a patient's subjective pain level and allows for the documentation of their subjective improvement or lack of improvement.

FUNCTIONAL: How is the patient disabled from daily work & life?

Assessing the patient's level of *Functional Disability* is a much more difficult task than measuring how much pain they subjectively feel. There are many different vehicles designed to accomplish the task of measuring functional disability. The *Oswestry Disability Index* (Fairbank, Couper & Davies, 1980) and the *Roland-Morris Disability Questionnaire* (Roland & Morris, 1983) are the most commonly used and recommended outcome measure tools for assessing the disabling effects of spinal disorders on the human (Deyo & Battie, 1998; Doleys, 1997; Turk & Marcus, 1994).

The *Standford Score* is an attempt to combine the level of the patient's functional disability and subjective disability.

Interpretation:

1. **0% to 20%: minimal disability** : The patient can cope with most living activities. Usually no treatment is indicated apart from advice on lifting, sitting and exercise.
2. **21%-40%: moderate disability** : The patient experiences more pain and difficulty with sitting, lifting and standing. Travel and social life are more difficult and they may be disabled from work. Personal care, sexual activity and

sleeping are not grossly affected and the patient can usually be managed by conservative means.

3. **41%-60%: severe disability** : Pain remains the main problem in this group but activities of daily living are affected. These patients require a detailed investigation.
4. **61%-80%: very severe disability**: Back pain impinges on all aspects of the patient's life. Positive intervention is required.
5. **81%-100%**: These patients are either bed-bound or exaggerating their symptoms.

While many states consider pain-related impairments for disability awards in workers compensation, many do not. *Low-back pain* with observable pain behaviors such as sitting with rigid posture, frequent shifting of posture, facial grimacing and slow movements, is the most common condition leading to workers compensation claims associated with time loss from job. While pain is often reported by patients, specific pain-producing pathology can only be identified in around 15 percent of patients.

AREA 16: OCCUPATIONAL DENSITY

- Occupational Density: Impact on Labor Market Access

In 2003-2004, MVQS Occupational Density ratio research combined US DOL *Job Openings Labor Turnover* (JOLT – 16,000 US Employers) frequency rates, *Standard Occupational Classification* (SOC) Current Employment (92% of the US Work Force) frequency rates and FY 1996-00 *Work Orders frequencies data from 15 US States* (with 42.6% of the US Population) data to produce Yearly Openings & Current Employment Estimates for each specific job in McDOT (N=12,975) relative to 3,298 US States, Boroughs, Counties, Parishes, Territories, & Canada Provinces, from 1998-2009.

- Total MVQS *Volcano 4.1 Labor Market Surveys* available: $(12,972 * 3,298 = 42,781,656$ Sets of Labor Market Survey Projection Estimates/Year*12 years = $513,379,872 * 3$ (for each of the 3 subsets of interest (Yearly Openings, Current Employment & Wages)) = 1,540,139,616+ estimates.

Occupational Density is defined in *MVQS Volcano 4.1* by:

- 1) **Yearly Openings Estimates** for each specific 9-digit McDOT 2003 6th Ed. Occupational Title, and
- 2) **Current Employment Estimates** for each specific 9-digit McDOT 2003 6th Ed. Occupational Title.

Note: **Percent Relative Standard Error** (PRSE) Rates for MVQS 2003 Occupational Density Estimates were derived from **SOC Code Current Employment PRSE Rates** available in 2003. When those estimates were distributed across 12,972 Occupations in the MVQS 2003 6th Edition Dictionary of Occupational Titles, the Specific Occupational

Density PRSE Rate for McDOT Occupations was + or - 2.3% at the 67% Level of Confidence (McCroskey, 2003).

- **Sources of MVQS Foundational Databases include:**
- The United States Department of Labor (US DOL) - DOT Titles, Job Descriptions, and Worker Trait and Element Requirements Data,
- The United States Census Bureau – Population and Wage Data,
- The United States Department of Labor Employment and Training Administration (US DOLETA) – O*NET Occupational Information,
- Minnesota Department of Economic Security (MDES) – Work Orders,
- 15 Full Year Sets of State Job Service Employment and Training Centers Work Order Openings and related Wage Data (1996-2000),
- US DOL Job Openings and Labor Turnover (JOLT) study results (13 of 18 Months of data from a random sample of 16,000 out of 8 million Employers rotated monthly (2002) – Yearly Opening Estimates,
- Statistics Canada, Canadian Employment and Wage Statistics, and,
- US Government Sources of Jobs and Wage Data (e.g., Occupational Employment Statistics (OES) and Standard Occupational Classification (SOC) Code - Current Employment and Wage Data Estimates).

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