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VECAP MISSION

The Vocational Evaluation and Career Assessment Professionals (VECAP) is a nonprofit organization originally founded in 1967 to promote the professions and services of vocational evaluation and work adjustment. Formerly known as the Vocational Evaluation and Work Adjustment Association (VEWAA), the name was changed in 2003 to better reflect the focus of the organization as well as emphasize the independent status of the organization. This group has no affiliation with the National Rehabilitation Association (NRA) or the NRA/VEWAA.

The VECAP organization is committed to advance and improve the fields of vocational evaluation and career assessment and represent the needs of the professionals who provide those services. Its scope of services encompasses individuals who need assistance with vocational development and/or career decision-making.

VECAP's membership comprises professionals who provide vocational evaluation, assessment, and career services and others interested in these services.

VECAP members identify, guide, and support the efforts of persons served to develop and realize training, education, and employment plans as they work to attain their career goals.

For membership information, visit VECAP.org.

EDITORIAL

The Publication of a Classic

Dr. Stephen W. Thomas is a vocational evaluator, as he outlines in the 2020 Preface to his text, *Vocational Evaluation and Assessment: Philosophy and Practice*. This *Journal* contains the complete and unabridged version that he gave me in 2004, when I started at East Carolina University. I have used it in my vocational evaluation (VE) classes, cited it in research, or used it as a resource for training that I provided. After receiving numerous requests from fellow educators for a copy of the text, I asked Dr. Thomas for permission to publish it. He wholeheartedly agreed and then the VECAP Board supported a serialization of the text in past *Journals*, which was completed in Fall 2018. Since that time, I have received requests for the complete text; hence, this special edition of the *Journal*. The editorial staff have striven to make this publication as true to the original as possible, with the exception that references are at the end of each chapter in lieu of a final reference section.

For those of you who may not have read Dr. Thomas' text, please consider the following. Dr. Thomas' book serves as an excellent resource for the foundation of vocational evaluation. The writing about theory and philosophy helps not only to contextualize our profession but to see clearly the underpinnings. Dr. Thomas placed our tools in three categories: (1) instruments (norm-referenced data from psychometric tests, work samples); (2) techniques that are based in behavioral observation (criterion-referenced approaches such as functional and situational assessment, ecological/environmental assessment); and (3) strategies (accommodations, modifications, and supports for learning and performance). The process of VE is described from referral to follow-up. In addition, he describes the three roles of the vocational evaluator: (1) vocational/career expert; (2) disability specialist; and (3) educator, with three suggestions to improve our profession. These three are to pursue professional development, amass a library of resources, and be intentional in the education of the public. As you study the chapters, bear in mind that some of the information is dated, such as certification and references to laws. There have also been updates to standards, a newer role and function study was published (see Hamilton & Shumate, 2005), and new research about VE has been performed (see Shuster & Rowe, 2019). The editors and Dr. Thomas hope you develop a deeper understanding and appreciation of vocational evaluation from this book.

Happily Ever After...

In order to get to the *happily ever after*, the journey must end. I have served as co-editor of the *Journal* since June 2010, when I made my first board report, and now is the time to step aside. During my tenure, the editorial staff has produced 15 *Journals*—sadly, some years there were no submissions. I have worked with some great authors to publish timely and relevant research primarily aimed at practitioners.

I have also worked with some excellent people. First, thanks to Mike Ahlers, who recruited me as an editor, and Dr. Carolyn R. Ahlers-Schmidt, co-editor (2010). I am very grateful to Nancy

Simonds (co-editor since 2011), who has insured that each *Journal* meets APA standards. I have been fortunate that six ECU doctoral students have volunteered to serve as managing editors. These include Drs. Min Kim, Vanessa Perry, and Qu’Nesha Hinton, and current students Ralf Schuster, Lauren Bethune Scroggs, and Amelia Saul. Thanks too, to the reviewers who provided the rigor the *Journal* requires to produce a quality unbiased product. Finally, thanks to the readers who consume, cite, criticize, and appreciate the articles.

I have enjoyed my tenure and feel that I have received more than I have given. My thanks to all and I look forward to my happily ever after...

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Dr. Julian M. Nadolsky: A Visionary of Vocational Evaluation

January 17, 1935 – October 23, 2019

Written by Pam Leconte, EdD, VECAP President



It is with profound sadness that we share the loss of Julian Nadolsky, another of our profession's founders. Today, we would refer to him as a thought leader, one whom many view as a primary architect of our profession, vocational evaluation. An impeccable practitioner (and dresser), Julian began mentoring others as the practice of vocational evaluation was borne and burgeoned—a role he continued throughout his life as a professor, forthright spokesman, and consistent advocate for our field.

What follows is an attempt to pay homage and tribute to one of the most significant, early leaders and “explainers” of vocational evaluation. Paying tribute means to publicly show respect and admiration to someone. Mere words cannot do justice to Julian the man, the consummate professional and framer of a profession. Hopefully, what follows demonstrates, in a small way, how significant Julian and his contributions were to our field. Vocational evaluators and the many people they serve owe him much.

Viewed by many as a philosopher and theorist in a field that tilted more toward practice than philosophy or theory, Julian pushed us and created the groundwork for the vocational evaluation (VE) profession. He advocated as early as the 1970s that vocational evaluation was and should be a separate, stand-alone profession, not subsumed or tied to rehabilitation or rehabilitation counseling. Recently, VECAP disseminated one of Julian's articles (with an introduction by Dr. Steven R. Sligar), stating that our professional association “must become accessible to all vocational evaluators regardless of the primary emphasis of their employment setting” (1981, p. 71).

The first to call our field a discipline (1972), Julian emphasized repeatedly that the experiential aspect of VE (e.g., work sampling, situational assessment, on-the-job evaluation) is the essential component of our services, which differentiates VE from other assessment services. He purported that it is based on an existential philosophy, and by focusing on both the individual (subject) and the occupational and employment world (object), we can discover one's potentiality (rather than probability, to which other assessment techniques were limited; 1977).

Julian Nadolsky was from Western Pennsylvania and, a veteran of the U.S. Marine Corps, he graduated from Pennsylvania State University with both his bachelor's and master's degrees, earning his doctorate from Auburn University. He remained in the South for the rest of his career, teaching at Auburn, serving as a professor at the University of Tennessee at Knoxville, and establishing his own business: The Rehabilitation and Wellness Corporation. Much sought-after to share his wisdom, he served extensively as a keynote speaker, trainer, and consultant. For example, when a commercial vocational evaluation company was found culpable of unethical practices, they called upon Julian to investigate and make recommendations for change. As a result, he rescued a popular work sample system from being lost to evaluators and consumers. Even early in his career, people viewed him as someone with utmost integrity who followed scrupulous ethical standards.

As an early developer of VE in the 1960s, he designed and sequenced services as a practitioner, as others were doing throughout the country. He created VE services in Johnstown, Pennsylvania, at the state-operated rehabilitation center and at a community rehabilitation service agency in Baltimore, Maryland. While pursuing his doctorate, he surveyed VE programs around the nation and, based on the results, he created a "Model for Vocational Evaluation of the Disadvantaged," which quickly became a roadmap for VE services in the United States and beyond. Years ago, visiting evaluators from Hong Kong showed us one of the sources they used to establish their services. It was Julian's "model" (1971).

Among his substantial and lasting contributions to VE were articulating and defining the theoretical underpinnings supporting the scaffolding (i.e., "architecture") of vocational evaluation as well as reinforcing

- the rationale that VE was a viable alternative to standardized testing, especially for those from certain groups,
- that VE provided non-discriminatory options to identify potential for people who had disabilities or who faced educational and vocational challenges,
- that it is grounded in the value that all individuals matter and have potential, and
- that it provided meaning and positive futures to participants.

Julian was the first vocational evaluator I met as a young professional in a new field that no one seemed to understand. He was as gracious and generous with his knowledge that time in 1969 as he was throughout the decades with many, many graduate students and new professionals. In addition to serving as a professor and mentor to hundreds of students, he also helped form the first professional association for evaluators and served as the first editor of our peer-reviewed *Journal*.

He believed in VE as an intervention that he hoped would "become primarily a preventative service through which vocationally related problems can be diagnosed early," but he accepted that in 1971, it was "primarily a corrective diagnostic service" (1971, p. iv). He noted that if we provided VE services to youth in schools, they could benefit in ways that may not make it necessary to spend time and money for later rehabilitation services.

As news of his death has become known, dozens have lauded his contributions, but as importantly, they have all paid tribute to him as a person. Some brief quotes include “it was an honor to know him,” “he was truly a statesman around our work...he was unfailingly elegant, learned, and kind; he had no political agenda,” and “Julian was an unimpeachable scholar and always a gentleman.”

The last time we spoke, though he was due to pick up his beloved wife and one of his grandsons for the latter’s doctor’s appointment, he kindly agreed to sit for an interview regarding his thoughts about VE and how it had progressed—one last act of generosity.

For those who didn’t have the honor of knowing Julian Nadolsky, perhaps his charge to future vocational evaluators will resonate with you: “...it appears that the type of program offered by each practitioner will play a decided part in determining the future direction of vocational evaluation. Through their daily commitments and actions, each practitioner is subtly involved in making the critical choice between professional status and program effectiveness for the entire field of vocational evaluation” (1976, p. 7). Perhaps he was encouraging us to follow his lead to serve as role models who will ensure vocational evaluation remains an honorable and worthwhile profession and service.

He was unique, our profession’s gift, and someone who epitomized professionalism. May we continue to follow his teachings and resolve.

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Vocational Evaluation and Assessment: Philosophy and Practice
Dr. Stephen Thomas

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Vocational Evaluation and Assessment: Philosophy and Practice

PREFACE (2020)

Fresh out of college in 1970 with a dual major in psychology and sociology, I set out on a search for a job that was related to my interests in human services. I had coursework and an interest in tests and measurements theory, testing and test construction and use, and was hopeful for a job match in this area. A fellow psychology major and graduate managed to find a job at a rehabilitation center in Galveston, Texas, as a vocational evaluator. A second position soon opened up for an evaluator and she gave me the application information. Having had little success in my job search, I applied and interviewed for the position and was hired.

I knew nothing about what a vocational evaluator was or did, and on my first day, I was given a stack of publications and manuals to read on the subject from Auburn University and the University of Wisconsin–Stout. I immersed myself in the evaluation unit and its tests, work samples, situational assessments, and evaluation reports. The process fell into place and I found the work interesting and challenging. Eventually completing my graduate education in rehabilitation and vocational evaluation at the University of Arizona, I set out on a long and rewarding career in my chosen field.

In the course of their careers, many faculty often write a textbook or two in their discipline in order to share with their students what they have learned and experienced. This shared knowledge, designed to prepare students for the future, is fundamental in perpetuating a body of knowledge and discipline.

A draft of the publication was written and shared with students in my introductory vocational evaluation classes for student feedback and further refinement. My career took a dramatic turn when I became dean of my college, and the rigors of the new administrative position sidelined my work on the book. It was my colleague, Dr. Steven Sligar, in the Department of Addiction and Rehabilitation Studies, who took interest in the book, and together, we finished it.

I approached this book much like I did when I originally sought out the techniques and skills needed to become a competent evaluator. You, the reader, will be exposed to some of the history, philosophy, skills, tools, and processes that led to the implementation of successful vocational evaluations and the creation of useful reports for the referring individual or agency.

Stephen W. Thomas, EdD

Retired Professor of Rehabilitation and Vocational Evaluation

Dean Emeritus, College of Allied Health Sciences, East Carolina University

PREFACE (1997)

As its title implies, this book is designed to introduce the reader to the field of vocational evaluation and assessment. Although the reader will be exposed to the history, theory, and philosophy of the field, the focus of the book is on process and practice. Approaches to service delivery will be explored in a wide range of settings (e.g., public and private rehabilitation, community rehabilitation programs, transition from school-to-work, welfare-to-work, job training and placement programs, career development services), and with a variety of different student, client, consumer, and injured worker populations (e.g., individuals with physical, mental and sensory disabilities; individuals who are disadvantaged; job seekers and career changers).

All of us engage in some form of self-assessment, and in most cases, this gives us sufficient information to make vocational and career decisions, plan employment strategies, and monitor our progress and success in learning, living, and working. However, there are times when more formalized appraisal procedures are necessary to verify or add to current information. This is where the vocational evaluator can serve as a facilitator of information. Because **information is empowering**, the role of the evaluator is critical to individual decision-making, as well as to the development of plans that assist participants in achieving employment and career goals.

Both the real and the ideal will be addressed. Evaluators should constantly strive to apply ideal philosophy and practice, keeping in mind that, realistically, constraints in time and resources often limit their efforts. Although the comprehensive process of vocational evaluation will be emphasized, many evaluators may only wish to use parts or combinations of procedures, instruments, and techniques in designing and delivering customized assessment services. Whether the process is brief or comprehensive, this book will provide guidelines and procedures for offering quality services. The best way for evaluators to judge the quality of their service is to consider whether they would be willing to put themselves or a member of their family through the evaluation process. If the answer is "no" then they should rethink what they are doing.

This book will focus on a number of key ingredients that make vocational evaluation work. It will begin by describing what evaluation is, how it contributes to vocational/career success, and the ethical and professional role of the evaluator in achieving the goals of evaluation. Tools and techniques will be reviewed, followed by a description of how they are incorporated into various evaluation and assessment processes. The book will conclude with how to interpret and report results and determine their effectiveness in helping participants achieve career-life goals.

Evaluators should never underestimate the importance of their roles in helping individuals take control and improve the quality of their lives. There will always be a need for vocational evaluation and assessment. How well these services truly help others maximize their career potential will depend on how dedicated and prepared evaluators are to provide the best person-centered services possible.

Stephen Thomas, 1997

CHAPTER ONE

DEFINITIONS, THEORY, AND PHILOSOPHY OF PRACTICE

Defining Vocational Evaluation

The Vocational Evaluation and Work Adjustment Association (VEWAA) defines **vocational evaluation** as:

A comprehensive process that systematically uses work, either real or simulated, as the focal point for assessment and vocational exploration, the purpose of which is to assist individuals in vocational development. Vocational evaluation incorporates medical, psychological, social, vocational, educational, cultural, and economic data into the process to attain the goals of evaluation. (Dowd, 1993)

A more detailed analysis of the definition reveals several rather interesting features. The process is "comprehensive" to ensure that all facets of an individual are assessed, so that all variables directly and indirectly affecting success are considered. Some of these "facets" to be addressed are identified in the definition and include medical, psychological, social, vocational, educational, cultural, and economic. Comprehensive, also refers to the wide range of instruments and techniques (e.g., interviewing, standardized tests, work samples, situational assessment, community-based assessment) used to provide a thorough evaluation and to address all issues related to learning, living, and working. This goal of evaluation is consistent with that in the definition of **rehabilitation** provided by Anthony (1880, p.7), "The goal of rehabilitation is to assure that the disabled person possesses those physical, emotional, and intellectual skills needed to live, learn, and work in his or her own particular community." Lastly, "comprehensive" applies to the thoroughness of the vocational evaluation report in interpreting results and formulating recommendations.

Vocational evaluation is unique from all other forms of psychological, educational, and medical evaluation in that it uses real and simulated work experiences in the form of work samples, situational assessments, and community-based assessments (on-the-job evaluations) to assess work interest, potential, and prescription. The more closely evaluation simulates work and work activities, the more realistic and accurate the results, and the more meaningful the experience is to participants when shaping vocational and career decisions. The process is systematic in that it involves a specific and well-defined plan of action to cover all pertinent areas of functioning, strength, and need. The resulting goal of "vocational development" relies on empowering the evaluation participant and referral source with the facts and alternatives necessary to make "informed choices."

This definition was originally published in 1972 (Tenth Institute on Rehabilitation Services, 1972, p. 2) and remains unchanged to this day. The term **prevocational evaluation** was originally used from 1953-1957 to describe the process later known as vocational (or work)

evaluation (Roberts, 1969; Whitehouse, 1953). One of the first formal definitions of vocational evaluation was published in 1957 (Moed, Klincewicz, & Usdane, 1957), and served as the basis for development of the current definition. The Commission on Accreditation of Work Adjustment and Vocational Evaluation Specialists (CCWAVES), a national organization that provides professional certification of vocational evaluators has also adopted the current definition.

The term vocational evaluation has been interchangeably used with an older term **work evaluation**, but they do have slight differences. Historically, work evaluation has been used to describe evaluation in more traditional community rehabilitation program (rehabilitation facility) settings where there is greater reliance on situational assessment activities. Work evaluation is a narrower concept that uses "work" (real or simulated) as the methodology for determining strengths and weaknesses and estimating performance of individuals who are disabled or disadvantaged (Cutler & Ramm, 1992; Hoffman, 1969; Wright, 1980). Vocational evaluation also incorporates real and simulated work experiences and work samples, but additionally relies on a broader range of instruments and techniques including standardized tests and computer-based assessments.

Defining Vocational Assessment

Although the terms vocational evaluation and "vocational assessment" have been used interchangeably, especially in school-based evaluation and transition settings, they are distinctly different. **Vocational assessment** is defined as:

A comprehensive process conducted over a period of time, usually involving a multidisciplinary team ... with the purpose of identifying individual characteristics, education, training, and placement needs, serving as the basis for planning an individual's educational program, and which provides the individual with insight into vocational potential (Dowd, 1993; McCray, 1982).

In a more applied sense, vocational evaluation is primarily a time limited process, where vocational assessment occurs over the life of the rehabilitation or transition service. In public and private rehabilitation services, vocational assessment begins the moment a person applies or is referred for services and ends at the time of case closure. In school-to-work and welfare-to-work transition programs, and public job training and placement programs, assessment begins with application or entrance and ends with graduation, job placement, or referral to other community resources. Depending on the needs and interests of the person served, vocational assessment as provided by a counselor, teacher, case manager, or vocational evaluator (vocational assessment specialist) could involve an activity as simple as case review or interviewing, or include referral to more comprehensive, time-limited services such as psychological testing, vocational evaluation, or medical evaluation. Assessment permits goal identification, and the development, monitoring, and ongoing modification of plans used to achieve the stated goal(s). This on-going assessment process is routinely performed with anyone receiving services and may be all that is

needed to formulate a goal and plan and achieve success. On the other hand, if assessment does not yield an appropriate employment/educational goal or alternate service plans, then a vocational evaluation should be considered. In the case where assessment is used as an empowerment tool, consumers can be taught how to conduct on-going self-assessments and build and monitor a career development plan.

The Fourteenth Institute on Rehabilitation Issues published a comparison of the differences between vocational assessment and vocational evaluation services, and Table 1 presents an edited list of these differences (Corthell & Griswold, 1987, pp. 18-19).

Table 1

Comparison of Vocational Assessment and Vocational Evaluation

VOCATIONAL ASSESSMENT	VOCATIONAL EVALUATION
Coordinated by rehabilitation counselor, special ed teacher, case manager/coordinator	Coordinated by vocational evaluator
Conducted by: counselors, teachers, parents, consumers, employment specialists, adjustment specialists, vocational evaluators	Conducted by trained/certified vocational evaluators
Primarily uses informal assessment techniques and instruments	Primarily uses formal assessment instruments, techniques, and methods
On-going, periodic, extensive	Time-limited, once or twice, intensive
Develops general vocational profile	Develops comprehensive, in-depth vocational profile

This book, as well as many other publications in the field, use the terms vocational evaluation and vocational assessment (i.e., vocational evaluation and assessment) together. Using

the terms simultaneously stresses the importance of the two techniques in providing individuals with formal and informal information to plan for success.

Career Assessment

The term **career assessment** has gained popularity especially with the career development movement. Career assessment has been more frequently associated with the use of psychometric and career-based self-report instruments used by career counselors. The focus is often placed more on the resulting career counseling process than on the initial assessment process. However, the concept of career assessment has found its way into the vocational evaluation process, especially with evaluators who have the skills and opportunity to engage in career counseling and career development.

CARF's Definition

CARF (formerly known as the Commission on Accreditation of Rehabilitation Facilities) is a national organization that provides renewable three-year accreditation for a variety of rehabilitation and employment programs including **Comprehensive Vocational Evaluation Services**. The CARF description is as follows:

Comprehensive Vocational Evaluation Services provide an individualized and systematic process in which an individual, in partnership with the evaluator, learns to identify viable vocational options and develop employment goals and objectives. This process incorporates background information (e.g., information on education, psychological history, work history, medical/physical capabilities, behavioral status, and financial status) and uses a combination of testing, work samples, situational assessments, community-based job tryouts, prevailing labor market data, occupational information, assistive technology, functional capacities, accommodations, and modifications. It incorporates respect for the consumer's personal processes of growth, self-empowerment, and development of insight leading to the consumer's informed choice of meaningful career progression goals. (CARF, 1996, p. 59-3.A)

This description reflects the emphasis on empowerment and informed choice that fits well within the vocational evaluation and assessment processes. It also supports the comprehensiveness of the process that is emphasized in the VEWAA definition.

The Interdisciplinary Council's Definition

The Interdisciplinary Council on Vocational Evaluation and Assessment (Smith, Lombard, Neubert, Leconte, Rothenbacher, & Sitlington, 1995) developed a position paper that contained the following statement.

Vocational evaluation/assessment is a professional discipline which utilizes a systematic appraisal process to identify an individual's vocational potential. Consumers range from school-aged youth to older adults who are making career decisions or vocational transitions. The vocational evaluation/assessment professional provides services to measure, observe, and document an individual's interests, values, temperaments, work-related behaviors, aptitudes and skills, physical capacities, learning style, and training needs.

This statement is more a description of the professional responsibilities of the evaluator than a definition of the service. Its focus on role and function is similar to the **scope of practice** statement that will conclude this section on definitions.

Scope of Practice Statement

In order for other professionals to understand and accept the field they must be given succinct information regarding what it is that qualified vocational evaluators specifically do (i.e., a clear and concise description of the unique professional role). This is often referred to as a **scope of practice** statement. On March 29, 1993, a breakout group on vocational evaluation education met at the NCRE/RSA/CSAVR National Training Conference on Rehabilitation Education, held in Washington, DC. This group composed of university educators interested in vocational evaluation and assessment, developed the following proposed scope of practice statement.

Vocational assessment and evaluation is a participant-driven comprehensive process performed, managed, and coordinated by a qualified vocational evaluator to identify vocational and career attributes and needs that facilitate the individual's inclusion into the work force and the community. In adherence with established ethical principles, the qualified vocational evaluator uses a variety of norm-referenced and criterion-referenced instruments and methods that involves the participant in vocational/career decision making and planning.

Theory and Philosophy of Practice

It is important to remember that vocational evaluation is not an end in itself, but a means to an end. The question then is, what is the end and how can evaluation help achieve that end? As the definitions and descriptions indicate, evaluation is dedicated to helping individuals identify, plan, and achieve their employment and career goals that eventually lead to improved quality of life. Pruitt (1986, p. 2) states that "The vocational evaluation process increases the probability of vocational success but the process alone cannot insure success." Success is dependent, in part, on the consumer's motivation and commitment, job availability, and strong service and support from rehabilitation, education, and the community in general. To appreciate vocational evaluation and assessment in relation to employment outcome, philosophies of work, rehabilitation, and transition should be understood and applied to the assessment process. A comprehensive vocational evaluation cannot simply look at a person or a job, but it needs to examine a more complex and seeming endless array of employment-related variables (Parker & Schaller, 1996; Power, 1991). The selected theories, philosophies, and models covered in the remainder of this chapter will identify many of these important elements.

There are no formal theories or a uniformly accepted philosophy of vocational evaluation or assessment. As a result, the field has had to rely on theories and models derived from rehabilitation, education, and work that influence the use of evaluation and assessment in those settings. To that end, these adapted theories and philosophies, especially as they relate to achieving vocational and personal independence for consumers, have provided meaningful guidance in the development and delivery of services.

Why Evaluate?

Throughout our lives, we all experience difficulty making appropriate choices about educational and career directions. When we were juniors or seniors in high school, we had to decide if we were going to work, and in what job, or if we were going to attend a community college or university, and in what major. If a university was chosen, then at some point in our sophomore year we were mandated to declare a major. Unfortunately, many of us chose the wrong major and had to change, resulting in the loss of precious credits, and the need to take additional courses. This delay often resulted in costly and time consuming extensions in our course of study, thus delaying our graduation. If the new major we wanted was not available at our current university, then transfer to an entirely different institution would be required. It is unknown how many individuals have given up on their dreams of higher education because they were unwilling to start over again.

In our senior year of college we were faced with having to decide between the type of work we wanted to do or the kind of graduate program we wanted to attend, and where. As we reach our mid-lives, many of us make the decision to pursue a new career. In fact, research tells us that the average American will make numerous major job changes, whether by choice or necessity, in a lifetime. Gray and Alphonso (1996, p. 33) state that "Some consider employment for five years or more within the same company to be an accomplishment". They also reference both President Clinton and Labor Secretary Robert Reich, as stating that American workers can

expect to have eight different jobs during their careers. Without careful planning, some of these changes simply lead to yet another unfulfilling job; while thoughtful consideration often results in a satisfying career choice.

What is missing from all of these life stages of career development and decision making is realistic and useful information with which to make meaningful "informed choices"--the kind of information commonly available through vocational evaluation. Although anyone can profit from the information provided by vocational evaluation, persons with disabilities and those with limited opportunities face even greater challenges in targeting satisfying employment, and have the most to gain from its results. When provided by well qualified professionals, vocational evaluation becomes one of the most important, outcome-oriented employment planning tools available to consumers and their service providers.

Individuals who receive any form of vocational or career services (e.g., Vocational Rehabilitation, school-to-work or welfare-to-work transition, job training and/or placement) can be employed without the provision of vocational evaluation services. However, in those cases where evaluation is needed and not offered, two problems may occur: underemployment and restriction of career/employment opportunities. If individuals are not placed at a level consistent with their interests and abilities, dissatisfaction with the job and with the support service (e.g., Vocational Rehabilitation, supported employment) **will** result. Job stability will be affected and early turnover may occur; in addition the consumer's respect for and willingness to use (or even recommend) the service in the future **will** be diminished. As a result of employee dissatisfaction and turnover, employers may also be less willing to use the vocational/career service in question to fill job openings in the future.

In those cases where people are underemployed, the lower level jobs in which they are working will not be available to more severely mentally disabled individuals who would be appropriately placed in such positions. As a result, willing and able workers are squeezed out of the labor market. Placement at the highest levels possible not only assures that individuals will be challenged and satisfied (and job tenure maximized), but that appropriate levels of jobs are available to a wide range of workers.

The Realities of Work

We work not only to produce but to give value to time. - Eugene Delacroix

If people really liked to work, we'd still be plowing the land with sticks and transporting goods on our backs. - William Feather

There is no future in any job. The future lies in the man who holds the job. -George Crane

We work to become, not to acquire. -Elbert Hubbard

My father taught me to work, but not to love it. I never did like to work, and don't deny it. I'd rather read, tell stories, crack jokes, talk, laugh--anything but work. - Abraham Lincoln

No other technique for the conduct of life attaches the individual so firmly to reality as laying emphasis on work: for his work at least gives him a secure place in a portion of reality, in the human community. -Sigmund Freud

The world is full of willing people; some willing to work, the rest willing to let them. - Robert Frost

A man's work is his dilemma; his job is his bondage, but it also gives him a fair share of his identity and keeps him from being a bystander in somebody else's world. -Melvin Maddocks

A considerable number of persons are able to protect themselves against the outbreak of serious neurotic phenomena only through intense work. -Karl Abraham

Human life, by its very nature, has to be dedicated to something. -Jose Ortega y Gasset

Work is what you do so that some time you won't have to do it anymore. -Alfred Polgar

Work is for people who don't know how to fish. -Bumper Sticker

These varying quotes about work and its relationship to people, time, and value, represent the wide-ranging opinions held in society. In recent history, work provided identity, status, involvement, opportunity, satisfaction, life-long security, and a living wage. Today, however, it is not uncommon to find two wage-earners in households trying to make ends meet, massive layoffs with people out of work for months at a time, more part-time work with no benefits, workers frequently changing jobs or holding down more than one job, fewer satisfying and rewarding jobs, and flattened career ladders (Neff, 1985; Szymanski, Ryan, Merz, Trevino, & Johnson-Rodriguez, 1996; Yelin, 1991). This unstable labor market has created disillusionment in seasoned workers as well as in college students who are trying to decide what major will still offer job opportunities when they graduate. For personal and spiritual growth, and meaningful quality-of-life pursuits, more people are turning to off-work activities such as hobbies, community organizations (churches, clubs, support groups), family, and volunteer service.

The labor market can no longer be narrowly and traditionally viewed as it was two decades ago. The value of work must be considered holistically in interaction with other quality-of-life domains such as family, community, environment, culture, the economy, leisure, and life goals. Satisfaction is derived from a combination of factors, of which gainful employment is one. This does not mean that work has lost its value as a critical life role, but evaluators can no longer consider work as the sole contributor to personal satisfaction and support. No matter how it is viewed by society, work is still an important piece of the life puzzle for most individuals

A Basic Model of Assessment

In its simplest form, vocational evaluation and assessment examines the interaction between two basic human variables-- interest and ability. Table 2 illustrates this dynamic relationship.

Table 2

Basic Model of Assessment

	Interested	Disinterested
Able	A	B
Unable	C	D

Although the model places interest and ability into four distinct categories, they are each actually continuums. For example, people who have been employed in a job for a period of time first weigh the essential tasks they like against the tasks they do not like before making a dichotomous decision about interest (i.e., I like it, or I don't like it). If their likes outweigh their dislikes, then consideration will be given to staying with the job. Interest is the most important element to the individual when seeking or maintaining work. When many people look through the want ads in a newspaper, they consider each job first on its desirability (e.g., that job looks good...so does that one...this one looks boring). Once jobs have been chosen on the basis of interest, job hunters then try to decide how they can convince employers that they have the skills to do the required work.

Like "interest," the continuum of "ability" must also be weighed by determining if an individual has the skills, with or without accommodations, to perform a sufficient number of the **essential** functions of the job to get hired and stay employed. The goal of job seekers (and their evaluators) is to find employment for which they have the highest degree of interest and ability. This optimum level of employment is represented by category "A." Individuals who fall in category "B" are capable of successfully performing the duties of a job but do not possess sufficient interest. This category is comprised of capable individuals who are not motivated to work, or who live in areas with restricted opportunities where the jobs they want are not readily available.

Category "C" is composed of individuals who are unable to do the jobs they like. In this situation, the inability to perform a job (or meet the job requirements) could be due to the functional limitations of a disability, or a lack of required skills or training. This includes individuals whose aspirations exceed their abilities (e.g., the person with a 55 IQ who wants to be a brain surgeon). Rather than dismissing such seemingly unrealistic interests, they should be used to better understand an individual's motivation and perception of the labor market. Unfortunately, stigmas and other barriers to employment such as incarceration, criminal record, institutionalization, possession of skills but lack of a degree, lack of experience, age, gender, and cultural difference, also limit employment opportunities in desired jobs, and fit loosely into Category C.

In both categories "B" and "C" the outcomes are the same--limited job opportunities, unemployment, or underemployment. However, the rehabilitation strategies applied to individuals with disabilities in these two groups differs dramatically. In category "B," if relocation for the right job is not an option, then counseling and work adjustment will need to be used to improve motivation and willingness to accept what is available. Those who fall in category "C" would profit from appropriate skill or degree preparation, employer/supervisor education, employment assistance and support, and/or assistive technology.

Individuals who fall in category "D" are the most difficult to serve (in terms of time, money, and energy) because they require progression through both categories B and C, in order to reach category A. Each category will require different evaluation and assessment strategies and different kinds of recommendations for rehabilitation and transition services. The ideal goal of this model is to move individuals from categories B, C, or D, to category A; optimum employment. Considering the implications of this concept on the cost-effectiveness of service delivery, some professionals argue that highly motivated people who have borderline job skills may be better employment risks than unmotivated individuals who possess a variety of marketable skills.

Theory of Work Adjustment

One of the oldest and best known theories of work and rehabilitation is the Theory of Work Adjustment (Dawis, Lofquist, & Weiss, 1968). Table 3 visually illustrates this theory (Dunn, Allen, & Mueller, 1973, p. 5).

Table 3

Theory of Work Adjustment

	Individual	Job	
	Abilities	Ability requirements	Satisfactoriness (employer retains)
Satisfaction (individual retains)	Needs	Reinforcers	

As in the "basic model of assessment" described above, the vocational evaluator must have a thorough understanding of the **individual's** "abilities" (skills) and "needs" (interests, preferences, values). In addition, the evaluator must also analyze the **job**, or environment, in relation to its "ability requirements" (job duties, skill demands) and "reinforcers" (rewards provided to the worker). To ensure the best possible person/job fit, the evaluator must accurately match these **individual** and job variables. **Employers** are most interested in the match between a worker's abilities and the job's ability requirements--if a positive match exists, the employer retains the individual. On the other hand, **workers** are most interested in the match between their needs and the job's reinforcers--if their needs are met, then the employee remains on the job. When both categories are successfully matched between the individual and the position, then job tenure (longevity) is maximized.

Evaluators should assess for, and be sensitive to, the interaction among these four variables, and report their impact on rehabilitation, education, career planning, and employment. In addition, Hershenson's person-environment model of work adjustment (similar to the Minnesota Theory of Work Adjustment) stresses a third important factor to be considered by evaluators, which is **work role behavior** (e.g., appropriate workplace behavior, cooperating with co-workers and supervisors, following rules and regulations) (Hershenson, 1981; Szymanski, Hershenson, Enright, & Ettinger, 1996).

Choose, Get, Keep Model

Parsons (1909) was credited with first influencing vocational guidance by proposing three steps, or stages, to career counseling. Salomone (1988) later added two additional steps to form the following five stages:

1. Understand self (e.g., identity and related issues)
2. Understand the world of work and other relevant environments
3. Understand the decision-making process
4. Implement career and educational decisions
5. Adjust and adapt to the world of work and school (Salomone, 1996, p.369).

In a similar effort, Farley, Little, Bolton, and Chunn (nd) constructed a "simplified career development model" to guide employability assessment and planning in rehabilitation and education settings. This model stresses three employment components--choose, get, and keep. All three aspects of a job or career must be addressed through assessment and planning if success and job tenure are to be optimized.

Choose, refers to the selection of an appropriate and suitable occupational goal and the planning required to achieve that goal. Evaluation activities are used to assess and develop consumer self-knowledge, work-knowledge, vocational decision- making skills, and program planning skills.

Self-knowledge refers to the degree of personal knowledge in areas such as interests and values, aptitudes, abilities, strengths, and limitations.

Work-knowledge refers to personal knowledge about different jobs, duties required to perform the jobs, training demands, availability of jobs, etc.

Vocational decision-making skills are the ability to match self- knowledge to work knowledge and choose a vocation consistent with personal characteristics and work opportunities.

Program planning skills are needed to plan a step-by-step process to obtain the chosen job.

Get, refers to the ability to find employment opportunities and acquire a job. Vocational evaluators help consumers assess their work orientation and motivation, job finding skills, self-presentation skills, and position performance skills.

Work orientation and motivation refers to the knowledge of general worksite demands and expectations, and the willingness to enter the job market and obtain stable and competitive employment.

Job finding skills refers to the ability to seek out and locate job opportunities.

Self-presentation skills are the ability to effectively present oneself for the job (e.g., resumes, job applications, job interviews, grooming and dress).

Position performance skills are the ability to convince (i.e., sell) the employer that the interviewee has the skills necessary to perform the job in question.

Keep, refers to the ability to adapt to the workplace and retain employment. The assessment process should focus on basic work habits and behaviors, personal and environmental coping skills, interpersonal relationship skills, and work attitudes and values.

Basic work habits and behaviors refers to skills such as the knowledge of appropriate dress, grooming, punctuality, conformity to rules, and ability to stay on task.

Personal and environmental coping skills are the ability to cope with everyday job demands, problem solving, etc.

Interpersonal relationship skills are the ability to interact effectively with co-workers and supervisors.

Work attitudes and values refer to the job gratification and needs necessary to remain employed. (Farley, Little, Bolton, & Chunn, nd, pp. 4-7)

The Americans with Disabilities Act (ADA) also speaks to all three of these issues. The ADA regulations state that reasonable accommodations should be applied to the "job application process" (**get**), "the work environment, or to the manner in which the position...is customarily performed" (**choose and keep**), and to accessing "equal benefits and privileges of employment as enjoyed by...employees without disabilities" (**choose**) (Federal Register, July 26, 1991, pp. 35735-35736).

Diagnostic Versus Prognostic Evaluation

There are two recognized approaches to evaluation: vocational diagnosis and vocational prognosis (Nadolsky, 1985). This concept is supported by Ruben and Roessler (1983, pp. 113-114) in their definition of vocational evaluation which is "...directed at determining **current and potential client functioning** for purposes of identifying occupations that could be opened up to the client through the provision of rehabilitation services" (highlighting added). The importance of this concept is often missed by the untrained practitioner, resulting in inappropriate evaluations and misleading results.

Vocational diagnosis is a determination of where a person is at the current time. This short-term, objective "screening" process provides baseline information that is generated from standardized tests (e.g., interest, achievement, aptitude), prevocational evaluations (e.g., functional assessments, basic skills assessments), transferable skills assessments, and short-term evaluation systems (e.g., APTICOM). The process is not related to the diagnostic procedures used by psychologists, physicians, and other professionals that "diagnose" medical or mental problems. Information obtained through vocational diagnosis provides a starting point for a more comprehensive vocational evaluation. In short, it is an assessment of the "capacities" of the individual (Nadolsky, 1985).

Vocational prognosis is an analysis of where a person could be with additional services. It identifies a prescriptive goal and what an individual needs to achieve that goal. In addition to the tools used in vocational diagnosis, this more long-term, subjective process incorporates accommodations to assess improvement in learning, performance, and behavior, on work samples, situational assessments, and community-based assessments (on-the-job evaluations). Vocational prognosis is an assessment of the "capabilities" of an individual (Nadolsky, 1985).

Unfortunately, many evaluators collect diagnostic information and attempt to use it prognostically. For example, Carla was administered a timed reading comprehension test and found to have a standard score of 84 with a grade level of 7 (a vocational diagnosis). A review of the test content revealed that she only completed 25% of the test but answered all items attempted correctly. If given extra time to complete additional items, she might be able to answer more questions correctly, thus demonstrating a higher functional reading ability (vocational prognosis) than indicated by the original timed score (vocational diagnosis). Her Verbal IQ score of 103 was also significantly higher than her reading comprehension standard score, indicating the possibility of improvement through appropriate instruction. Failure to use prognostic procedures in evaluation and interpretation could result in recommending only jobs that require the initial reading level, ultimately leading to underemployment or unemployment.

Vocational diagnosis provides highly useful information in conducting a transferable skills assessment (matching a person's current skills to appropriate jobs), but it should not be used to develop prescriptive plans for higher levels of placement without including a vocational prognostic component.

Feasibility Versus Employability

This concept has been advanced in the industrial rehabilitation and work hardening processes (Matheson, 1984). Feasibility is the acceptability of an individual to a teacher or employer. It is similar to a prevocational evaluation in that it attempts to determine if an individual would profit from a more work-oriented vocational evaluation, or from referral to other services that would enhance a person's eventual employability (e.g., habilitation, rehabilitation, , remediation, mental health counseling).

Employability is the capacity of an individual to become trained or employed in a particular area. If a feasibility assessment determines that a consumer possesses basic skills that could be used to improve employment training or placement, then a more work-related evaluation can focus on identifying specific job/training recommendations. In general, vocational diagnosis could be considered a feasibility process, while vocational prognosis could be referred to as an employability process.

Product Versus Process Assessment

Irvine and Gersten (1982) presented the concept of product and process assessment in a learning style instrument for supported employment called the **Trainee Performance Sample** (now renamed the **Pathfinder**). Product assessment is considered to be the more traditional form of assessment that measures the skills that the examinee has learned prior to testing. Process assessment measures an individual's ability to profit from instruction or training during testing.

Problems with product assessment can occur at several points throughout standardized testing. For example, when a timed mechanical reasoning test is administered to assess mechanical aptitude, a number of variables can interfere with a reliable and accurate outcome such as: the ability to "read" questions; the ability to work "rapidly" within a fixed time limit; familiarity with specific "terms" and "vocabulary" used in test items (e.g., tool names); test anxiety; and the eye-hand coordination needed to fill in very small spaces on answer sheets with a pencil. If an examinee does not possess one or more of the above "product" skills then results of the test will be negatively affected. These skills are not directly related to mechanical reasoning (i.e., mechanical reasoning does not require reading, writing, speed, or dexterity) but may influence the outcome of a timed paper-and-pencil mechanical aptitude test.

Process assessment, on the other hand, attempts to assess mechanical aptitude without the involvement of product skills. It might determine how well an individual can learn to take such a test, allow for instructional and testing accommodations, and/or assess how well a person could learn to develop mechanical skills represented in the aptitude test. A product assessment of skill with a ruler might require an examinee to measure lines and record the answers on an answer sheet. The test is scored and the results are compared to a norm table to reveal a percentile score. In a process assessment, the evaluator would ask the consumer to identify the different lines on a ruler (e.g., 1", 1/2", 1/4", 1/8"). If unable, then the evaluatee would be instructed and appropriate accommodations provided to enhance learning and recall, and the activity administered again to assess what the consumer understood and remembered.

Product assessment is more useful with "higher functioning" individuals who can reason abstractly, have a good range of general skills and experiences, and can generalize learned information across settings. Process assessment would be appropriate for individuals with limited educational and cultural experiences, and who have difficulty generalizing information across settings.

It has been argued that the information gained from vocational evaluation (e.g., work sample results) with individuals who are severely mentally disabled, cannot be generalized to the world-of-work. Although there is some merit to this argument, it is not the goal of process assessment to generalize what was **learned**, but to generalize the process **techniques** (e.g., modifications) that resulted in improved performance (Gold, nd). If such modifications and accommodations improve functioning on work samples and tests, then they should have similar value when applied to learning, living, and working activities as well. This is the essence of "vocational prognosis" described earlier.

The goal of evaluation is to minimize the impact of an individual's disability on testing and assessment, so that the results reflect what a person knows rather than what is inherent in the limitations of the disability. The Americans with Disabilities Act (ADA) qualifies the administration of tests through the following regulation.

It is unlawful for a covered entity to fail to select and administer tests concerning employment in the most effective manner to ensure that, when a test is administered to a job applicant or employee who has a disability that impairs sensory, manual or speaking skills, the

test results accurately reflect the skills, aptitude, or whatever other factor of the applicant or employee that the test purports to measure, rather than reflecting the impaired sensory, manual, or speaking skills of such employee or applicant (except where such skills are the factors that the test purports to measure). (highlighting added) (Federal Register, July 26, 1991, p. 35737)

In short, evaluators need to carefully choose and use tests and work samples that evaluate abilities rather than disabilities (Thomas, 1992). They must be constantly aware of the affects that disability and previous learning and experience have on testing, and modify their strategies when necessary. After each and every test has been given, evaluators should first ask themselves if the results of this activity are a true and accurate representation of what the person can do at that time. If the answer is "no" then the evaluation should focus on determining not only why the problem exists, but how it can be rectified to improve performance throughout the remaining process.

Evaluation, Transition, and Placement Models

Within the school-to-work transition model, Will (1984) identified three "bridges" between high school and employment: no special services, time-limited services, and ongoing services (Brolin, 1995; Wheeler, 1987).

The first bridge, no special services, refers to the community services available to anyone seeking local employment—employment agencies, want ads, family and friends, etc. The second bridge, time-limited services, are provided by agencies such as Vocational Rehabilitation, and generally fall under the "train- place" model. Consumers are provided with training (e.g., vocational training, work adjustment training) and then placed in jobs where the skills learned in training can be generalized to employment settings. Individuals who have the ability to generalize learned information to a variety of settings can profit from the "train-place" model (Botterbusch, 1989).

Ongoing services, the final bridge, are provided to consumers who need considerable support to obtain and maintain employment. Ongoing services incorporate the "place-train" model (Botterbusch, 1989) found in supported employment. An individual needing ongoing services is unable to readily generalize what is learned, and is therefore placed in a job first and then trained in the skills and behaviors required for that specific job. In the "train-place" model, the case is closed once the worker has maintained stable employment (e.g., employed for 60 days). Individuals requiring support under the "place-train" model are usually not closed since long-term follow-up may be necessary to maintain employment.

An important focus of vocational evaluation is to determine the most appropriate placement "bridge" for the consumer, by assessing generalization skills. When the method of transition is identified, along with appropriate supports for success, then a more successful placement can be assured. This transition model is consistent with product versus process

assessment model where product assessment is appropriate for train-place services, and process assessment is appropriate for place-train services. A number of community rehabilitation programs have created a modified train-place-train model for consumers who can profit from this expanded service.

Halpern (1985) modified Will's model of transition from high school to "employment," to a model of transition from high school to "community adjustment." The term community adjustment incorporates three dimensions, or "pillars":

1. employment (which is consistent with Will's model)
2. residential environment; and,
3. social and interpersonal networks.

These three pillars are seen as being independent but equally important in supporting successful community adjustment. The idea is that if one pillar collapses, the other two may not be far behind (Wheeler, 1987). Brolin (1995) also developed a model using Will's three bridges, but expanding on Halpern's to include "elementary" school through high school; and transitioning to employment, community living, and socialization.

The Individuals with Disabilities Education Act of 1990 (IDEA, P.L. 101-476) defines **transition services** as: a coordinated set of activities for a student, designed within an outcome-oriented process, which promotes movement from school to post-school activities, **including postsecondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living and community participation.** The coordinated set of activities shall take into account the student's preferences and interests, and shall include instruction, community experiences, the development of employment and other post school adult living objectives, and when appropriate, acquisition of daily living skills and **functional vocational evaluation.** (boldface added)

IDEA expanded the three post-school activities of Halpern and Brolin (employment, community living, and socialization), to the seven specified in the above definition. It also provided for the use of vocational evaluation services when deemed appropriate.

The concept of transition is not new and has been used in the past to describe the movement of clients from "transitional rehabilitation facilities" (or transitional sheltered workshops) to community employment. The transition model can be applied to adults with disabilities who are transitioning from unemployment (e.g., home, hospital, community rehabilitation program) to employment and independent living in the community. A **Transition Analysis Matrix** (Thomas, 1991) has been developed to describe the transition of adults with traumatic brain injuries back into the community through the use of vocational evaluation (see Appendix A). The model identifies five transition "environments":

1. vocational,
2. personal/social/family,
3. residential/domestic/consumer,
4. community access, and
5. recreation/leisure.

Transportation was not considered to be a separate factor but an important access element in each and every one of the environments. The Matrix also identifies three different "participants" (in-house staff/programs, family, other agencies) who can work closely with the individual to achieve the goals of transition in one or more of the five environments.

Vocational evaluators need to be sensitive to transition issues and environments to ensure that consumers can attain full integration into society. This is important not only when working with secondary students but with adults whose ability to access the full range of community resources is in question. However, evaluators must never lose sight of the primary importance of career development and employment in the transition milieu.

Conclusion

The definitions, descriptions, and statements reviewed in this chapter provide important direction for the practice of vocational evaluation and assessment. They all have a slightly different emphasis, but share strong commonalities in their focus on comprehensiveness, systematic orientation, work and careers, empowerment, and professionalism. Everyone needs a vocational assessment, but not everyone needs a vocational evaluation. If assessment provides useable information to assist in planning and placement in education, training, and work, then services can continue as planned. However, if assessment results do not provide needed information, then a vocational evaluation can be conducted and the results of that process incorporated with other assessment data to provide new direction.

The available theories, philosophies, and models cannot fully express the complexity of vocational evaluation and assessment in helping people, with vastly different backgrounds and goals, develop productive plans for their futures. It is not simply testing or job matching, but an intricate and thoughtful process of exploration, learning, evolution, and decision-making. The complexities of evaluation and assessment are complicated by the recognition of human difference even in individuals with similar disabilities, and fluctuations in the labor market, the economy, and society in general. Evaluators must be sensitive to change in people and environments, and recognize the opportunities in change for improving the quality of life for those they serve.

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CHAPTER TWO

Standards and Professional Guidelines Influencing Practice Introduction

Nationally accepted accreditation guidelines, certification standards, and codes of ethics have been established to regulate the practice of vocational evaluation and assessment and ensure the quality of service delivery. Unfortunately, not all states mandate, or even encourage, that evaluation providers abide by these professional standards, guidelines, and codes, and, therefore, the service is not always provided as it should. As a result, it is the reputation of evaluation, and not that of the untrained or irresponsible evaluator, that suffers, often resulting in a reduction or elimination of the service. Evaluation works when performed competently, responsibly, and ethically.

Four different sets of vocational evaluation standards, guidelines, and codes for effective practice will be reviewed including: CARF Standards; the CCWAVES Knowledge and Performance Areas; the CCWAVES Code of Ethics; and, the Interdisciplinary Council's competencies. These standards and guidelines will change over time and professionals interested in current information should contact the appropriate organization for their newest accreditation or certification manuals (refer to the Resources appendix for addresses and telephone numbers).

CARF Accreditation Standards

CARF (formerly known as the Commission on Accreditation of Rehabilitation Facilities) was founded in 1966 as a national accrediting organization. Its mission is to "...serve as the preeminent standards-setting and accrediting body, promoting and advocating for the delivery of quality rehabilitation services" (CARF, 1996, p. v, modified 1997). Comprehensive Vocational Evaluation Services is one of many different program areas that is covered by CARF accreditation. Approximately 855 vocational evaluation programs throughout the United States currently hold full three-year accreditation.

All eight Comprehensive Vocational Evaluation Services standards must be met along with standards in other sections of the manual to ensure that the evaluation program is well managed, and that quality services are provided. Following is a summary of the eight standards and guidelines that are contained in the 1996 Standards Manual and Interpretive Guidelines for Employment and Community Support Services (CARF, 1996, pp. 59-3.A - 64-3.A). Standards are reviewed and modified annually.

The first standard stresses the need to help consumers make informed vocational choices by: 1) collecting local labor market and specific job information (e.g., wages, training and job requirements, availability); and, 2) evaluating personal skills, abilities, behaviors, and other attributes that relate to employment.

The second standard addresses the need to develop, continuously review, and modify (when necessary) an individualized written vocational evaluation plan with the person served, based on what is known and what is additionally needed. Specific content of the plan is detailed in the standards.

The third standard describes the need for a written vocational evaluation report. The standards outline report content and emphasize the need for recommendations to address training/education opportunities, career preparation, resources and supports, and employment.

The fourth standard requires that services be provided by, or under the supervision of, a qualified “vocational evaluator” or “vocational specialist.” Guidelines are provided that specify the work experience, education, and/or certification or licensure needed for the two positions.

The fifth standard identifies and profiles the three techniques used to evaluate persons served. They include work samples, situational assessment, and psychological testing.

The sixth standard lists 20 information areas, including achievement, supports, interests, learning style, and transferable skills, that should be assessed through Comprehensive Vocational Evaluation Services.

The seventh standard describes the need to consider reasonable accommodation and assistive technology throughout the evaluation process. The guidelines provide examples of areas of technology to be considered (e.g., adapted tools and switches, computer access, mobility).

The eighth and final standard reviews the content of a functional capacities assessment report, to include strengths, limitations, and strategies to overcome limitations (e.g., supports and accommodations).

CCWAVES Certification Standards

Whereas CARF standards are designed for the accreditation of vocational evaluation programs and services, national standards are also available for the certification of vocational evaluators. Through the efforts of the Vocational Evaluation and Work Adjustment Association (VEWAA), the Commission on Certification of Work Adjustment and Vocational Evaluation Specialists (CCWAVES) was established as an independent Commission in 1981. Individuals can become a Certified Vocational Evaluator (CVE) by meeting a combination of appropriate education and work experience, and passing an examination. Certification is valid for a five-year period and can be renewed through 80 contact (clock) hours of acceptable continuing education (e.g., courses, workshops) or through re-examination, every five years. (Editor’s note: CCWAVES closed in 2008 and no new applications are accepted. Certificants can maintain certification through the Commission on Rehabilitation Counselor Certification).

Both certification and certification maintenance must be directly related to a specified combination of the following fourteen Knowledge and Performance Area Definitions (CCWAVES, 1996, pp. 15-18).

Foundations of Vocational Evaluation. The philosophy and process of vocational evaluation involves knowledge of the basic philosophies, practices, and processes of vocational evaluation as applied to various disability populations in public and private settings. Such knowledge includes an understanding of specific instruments and clinical skills needed to provide meaningful services. Knowledge in this area also encompasses an understanding of legislation and how various legislation affects vocational evaluation services. The remaining

Knowledge and Performance areas described below are examples of the types of practices and processes that are a part of the philosophy of vocational evaluation.

Occupational information includes job codes, definitions, industrial classifications, worker functions, classification of instructional program (CIP) codes, worker traits, physical demands, working conditions, worker-learner interests and temperaments and other labor market and training information as found in standard sources such as the Dictionary of Occupational Titles (and supplements), the Guide to Occupational Exploration, the Occupational Outlook Handbook, and various computerized databases. Related sources of labor market and training information deal with such subjects as the demand for workers, trends, training requirements, career ladders, geographical/industrial areas where jobs/training are located and prevailing local wages. Occupational information also involves identifying vocational training programs, curricula, agencies and resources that may provide services.

Functional aspects of disability refer to a body of knowledge about disabilities and their effect on work-related and independent living functions, together with recommendations for services that might enhance an individual's overall functional capacity or the community's inclusion of the individual.

Planning. Individualized vocational evaluation planning is an organized process and set of techniques for developing and writing a plan to structure individual evaluations. Specific skills include planning and the ability to integrate information from consumers and referral sources with other relevant data. This planning is an on-going process. All planning is conducted involving the individual to the greatest extent possible.

Vocational interviewing involves the use of methods for obtaining or providing information about an individual's vocational, educational, legal, medical, psychological, economic, and social background, primarily for the purpose of vocational exploration, transferrable skills assessment, and vocational evaluation planning. Attitudes, values and interests pertaining to these areas are also considered relevant. The skills required include interviewing, an understanding of personality and human development, and the ability to analyze and interpret verbal and non-verbal behavior.

Report development and communication of results and recommendations involve knowledge of the process for developing both written vocational evaluation reports (including format and writing style) and oral communication skills. The required skills include the ability to gather, analyze, integrate, synthesize, and interpret results with other relevant data in order to provide useful recommendations for employment, training, accommodations, adjustment, and other vocational services. The ability to orally communicate and interpret relevant evaluation data effectively in meetings with clients and their families as well as in expert testimony situations is also important.

Modification and accommodation are techniques that require knowledge and application employment support services. Techniques include methods for overcoming architectural barriers and specific knowledge of a consumer's functional limitations and abilities as they relate to modification and accommodation needs in any life setting.

Standardized Testing. General knowledge of testing and measurement principles and the use of standardized instruments is needed to provide a quantitative assessment of an individual's cognitive, psychomotor, and affective traits. The required skills include selection, administration, modification, scoring, and interpretation as well as a basic understanding of the theory of tests and measurements (validity, reliability, scoring, and norms).

Assessment Techniques. The area of work samples and systems requires knowledge about the theory and practical application of locally and commercially developed work samples, work sample systems, and vocational evaluation systems. The skills involved include development, selection, and proper use of work samples and systems, as well as the ability to interpret both objective and subjective information derived from the use of the work samples and systems.

Functional skills assessment is a process of determining an individual's ability to function independently in various life situations, including transition from school to adult living. Functional skills encompass basic skills needed to work or function in community-based settings (e.g., daily living activities, money management, community mobility, ability to use local resources and supports needed in home, community, and work environments).

Behavioral observation is the systematic process for observing, recording, and interpreting work-related behaviors. It requires knowledge about various observational and recording techniques and sources of error that might influence the interpretation of data. Skills include the ability to schedule, observe, record, and interpret work-related behavior in a variety of settings using various instruments/techniques.

CCWAVES Code of Ethics

In 1965, the American Association of Work Evaluators was formed, and in 1967, it dissolved into the Vocational Evaluation and Work Adjustment Association when VEWAA became a professional division of the National Rehabilitation Association. As described in its current mission statement:

VEWAA as an organization is deeply committed to promoting the continued development and advancement of the professions of vocational evaluation and work adjustment by assuring that individual members will be afforded maximum opportunities for training, education, and professional support as they provide the best quality of service (VEWAA Brochure, 1997.)

The first Code of Ethics for vocational evaluators was developed by VEWAA, and along with a variety of other professional codes (Commission on Rehabilitation Counselor Certification, American Psychological Association, American Counseling Association, National Board for Counselor Certification, Certified Insurance Rehabilitation Specialists), served as the model for the CCWAVES Code of Ethics. Since VEWAA is a voluntary organization, and membership is not required for practice, its Code of Ethics is not legally binding. In addition, it provided only basic ethical principles, and further descriptive detail was needed so that it could be applied to professional practice.

Given that CCWAVES is a professional certifying body, it needs a Code of Ethics to regulate the practice of individuals holding the CVE designation. If the Code is violated, CCWAVES can investigate the alleged violation and take corrective action if necessary, which could include the suspension or even revocation of an individual's certification, as described in the Code's Guidelines and Procedures for Processing Ethical Complaints. The CCWAVES Code of Ethics consists of eight Tenets (or general principles). The second level consists of Standards, which further define the Tenets. The third and final level, Guidelines, provides a practical and applied understanding of the Standards, for determining compliance. An example of a Tenet (labeled 5), Standard (labeled 5.2), and Guideline (labeled 5.2.3) is as follows:

Tenet 5 – Confidentiality

Professionals shall respect the confidentiality of information obtained from clients in the course of their work.

5.2 Professionals will safeguard the maintenance, storage, and disposal of client records so unauthorized persons cannot gain access to them.

5.2.3 Professionals will not forward any confidential information to another person, agency or potential employers without the written permission of the client, the client's legal guardian or the referral source and without considering the recipient's "need to know," unless ordered to do so by a court of law.
(CCWAVES, nd, pp. 6-7)

In the interest of brevity, only the eight Tenets from the CCWAVES Code of Ethics will be given (CCWAVES, nd, pp. 2-10)

CCWAVES CODE OF ETHICS (In Summary)

Tenet 1: Moral and Ethical Standards

Professionals shall behave in a moral and ethical manner in the conduct of their professional roles.

Tenet 2: Legal Standards

Vocational Evaluators and Work Adjustment Professionals shall abide by local, state, and federal laws and statutes in the conduct of their professions, maintaining the integrity of the Code of Ethics and avoiding any behavior which would cause harm to others.

Tenet 3: Professional-Client Relationship

Professionals shall respect the dignity and worth of all individuals with whom they work. The primary ethical obligation of professionals is to their clients, or those persons who are directly receiving their services. Professionals will

endeavor at all times to protect each client's welfare and to place the client's interest above their own.

Tenet 4: Professional Relationships

Inter-professional cooperative relationships shall be seen as vital in achieving optimum benefits for clients. Professionals shall respect the value and roles of professionals and staff in other disciplines and act with integrity in their relationships with professional colleagues, organizations, agencies, referral sources, and related disciplines.

Tenet 5: Confidentiality

Professionals shall respect the confidentiality of information obtained from clients in the course of their work.

Tenet 6: Professional Competency

Professionals shall provide services to clients which demonstrate competence of critical knowledge and performance areas, as established by CCWAVES, and ensure that all services are necessary and appropriate.

Tenet 7: Research and Publication

Professionals shall volunteer to engage in or support research and publication activities that will benefit service delivery.

Tenet 8: Consultation

Professionals shall adhere to recognized professional practices in pricing, promoting and contracting their services.

The Interdisciplinary Council's Competencies

As stated in their Position Paper, "The Interdisciplinary Council on Vocational Evaluation and Assessment is a national coalition which represents the issues and concerns of personnel involved in vocational evaluation and assessment across a variety of settings and disciplines" (Smith, Lombard, Neubert, Leconte, Rothenbacher, and Sitlington, 1995. p. 1). It is composed of 11 professional organizations that have a common interest in competent and uniform practice. To that end, the Position Paper contains the following list of Competencies (Smith et al., 1995. pp. 3-4).

The Interdisciplinary Council strongly recommends that all individuals providing vocational evaluation and assessment services demonstrate competency or successful completion of training in competencies related to each of the guiding principles identified in this document. They include the following:

COMPETENCIES

1. The ability to select, adopt, and/or develop methods, and approaches which are useful in determining an individual's attributes, abilities, and needs.
2. The ability to utilize alternative methods and approaches which can be used to cross validate information generated from other assessment sources.
3. The ability to conduct formal and/or informal behavioral observation strategies which can be integrated in a variety of settings.
4. The ability to collect and interpret ongoing data that can be utilized to promote successful transition through critical junctures of the individual's career development.
5. The ability to interpret vocational evaluation and assessment data in a manner that contributes to the total service delivery system. Vocational evaluation and assessment team members must be capable of synthesizing and reporting formal and informal data in a manner that promotes appropriate planning, appropriate goal setting, and coordination of needed support services.
6. The ability to function as an affective participant on an interdisciplinary team.
7. The ability to select, implement and integrate evaluation and assessment approaches which are current, valid, reliable, and grounded in career, vocational and work contexts.

Along with VEWAA and CCWAVES there are a number of professional organizations that maintain divisions or special interest groups for vocational evaluation and assessment. A sample of these organizations includes:

National Association of Vocational Assessment in Education, of the American Vocational Association – Special Needs Division

Division on Vocational Evaluation/Career Assessment, of the Professional Association of Rehabilitation Counselors

Division on Career Development and Transition, of the Council for Exceptional Children

National Association of Vocational Education Special Needs Personnel, of the American Vocational Association – Special Needs Division

National Association of School Psychologists

National Association of Disability Evaluating Professionals National Association of Rehabilitation Professionals in the Private Sector

It is important to remember that vocational evaluation is both a profession and a discipline. There are states where practicing evaluators must possess appropriate education,

training, or credentials (e.g., CVE) in order to provide services to schools, vocational rehabilitation, or worker compensation clients. However, there are state agencies, community-based facilities, secondary schools, institutions, employment programs and private practices that do not place restrictions on who is hired or assigned to provide evaluations. Therefore, it is the responsibility of qualified vocational evaluators and their professional and certification associations, to ensure that ethical principles and accepted practices (as specified above) are applied in the delivery of evaluation services by professionals in other disciplines, and by all agencies and institutions that offer the service (Thomas, 1994). If an evaluator, supervisor, or unit fails to function in an ethical or competent manner, the problem should be brought to their attention by sharing the appropriate code or guideline, and corrective action taken. Incompetent practice will lead to devaluation of the field; and it is consumers who will suffer the most at the hands of untrained or inexperienced evaluators.

Conclusion

A rich variety of standards and professional guidelines is available to ensure the competent and ethical delivery of vocational evaluation services. Accreditation is available to agencies, facilities, and institutions that offer evaluation. In addition, certification is available to qualified vocational evaluators who desire professional recognition or need to meet certification requirements for practice in a particular state, secondary school, or community-based facility. Ethical codes have been created to protect consumers and referral sources from unethical and incompetent service providers. Professional associations and divisions that specialize in vocational evaluation and assessment provide practitioners with opportunities to become more involved in the field and to upgrade their skills. It is the responsibility of qualified evaluators and recognized organizations to ensure that, no matter who offers evaluation services, they are delivered in an ethical and professional manner, so that consumers can gain accurate and useful information about their abilities, needs, and opportunities.

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CHAPTER THREE

Role and Function of the Vocational Evaluator

Introduction

The duties of vocational evaluators are determined, in part, by a number of factors, such as: the types and numbers of individuals being served, the goals of the evaluation, length and instrumentation of the evaluation, and the skill and training of the evaluator. However, there are fundamental tasks that all evaluators perform, or should be prepared to perform in special situations. A number of regional and national studies are available that detail the role and function of the vocational evaluator. Results from some of the earlier investigations (Coffey, 1978; Egerman & Gilbert, 1969; Gannaway & Sink, 1979; Pruitt, 1986; Sink & Porter, 1978) have marked similarities to each other and to more recent surveys. It is these more recent studies that will be reviewed in this chapter.

Role and Function Studies

Several surveys noted the similarities in job function between school-based evaluators and evaluators in rehabilitation settings (Ellsworth, 1977, in Pruitt, 1986), and between the vocational evaluator and the rehabilitation counselor (Gannaway & Sink, 1979; Ruben & Porter, 1979; Sink & Porter, 1978; Vocational Evaluation Project Final Report, 1975). Although many job tasks were similar to varying degrees, significant differences were found in the amount of time spent in each activity, and the level of importance assigned to that duty as a result of the overall role of the worker. For example, both rehabilitation counselors and vocational evaluators conduct file reviews. Counselors review files to determine eligibility for, and planning of, **rehabilitation services**. Evaluators review files to determine appropriateness for, and planning of, **vocational evaluation services**. Although the goal for the consumer is the same in both settings (e. g., stable and satisfying employment) the **processes of** rehabilitation and vocational evaluation are different.

In a major role and function study, 2,500 vocational evaluator competencies were identified and narrowed down to 175 primary competencies (Coffey, 1978; Coffey, Hansen, Menz, & Coker, 1978). The resulting survey (using a 5-point Likert-type scale) was administered to vocational evaluation practitioners, students, and educators in eight states in the southeast. This survey was later used to conduct a national survey (Sigmon, Couch, & Halpin, 1987) and the results compared to the Coffey (1978) data to determine consistency of responses. High competency correlations between the regional and national sample groups suggested consensus, and allowed standards to be set for evaluator certification based on a nationally recognized and uniform set of competencies.

In a 1985 national survey, responses from 106 practicing vocational evaluators on a 39-item survey were analyzed from three different settings: rehabilitation (agency, facility); school (secondary schools, community colleges); private sector (self-employed, private rehabilitation/evaluation; Thomas, 1986). One section of the survey requested information on the respondents' three most **time consuming** job duties, the three most important job duties, and the

three most difficult duties. In all settings, report writing and evaluation (administration and scoring instruments) was rated as the most time consuming, most important, and most difficult job duties. Other high ratings under level of difficulty and importance were scheduling, marketing, and staffing, particularly in the rehabilitation and school settings. Budgeting received a high difficulty rating under the school category. Case management received a high difficulty rating under the rehabilitation category. The private category had high difficulty and importance ratings for administration of instruments, and a high difficulty rating for evaluation planning.

Leahy and Wright (1988) analyzed role and function data from surveys of 270 vocational evaluators employed in public (48%), nonprofit facilities (29%), and private for-profit (22%) sectors across the country. The Rehabilitation Skills Inventory that was used consisted of 114 competency statements (using a 5-point Likert-type scale), and item responses were grouped into 10 clusters and labeled. Six competency clusters were perceived to be at least moderately important by evaluators in their work role. In their order of importance, the six clusters include:

1. Assessment planning and interpretation
2. Vocational counseling
3. Assessment administration
4. Job analysis
5. Case management
6. Personal adjustment counseling

A final national vocational evaluator role and function study was conducted on employed vocational evaluators from four settings: Vocational Rehabilitation offices, public schools, CARF Accredited rehabilitation facilities (private nonprofit), and the private for-profit sector (Taylor, Bordieri, Crimando, & Janikowski, 1993; Taylor, Bordieri, & Lee, 1993). The Vocational Evaluator Job Task Inventory-2, consisting of 84 job task statements and using a 5-point Likert-type scale for importance, was constructed specifically for this study. Factor analysis of the 526 useable surveys resulted in the identification of six factors:

- Factor I: Vocational Counseling
- Factor II: Behavioral Observation
- Factor III: Occupational Development
- Factor IV: Standardized Assessment
- Factor V: Professionalism
- Factor VI: Case Management

Although the job tasks of vocational evaluators contained in these six factors are more similar than dissimilar across the four employment settings, several differences were noted regarding the emphasis in job function areas by setting. For example, the following four employment groups rated one or several of the factors higher in importance when compared to evaluators in the other settings (Taylor, Bordieri, & Lee, 1993, p. 152):

- Evaluators employed in private for-profit settings perceived Behavioral Observation as less important compared to those employed in public school and private nonprofit settings.

- Private for-profit evaluators rated Occupational Development as more important than evaluators in public school and state agency settings.
- Private nonprofit evaluators rated Case Management and Standardized Assessment as more important job functions than those employed in public school settings.
- Evaluators employed in public school settings perceived Professionalism as being more important compared to those employed in private nonprofit and private for-profit settings.
- Of note is that all four employment settings rated the importance of Vocational Counseling as “high” in relation to their overall job activities. Job task items that were related to work samples and situational assessment loaded on the Behavioral Observation factor. This shared characteristic is not surprising since work samples and situational assessment both rely heavily on behavioral observation.

Three Roles of the Vocational Evaluator

As documented above, much has been written about the role and function of the vocational evaluator. However, beyond the daily assessment tasks are three additional roles that are essential to expanding the visibility, marketability, recognition, and social value of vocational evaluation (Sawyer, 1987; Thomas, 1994). These on-going professional roles have taken on even more importance in current rehabilitation and transition environments that promote informed choice and career development. The three roles of vocational/career expert, disability specialist, and educator, must be developed and practiced so that they become a part of the evaluator’s daily routine (Thomas, 1997). Just as the opportunities for self-determination and career development are made available to consumers of assessment services, evaluators must ensure that these same opportunities are also available to them as evolving professionals. To fully appreciate the importance of these three roles, they must be considered, and applied, within the context of culture.

A Cultural Perspective of Vocational Evaluation

Condeluci (1995, 1996) provides a provocative and enlightening perspective of the feelings and attitudes held by individuals with disabilities, rehabilitation providers (which includes vocational evaluators), and society in general, regarding status and opportunity. His view is that society is made up of a unique variety of “cultures.” There are those cultures to which many people, whether by birth or choice, want to belong. They may include, ethnic cultures (e.g., African, Italian, Scottish), religious cultures (e.g., Christian, Jewish, Moslem, Hindu, or even a specific sect or church), educational cultures (e.g., being a student or alumni of a particular high school or university), work cultures (e.g., specific trade groups or professions), and social cultures (e.g., organizations, clubs, societies), to name a few.

On the other hand, there are those cultures to which individuals may not want to belong because of a negative connotation or stigma—the “disability culture” for example. With the exception of support groups, clubs, and associations that individuals with disabilities voluntarily

join for personal growth and involvement, much of society has assigned “the disabled” to a station in life offering less than equal status.

This negative perception of disability as a typically undesired culture also impacts on rehabilitation providers. When providers reveal that they work in the field of rehabilitation, it is not uncommon to hear an uninformed person say something like, “Oh how wonderful it is that we have people like **you** to work with people like **them**.” This kind of attitude places practitioners such as vocational evaluators, work adjustment specialists, and rehabilitation counselors within the disability culture as well. With a desire for equal access, individuals with disabilities want to rise out of a negatively viewed disability culture and into more respected and productive cultures in society.

Condeluci (1995, 1996), asserts that rehabilitation providers are viewed by individuals with disabilities (and society as a whole) as being a part of the disability culture. Since most individuals with disabilities want to transition out of the disability culture, it is difficult for them to turn to rehabilitation practitioners who are, themselves, regarded as being trapped in the same culture. Therefore, persons with disabilities may turn for help to professionals who are considered to be “outside” the disability culture (e.g., physicians, psychologists, allied health providers)—the place where they would prefer to be.

If the concept of the disability culture introduced by Dr. Condeluci is considered to have merit, then vocational evaluators have no other choice but to change their image on either side of that culture. It is critical that vocational evaluators be recognized as rendering a service that has value to all individuals, with and without disabilities, who are seeking career direction. Evaluators must be regarded as offering professional services to society that are used by **everyone** when needed (Leconte, 1991; McDaniel, 1986). When this occurs, the image of a rehabilitation service mired in a disability culture will be replaced by one of a valued professional discipline that most people, including persons with disabilities, will want to use to help identify and achieve their career goals.

Implementing the three roles of vocational/career expert, disability specialist, and educator are the first step in changing attitudes and opinions about the importance and value of vocational evaluation services. The remainder of this chapter will describe how each role can be used to achieve this objective.

The Evaluator as Vocational/Career Expert

It is of utmost importance that consumers, referral sources, and the general public understand that evaluators are, first and foremost, “vocational and career experts.” This term may bring to mind the more well-known forensic role of the “vocational expert” found in Social Security disability and worker compensation arenas. However, the term must be recognized in a much broader context.

Vocational evaluators have the resources, skills, and responsibility to provide accurate information on a consumer's vocational and career options and directions. To do their jobs properly, evaluators need to know about local and national jobs, employment conditions, current

and future labor market trends, and the community resources available to help consumers achieve optimum employment success. Intimate knowledge of occupational information contained in specialized publications and software, and the ability to collect such data through local job analysis and labor market surveys represents the primary expertise of the evaluator. Literature on certification, accreditation, role and function studies, and graduate-level evaluator training support (and in some cases, mandate) the possession for such critical knowledge and skills (CARF, 1996; CCWAVES, 1996; Coffey, 1978; Leahy & Wright, 1988; Sigmon, Couch, & Halpin, 1987; Sink & Porter, 1978; Taylor, Bordieri, Crimando, & Janikowski, 1993; Taylor, Bordieri, & Lee, 1993; Taylor & Pell, 1993; Thomas & Sigmon, 1989). In fact, in CARF's 1996 Standards Manual and Interpretive Guidelines for Employment and Community Support Services, "Comprehensive Vocational Evaluation Services" falls under the category of EMPLOYMENT SERVICES.

Another equally important skill documented in the above literature is the ability to use a wide variety of assessment instruments and techniques to determine interest and potential. Assessment results can be shared with consumers and used in combination with available occupational information to help them effectively choose jobs and develop career plans. Vocational evaluation provides a unique opportunity for personal exploration and decision making that is usually unavailable to most people in society who want and need help with career direction.

The skills that set vocational evaluators apart from most every other rehabilitation and transition professional are 1) their thorough knowledge of occupational information and resources, and vocationally related assessment instruments and techniques, and 2) their ability to help people match themselves with satisfying work and training, and develop appropriate career plans. This is the most important service evaluators have to offer, and it must be emphasized first and foremost in any consumer orientation and marketing activity.

Vocational evaluators do not provide rehabilitation in the strictest sense of the word. This falls within the purview of psychiatrists, orthopedists, physical therapists, occupational therapists, rehabilitation nurses, and rehabilitation counselors, to name a few. Evaluators are a part of the "vocational services" provided in settings such as rehabilitation agencies and programs, school-based transition programs, social service agencies, institutions, and employment training programs. Vocational evaluators in private practice routinely contract with a variety of rehabilitation companies and agencies to provide "vocational/career assessment" services, not "rehabilitation" services.

A vocational evaluator who provided assessment services to injured workers from a particular company started receiving calls from the company president asking for career assessments with his own high school-aged teenagers. He felt that since evaluation was so effective in return-to-work planning with his injured workers, it would serve members of his own family equally well when choosing a college major. The evaluator was also contracted to conduct job analysis on key jobs in the company in order to assess candidates in final consideration for these jobs. In the eyes of the employer, the evaluator was recognized more as a vocational/career expert rather than a rehabilitation provider.

The Evaluator as Disability Specialist

A uniquely challenging aspect of the evaluator's primary role as a vocational/career expert, is the need to consider the impact of disabling conditions and impairments on employment, training, job preparation, and career development. In addition to understanding the barriers created by physical, mental and sensory disabilities, evaluators must also be sensitive to the significant social, cultural, and economic conditions and stigmas that limit human potential and opportunity.

Vocational evaluators must have a strong foundation in medical, psychosocial, and functional aspects of disability and an understanding of how they impact on employment and resource needs. Knowledge of how rehabilitation and assistive technology services can be used to optimize placement success is fundamental to the vocational evaluator. Literature on evaluator certification, accreditation standards, and curriculum guidelines for graduate-level evaluator preparation strongly support the need for these special skills (CARF, 1996; CCWAVES, 1996; Coffey, 1978; Leahy & Wright, 1988; Sigmon, Couch, & Halpin, 1987; Sink & Porter, 1978; Taylor, Bordieri, Crimando, & Janikowski, 1993; Taylor, Bordieri & Lee, 1993; Taylor & Pell, 1993; Thomas & Sigmon, 1989).

Just as the point of person-first language is to communicate that the individual is the focus of attention rather than the disability, the vocational evaluator must attend to a consumer's career needs first and then to disability issues that impact on career opportunities. Individuals with disabilities often seek services from recognized professionals first, but who also have a specialized working knowledge of their disability. For example, if a woman with quadriplegia wanted personal counseling, she would first look for a qualified professional (e.g., therapist or psychologist), and second, for one who understood or had experience with her disability. After all, she views herself as an individual first, who just happens to have a disability. Likewise, when individuals with disabilities are trying to determine a career direction, they would want to find a vocational/career expert first, but one that understood how to accommodate their impairments in training and employment. Even the state and Federal agency known as Vocational Rehabilitation places the word "vocational" first in its title, and stresses career development and employment outcome as goals for consumers of its services.

Evaluators are vocational/career experts who also happen to know about disability, and how to overcome barriers to employment. If vocational evaluators can work effectively with individuals with severe disabilities and other significant barriers to employment, then they can work with equal or better levels of success with persons who are not physically or mentally disabled. Vocational evaluation has evolved within the rehabilitation movement, but it has been successfully adapted to other environments, and this has further enhanced its viability as a desirable service. When other disciplines lay claim to evaluation and assessment, its credibility is strengthened. Evaluators do not need to work exclusively with the disability community, but should realize that this is where their services may be needed and valued most. Likewise, some individuals with disabilities may not want to seek assistance with career direction from an evaluator who works exclusively in rehabilitation, but from a professional who is perceived as having broader knowledge of employment opportunities and human potential.

One last important facet of the role of the evaluator as disability specialist, is a thorough understanding of transition, rehabilitation, and disability policy, laws, and regulations. Having an up-to-date working knowledge of state worker compensation laws, the Rehabilitation Act, the Americans with Disabilities Act, Carl D. Perkins Vocational Education Act, and the Individuals with Disabilities Education Act, to name a few, is a fundamental part of the evaluator's repertoire. Other regulations and laws, not limited to rehabilitation or disability, that guide ethical and legal practice in general areas such as communication, test use, reporting of information, and confidentiality, must be familiar to the evaluator as well. Vocational evaluators should maintain a resource library of current laws and regulations that govern practice, protect consumers' rights, and clarify responsibilities.

The Evaluator as Educator

The final role of the vocational evaluator is that of "educator" (Thomas, 1994). This involves creating an awareness of the evaluators' roles as vocational/career expert and disability specialist through various forms of education (e.g., orientation, public relations, marketing, training, lobbying). Purchasers of evaluation services (e.g., rehabilitation counselors, attorneys, secondary schools, social service agencies), consumers and their families, and the general public are all recipients of this educational process. To ensure recognition and inclusion of evaluation services, evaluators must thoroughly educate legislators, authors of regulations and policies that govern the role of assessment in rehabilitation, transition, and employment programs, and Federal and state personnel who implement these regulations and policies. Other professionals (e.g., psychologists, physicians, allied health professionals, social workers, teachers) who may make referrals to evaluators or use assessment reports in planning and service delivery would profit greatly from education as well.

This concept of the rehabilitation professional as educator is not new. It has been used to describe the role of the expert as "educating" the judge during court testimony about rehabilitation or evaluation procedures and outcomes (Deutsch, 1990; Deutsch & Sawyer, 1996). For years, the Vocational Evaluation and Work Adjustment Association has emphasized the need for more aggressive marketing and lobbying, but with limited success. Since many evaluators may not consider themselves good at marketing or lobbying, the idea of being an educator could be perceived as a less threatening approach to achieving the same objective.

To be seen as having social value and worth, the general public must understand how evaluation serves the rehabilitation, education, and human service sectors in our society in helping individuals with barriers to employment achieve independence, financial self-sufficiency, and improved quality of life (Nadolsky, 1969). Existing and potential referral sources need to understand how vocational evaluation and assessment can help them meet or exceed their service mandates. Through the application and orientation processes, consumers need to understand how a partnership with evaluators will help them acquire valuable information to make informed choices about desired employment and requisite career planning strategies.

Education has achieved its goal when consumers recognize how vocational evaluation and assessment can help them identify and plan for their chosen careers. When this level of

understanding is reached, consumers of rehabilitation services will know how to ask their counselors for a vocational evaluation, just as they might ask for dental, medical, legal, or psychological services when needed. More than any other market force, **consumer demand** for vocational evaluation will guarantee its growth. If at some point in time, consumers are able to choose who is on their rehabilitation team, or decide what services they want to purchase (i.e., a voucher system), then vocational evaluation must be one of those services they ask for by name.

Consumers, purchasers of services, regulation writers, and administrators are all part of the “general population,” and must be treated as such when educating them to the fact that vocational evaluation has social value and worth to everyone. To a certain extent, any service that is considered to be worthwhile markets itself. When evaluation benefits a consumer, that consumer will recommend the service to others living within the same culture or community. This “word-of-mouth” process promotes the value of the service through continued demand, with minimal marketing and advertising. An employment training program in a town of 60,000 had increasing difficulty obtaining and keeping clients. When the problem was researched, staff found that clients did not want to use a service that only placed them in entry-level, minimum wage, unskilled jobs they could find on their own. Since most of the dissatisfied consumers were from the same part of town, word got around, and other residents in the neighborhood decided not to use the service as well. Had the program made a positive impact on consumers’ lives, its community reputation, and numbers being served, might have been different. Vocational evaluation must also offer members of society what they want and need if it is to be valued and used.

Recommendations for Improved Recognition

All three roles must be applied when evaluators and assessment units market their services locally. These roles must also be used nationally by VEWAA and CCWAVES to change and improve the field’s image. The role of educator is to teach the general public about the evaluator’s primary expertise as a vocational/career expert, and professional skill as a disability specialist. The following recommendations are given as strategies for improving the value and recognition of the vocational evaluator. The first two recommendations address the quality of the marketable skills of the evaluator. The last recommendation is both individual and organizational in its approach to planning and implementation.

1. Devote time and resources to obtaining further education and training that will upgrade and maintain skills in the three evaluator roles.
2. Develop and regularly update a library of resources (e.g., publications, software, assessment instruments) in occupational information, career development, disability, and appropriate laws and regulations, specific to the needs of the consumers being served.
3. Develop and implement strategies for educating the general public (including consumers and their families, purchasers of services, legislators, and writers and administrators of complementary laws and regulations) about the two primary roles of the professional vocational evaluator.

Vocational evaluation is too important and valuable a service to limit to a particular population, setting, or culture. How well the field is accepted by the disability community and society in general will depend on how well evaluators learn and apply the three roles of vocational/career expert, disability specialist, and educator.

Ancillary Personnel

On a team basis, there are a number of other specialists who can contribute to the vocational evaluation and assessment process (Fourteenth Institute on Rehabilitation Issues (1987). In schools, hospitals, and community rehabilitation programs for example, the evaluation team, frequently headed by the vocational evaluator, may rely on a number of other in-house and community staff for additional assessment information. Results from the ancillary evaluations (those given during the course of the vocational evaluation) can be shared with the evaluation team through written and oral reports. The type of ancillary evaluation provided depends on the availability of qualified staff; and when it is given depends on its importance to developing or modifying the vocational evaluation plan. The information can be synthesized by the vocational evaluator into a single report, or covered in a variety of separate reports that are compiled into a report packet with an introductory summary. Some of the ancillary personnel and their assessment responsibilities include:

Occupational Therapist - Conduct evaluations of independent living, driving, functional capacity, and accommodation needs.

Physical Therapist - Conduct evaluations of functional capacity and accommodation needs.

Physicians - Depending on specialty, provide diagnosis and interpret functional implications and prognosis of various medical and psychiatric conditions. Nurses can also provide useful information in this area including medical care and self-care concerns.

Psychologist - Provide diagnosis and functional information on intelligence, personality, and neurological problems (the latter using a neuropsychologist). Interpret functional meaning of psychological reports.

Counselor (including Rehabilitation Counselor) - Determine personal concerns and problems that might affect evaluation outcome and future placement.

Social Worker - Provide information on family, living, and financial situation.

Pharmacologist or Pharmacist - Review current medications and determine their impact on functioning. Other medical professionals can provide a similar medication review.

Teacher - Provide a curriculum-based assessment of functional abilities and behavior from class.

School Psychologist (or Education Specialist) - Determine intellectual and achievement levels, as well as preferred learning style.

Transition Specialist - Provide a review of progress of school-to-work programming and its impact on placement options.

Rehabilitation Engineer (Assistive Technologist) - Provide an assessment of assistive technology, accommodation, and modification needs and solutions.

Work Area Supervisor - Conduct and provide information on situational and community-based assessments.

Job Coach - Conduct and provide information on situational and community-based assessments.

Recreation Therapist - Provide information on communication, cooperation, and team-work.

Speech Pathologist - Provide information on speech problems and recommend correction.

Audiologist - Provide information on hearing problems and recommend correction.

Vocational evaluation reports can include recommendations made by ancillary staff that are designed to improve placement outcome. If an ancillary assessment cannot be provided as a part of the vocational evaluation, then a report recommendation to offer the service at the completion of evaluation should be made.

Support Staff

In units where evaluators are faced with large workloads, assistance can be provided through the use of aides and technicians (Nadolsky, 1974). The *vocational evaluation aide* **should** have at least a high school education, good communication skills, and a willingness and ability to work with the consumer population being served. Quite often, clerk-typists may be promoted to this position. Evaluation aides may provide all or part of a consumer orientation, set-up work samples, score tests and work samples placing the completed forms and profiles in the participant's working file, inventory and order test and work sample supplies, mail off tests to be computer scored elsewhere, keep the unit neat and orderly, provide or arrange transportation for consumers, make appointments for consumers when necessary, and administer some group paper and pencil tests under the supervision of the evaluator.

The **vocational evaluation technician** is a step above the aide and holds at least an Associate of Arts degree from a community college, preferably in human services. Some units may promote experienced aides or unit secretaries to this position. In addition to covering the same duties held by the aide, the technician will be trained and supervised in the administration and scoring of selected tests, work samples, and situational assessments. The technician may also supervise and observe participants at on-the-job evaluation sites in the community. It is not the

responsibility of the technician to carry an evaluation case load or write reports; this is the job of the vocational evaluator. When technicians reach this level, they should be promoted to a Vocational Evaluator I position.

The Professional Career Ladder

Nadolsky (1974) presented a career ladder for evaluation aides and technicians, as well as for vocational evaluators. The career ladder for evaluators is based on increasing education and/or work experience. He recommends a career ladder beginning with the entry-level **Vocational Evaluator I** position, climbing to a Vocational Evaluator III position. The beginning Vocational Evaluator I position would require a minimum of a Bachelor's degree with a major in a human services area, and no work experience in vocational evaluation.

The **Vocational Evaluator II** position requires a Bachelor's degree in a human services area and two years' experience as a Vocational Evaluator I; or a Master's degree in Vocational Evaluation with no full-time paid work experience. A Master's degree in a related area (e.g., rehabilitation counseling, psychology, education) and one year paid full-time work experience as a vocational evaluator could also be accepted (two years are required to become a CVE). The Evaluator II would have a few more professional duties and responsibilities than the Evaluator I position. Requirements in this section are in line with the CCWAVES standards for becoming a Certified Vocational Evaluator (CVE). A Vocational Evaluator II should either possess CVE certification (preferred), or be eligible for certification.

The **Vocational Evaluator III** position is the highest clinical level and would require a Master's degree in Vocational Evaluation (preferred) with two years full-time paid work experience as a vocational evaluator; or a Master's degree in a related area, and three years full-time paid work experience as a vocational evaluator. In situations where a Master's level evaluator is not available, a Bachelor's degree in a human services area and five years full-time paid work experience as a vocational evaluator would be acceptable. CVE certification should be required. These suggested work experience requirements are higher than those recommended by Nadolsky (1974), and should be given full consideration when administrative duties are a part of the job. The Vocational Evaluator III is also considered a supervisory level and may carry an additional title such as Chief Vocational Evaluator, Senior Vocational Evaluator, Vocational Evaluation Supervisor, or Director of Vocational Evaluation. As evaluators move up this career ladder, their salary and seniority will increase.

Conclusion

The role and function of the vocational evaluator has been well documented through a number of different regional and national studies. National survey research has revealed job task similarities among vocational evaluators in nonprofit and for-profit rehabilitation settings and public schools. Even similarities have been noted between the duties of vocational evaluators and rehabilitation counselors, although, there are differences in the importance and amount of time spent in these related activities. Role and function studies have been used to develop and upgrade CCWAVES' Knowledge and Performance Areas used in the certification and certification maintenance processes.

Vocational evaluators need to expand their roles beyond their daily job duties to include activities that will improve their recognition, visibility, and acceptance by society as a whole. Vocational evaluation and assessment is a service that is of value to everyone and not just to individuals with disabilities and other barriers to employment. By emphasizing the role of the evaluator as vocational/career expert, disability specialist, and educator, the public at large will have a much better understanding and appreciation for how evaluation and assessment can benefit most anyone.

There are a number of other players on the vocational evaluation team who can provide important ancillary evaluations. These evaluations are to be used in developing and modifying the evaluation plan and formulating report recommendations. In addition, support staff in the form of evaluation aides and technicians will provide needed support to the busy evaluator. There is a well-defined career ladder for vocational evaluators that rewards increases in education and/or work experience with concomitant increases in salary and responsibility.

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CHAPTER FOUR

Research in Support of Vocational Evaluation

Introduction

Vocational evaluation plays a critically important role in the successful delivery of vocational rehabilitation, transition, and welfare-to-work services to individuals with disabilities and other barriers to employment. Three key areas of research related to service effectiveness support this premise. The three areas include: (a) putting tests, vocational evaluation, and validity into proper perspective; (b) research supporting the effectiveness of vocational evaluation services; and, (c) the impact of education and certification on vocational evaluator competence and the quality of service delivery. Validating vocational evaluation has taken on greater importance in an era of increasing demands for accountability. When programs and services are unable to demonstrate their effectiveness, their continuation is questioned. This chapter will explore selected research on follow-up and program evaluation studies that have generated outcome information critical to supporting the value of vocational evaluation services.

Vocational evaluation has been criticized for lacking validation research that proves its worth (Thomas, Hiltenbrand, & Tibbs, 1997). Research on its effectiveness has been mixed. There are studies that show little if any relationship between evaluation and employment outcome (Caston & Watson, 1990; D. W. Cook, 1978; D. W. Cook & Brookings, 1980; J. Cook & Razzano, 1994; Cresap, 1987; Ferrin, 1991; Kosciulek, 1991; Kosciulek, Prozonic, & Bell, 1995). However, a review of the literature reveals a wider range of studies that demonstrate the value of vocational evaluation to consumers of vocational rehabilitation agencies, school-to-work transition programs, employment training programs, and welfare-to-work programs. Unfortunately, critics of evaluation services have not focused on the variety of studies supporting its effectiveness, and practicing evaluators must see to it that uninformed skeptics become familiar with this research.

Conditions for Outcome Studies

A recognized approach to validating vocational evaluation services is through the process of participant follow-up and program evaluation. Outcome data collected through follow-up of consumers can continuously facilitate three activities: (a) determine the value of a service; (b) provide direction for improving a service; and, (c) guide and support marketing of a service. Refer to the final chapter on program evaluation for further detail on the collection and use of outcome data. There are several important conditions that must be met when conducting a valid outcome study.

Condition 1. The overall validity of vocational evaluation must be looked at globally and not as it relates to individual instruments and techniques. The success of vocational evaluation is not predicated on the validity of any one instrument but on the collective validity of an aggregate of scores and information from a variety of sources. As a result, the most tangible evaluation variables that can be used to determine the success of the service are the recommendations contained in the report (Peters, Scalia, & Fried, 1993). These can be compared to information in a rehabilitation or transition plan as well as to various training or employment outcomes.

Condition 2. Studies must look at both positive and negative outcome information. It is not enough to determine if recommendations for employment or training do, in fact, lead to success. Studies must also ascertain what happens in cases where placement is not tied to recommendations (i.e., when recommendations are not followed). Comparisons of placement success for referral sources prior to and following the availability of vocational evaluation services, or placement success with and without vocational evaluation, would also be useful measures of its effectiveness. A pre-evaluation, or no evaluation, baseline is needed to determine if vocational evaluation is, in fact, contributing to success. Evaluators must also examine the interaction between the recommendation and the outcome through what are known as false positives and false negatives. A false positive occurs when a recommendation is made for placement in a job or training that is not appropriate and will not result in success (i.e., a positive recommendation is falsely made). When failure occurs, the consumer loses confidence in self, the employer or teacher loses confidence in the referral/placement source, and the referral/placement source loses confidence in the evaluation process. With false negatives, the evaluator recommends against placement in a particular job or training that the consumer is capable of performing successfully (i.e., opportunity for success is lost). It is this false negative decision that creates litigation over testing—when individuals are screened out of jobs or training for which they have the ability. A goal of good outcome research is to minimize the problems associated with making false positive and false negative recommendations.

Condition 3. Outcome studies must look at how extensively report recommendations were used in planning, and if implementation of the plan led to success. Simply comparing outcome (successful or unsuccessful placement) to whether an evaluation was given will provide meaningful information, but it fails to consider the intent and substance of the report recommendations. Some evaluation reports may not recommend employment or training due to the complex nature of the disability and the critical need to address other personal and environmental barriers first. Another problem affecting outcome is the failure of the referral source to use adequately the report recommendations in planning, and to follow through with the plan as developed (Brown, McDaniel, & King, 1995; Gustin & Petterssen, 1978; Kosciulek et al., 1995). In this case, success is contingent upon the willingness, competence, and motivation of the referral source to see to it that the plan is followed as written. In some situations, a lack of resources will also affect adherence to a plan.

Condition 4. Outcome studies must be based on the criteria a referring agency uses for successful closure (e.g., continuous employment for 90 days). Although agency closure criteria should be considered the minimum, follow-up with individuals at least one year after placement could substantiate the lasting benefits of evaluation services.

Condition 5. Follow-up should also determine the impact of evaluation results on quality of life and satisfaction as seen by the consumer, family, friends, teacher, employer, co-workers, referral source, and other service providers. Improvement in employment factors such as job satisfaction, salary or wage earned, employment benefits, or in lifestyle factors such as living arrangements, transportation, community access, and personal/social networks, can also serve as useful quality of life indicators. This process goes beyond the objective data generated through a typical program evaluation to include more subjective but personally meaningful outcomes acquired through quality assurance studies.

There are two additional problems that affect the accuracy of outcome studies, which rely on follow-up. The first problem relates to when, in the rehabilitation or transition process, the vocational evaluation occurs (e.g., near the beginning or the end of service delivery). Evaluations offered early in a rehabilitation or transition process may relate better to service planning than those offered near the end of the process that can more definitively address placement. Follow-up should consider the types of recommendations made (planning for services or placement) in relation to when the evaluation was provided in the overall process. The second problem unduly affecting outcome is the competence of other providers and the quality of their services in meeting the needs of the consumer and referral source as specified in the plan. For example, if an evaluation recommendation and a rehabilitation plan address a particular need for work adjustment, then the success of adjustment services (and the overall rehabilitation plan) is contingent upon the delivery of appropriate and effective services by competent and caring staff. If these problems can be minimized and all five conditions met, then outcome studies can more accurately determine the effectiveness of vocational evaluation.

Tests, Vocational Evaluation, and Validity in Perspective

One long-standing criticism of vocational evaluation is its reliance on standardized tests that generally have only fair predictive validity. In addition, untrained evaluators may either place too much reliance on test scores or reject tests altogether as having no value in vocational decision-making. Kates and Chan (1993) provided a review of the controversy over the use of the General Aptitude Test Battery (GATB), one of the most widely researched and well normed multi-aptitude test batteries available today. In their discussion of validity, they indicated that earlier predictive validity studies based on supervisor ratings averaged .50 or higher.

The *Coefficient of Determination* (computed by squaring the validity coefficient) can be used to estimate the percentage of variance accounted for by the instrument in prediction. When the validity coefficient of .50 is squared, it reveals that only 25% of the variance was accounted for by the GATB in predicting supervisor ratings. If an evaluator using the GATB wanted to be correct even most of the time (51%), then another 26% of the variance that was not accounted for through the test battery must be identified. If an evaluator wanted to account for 75% of the variance in making an employment recommendation, where can the missing 50% of the variance be found?

In most cases, the missing variance (or information) needed to make a more accurate decision could be acquired through file review, interviewing, behavioral observation, additional testing, and the use of work samples, situational assessment, and community-based assessment. Given the complex nature of both jobs and human beings, information from standardized tests such as the GATB will never be able to predict perfectly. Therefore, test results must be supplemented with information on education, work history, support systems, motivation, readiness to work, interests and work values, accommodation needs, and disability and cultural issues, to name a few. These pieces of information help fill in the unaccounted variance, and improve the overall ability to make a more accurate employment prediction, beyond that made through the use of one or two test scores alone. Kates and Chan (1993, p. 92) stated, "In the evaluation (counseling) context, the GATB is not used for job placement or as the sole indicator of an individual's potential performance." In a study of the GATB made by the Committee of the

National Research Council, they “pointed out the limitations and dangers of using any test as the single determining factor for any type of recommendation” (Kates & Chan, 1993, p. 93).

Instruments and techniques used in vocational evaluation and assessment, in and of themselves, have limited predictive validity. However, when used collectively by a trained evaluator, they account for greater variance and increase the accuracy of decision-making. It is difficult to say how much of the variance is accounted for by these more subjective techniques, and this is where the competence and skill of a qualified vocational evaluator becomes an essential ingredient in their appropriate administration and weighted interpretation. Test validity is critically important and should not be overlooked. Even if the test accounts for a small percentage of the variance (e.g., 16%), it is useful in the comprehensive decision-making process and should not be omitted; it is a good foundation on which to build, and would not have been available had the test not been given. However, vocational evaluation cannot be judged on the validity of a test alone. Subjective factors that go into making accurate decisions must be considered and included if research is to weigh appropriately the value of vocational evaluation services. This is where outcome measures available through program evaluation and quality assurance can account for the missing variance and better ascertain the overall success of evaluation and assessment.

Selected Outcome Studies that Support Vocational Evaluation

Although research on the effectiveness of vocational evaluation is relatively limited, the following studies support the utility of evaluation as a successful planning and placement tool with different populations in a variety of settings. Studies conducted as early as 1958 found vocational evaluation to be effective in successfully recommending appropriate training and job placement (Miller, 1958; Rosenberg & Usdane, 1963). However, for the sake of brevity, more recent studies will be reviewed that relate to current practice in three different settings: rehabilitation, school-to-work transition, and welfare and employment programs.

Rehabilitation Programs. Hallenbeck and Campbell (1975) conducted a follow-up study of 200 vocational rehabilitation clients who had received a four-to-six week vocational evaluation at Vocational Guidance and Rehabilitation Services (VGRS) in Cleveland, Ohio. Follow-up by mail or phone was conducted with individuals four months to one year after completion of the evaluation to compare five different categories of recommendations made in the report to outcome. Results indicated that, “70.5% of the evaluators predictions were on target, 16% were over-estimates and 13.5% were under-estimates. The rate of correct predictions was comparable with (Miller, 1958) study of 74% accuracy, and slightly lower than the 85% accuracy of the Rosenberg and Usdane TOWER study (1963)” (Hallenbeck & Campbell, 1975, p. 26).

Williams (1975) conducted a follow-up study to examine the relationship between evaluator recommendations and placement. Follow-up was conducted on 56 vocational rehabilitation clients evaluated between August 1974 and July 1975, by the Vocational Development Center in Menomonie, Wisconsin. Client status/outcome at time of follow-up was compared to report recommendations to determine correspondence. Findings revealed that in the 68% of the cases where recommendations were followed, 92% of the clients were successfully

placed. In the 32% of the cases where recommendations were not followed, only 28% of the clients were successfully placed. The study also cited counselors' reasons why recommendations were helpful or were not followed.

Ward-Ross (1985) reviewed the vocational evaluation reports and Individualized Written Rehabilitation Programs (IWRPs) of 56 closed cases of the North Carolina Division of Vocational Rehabilitation Services, to determine the extent to which counselors used the reports in the planning process. Cases were randomly chosen from a group of vocational evaluations completed in three different evaluation settings during a three-month period in 1982: vocational rehabilitation agency offices, regional rehabilitation hospitals, and rehabilitation facilities. The degree of recommendation utilization in planning was compared to closure status to determine if there was a relationship. The study found that recommendations were followed in 82% of the cases, which is significant beyond the .001 level. In addition, there was an 83% successful closure rate when recommendations were *followed*, a 67% success rate when recommendations were *followed somewhat*, and a 50% success rate when recommendations were *not followed*. There was no significant difference in the level of success and the setting in which the vocational evaluation was conducted.

Marut and Bullis (1985) conducted a study on the relationship between evaluation recommendations and outcomes of individuals who are deaf. Three questions were investigated, one of which related to the percent of evaluation recommendations followed and employment outcome. Report recommendations of 182 individuals who were evaluated at the Southwest Center for the Hearing Impaired in Texas and the Arkansas School for the Deaf were compared to employment status over one year after completing vocational evaluation. Whether an individual was employed or unemployed was compared to the percent of vocational evaluation recommendations followed (50% or less, 75% or more). It was found that when 50% or fewer of the recommendations were followed only 16.6% of the sample was employed. When 75% or more of the recommendations were followed, 83.3% of the sample was employed. Although the types of recommendations had little congruence with employment outcome, the authors concluded, "that as the percentage of VE recommendations that are followed increases, the relationship between VE recommendations and employment outcomes improves in a statistically significant manner. In other words, the closer the VE report is followed in the habilitation/rehabilitation process, the more likely it is that correct decisions regarding the subjects' employment will be made" (Marut & Bullis, 1985, p. 69).

Kosciulek (1991) conducted a study of the relationship between vocational evaluation recommendations and rehabilitation outcomes for 25 individuals with traumatic brain injuries. Follow-up contact was made at least six months after completion of the evaluation to determine employment status. This was compared to two categories: Category 1, 49% or less of the evaluation recommendations followed; and, Category 2, more than 49% of the recommendations followed. Using the 2 x 2 chi-square statistic, he found that Category 1 placements were successful 4% of the time, and Category 2 placements were successful 68% of the time ($p < .01$). The more evaluation recommendations were used in planning, the more successful the job placement. Report recommendations in this study were also assigned to one of three different categories: counseling/work adjustment, training (vocational or academic), or job placement. Little direct relationship was found between the type of recommendation and employment

outcome. The study suggests that success was not the result of the type of service recommended, but whether most recommendations were followed in the subsequent rehabilitation plan.

Dean, Bond, and Lewis (1991) examined the predictive validity of the McCarron-Dial Work Evaluation System with individuals with multiple disabilities. In a study of 62 vocational evaluation clients in a southern Illinois rehabilitation facility, it was found that the system had a multiple regression correlation of .73 ($p < .0001$) when compared to subjects' 60-day vocational placement level. They also found that when vocational evaluators used other assessment instruments and techniques with this population that the simple regression correlation was .77 ($p < .0001$) between the predicted placement level and actual 60-day vocational placement outcome. The study concluded that the McCarron-Dial correlated well with predictions made by evaluators using a variety of other instruments, and between predicted and actual vocational outcomes. It was also found that the "vocational prediction level relationship to actual 60-day vocational level is less consistent for clients having multiple disabilities and for clients with no competitive work history than it is with clients with no more than one severe disability and for clients with a competitive work history" (Dean et al., 1991, p. 315). Chan, Lynch, Dial, Wong, and Kates (1993) reviewed additional studies that supported the predictive validity of the McCarron-Dial System with placement levels and vocational competency. Research into the predictive validity of commercial work samples (i.e., seven Philadelphia Jewish Employment and Vocational Services [JEVS] work samples) has demonstrated a significant relationship between the level of performance, and successful and unsuccessful employment (Berven & Maki, 1979).

Peters et al. (1993) conducted a follow-up study of 116 individuals with a variety of disabilities. They were referred by public-non-profit and private-for-profit rehabilitation agencies in Wyoming and Colorado, for comprehensive vocational evaluations at the Rehabilitation Services Clinic, University of Northern Colorado. The purpose of the study was to determine the relationship between vocational evaluation recommendations and successful outcomes of individuals from seven different categories of disabilities. The evaluation program recommendations were compared to successful and unsuccessful case closure. A successful closure was defined as an individual being employed, involved in training/education, receiving support services, or working toward a recommended vocational goal. An unsuccessful closure was defined as an individual not being employed or engaged in training/education, not receiving support services, or working on a vocational goal that was *not* recommended.

It was found that competitive employment was recommended in 89% of the cases, training/education in 34% of the cases, and supportive services in 58%. Successful closure occurred in 53.4% of the cases, unsuccessful closure occurred in 19.5% of the cases, and not-eligible-for-follow-up occurred in 27.1%. The not-eligible-for-follow-up category was composed mainly of private cases that were in the process of settling, on medical hold, or waiting for limited duty release. When the not-eligible-for-follow-up category was omitted from the study, then 73.8% of the cases were closed successfully.

The succeeding table lists the seven disabilities, in descending order by their size in the study, and their percent of success, excluding cases not-eligible-for-follow-up (Peters et al., 1993, pp. 48–49).

Table 1

Percent Sizes in the Study and Percent of Success of the Seven Disability Categories

Disability Type	Percent Size in Study	Percent of Success
Orthopedic	46	78.0
Neurological	18	50.0
Head injury	11	72.0
Mental (Personality) disorders	9	71.0
Learning disabilities	7	100
Cardiovascular	4	100
Multiple disabilities	4	60.0

Brown et al. (1995) analyzed 587 evaluations provided in 22 public and 11 private not-for-profit rehabilitation settings for the Georgia Division of Rehabilitation Services, during 1992. One of the five research questions, in part, addressed the relationship between evaluation recommendations followed and closure status 26 (successful rehabilitation). The 167 cases closed in status 26 were separated from the remaining 420 cases not closed in status 26. Both groups were analyzed to determine the percent of “hits” (when any one of nine possible recommendations was followed), and “perfect hits” (a perfect match between all recommendations made and recommendations followed). For the 420 cases not closed in status 26:

A “hit” occurred in 184 (43.8%) of the cases while a “perfect hit” occurred in 25 (5.9%) of the cases. In comparison, of the 167 cases classified as 26-closures, a “hit” occurred in 143 (85.1%) of the cases whereas a “perfect hit” occurred in 40 (23.8%) of the cases. Obviously a strong relationship existed between recommendations followed and 26 closures. This would indicate that those counselors that followed evaluator recommendations have an increased likelihood of successful closure (Brown et al., 1995, p. 96).

The authors noted the lack of congruence between evaluation recommendations made and recommendations followed, which was consistent with findings from related research in the field. Some of the reasons for this discrepancy will be presented in the chapter on report writing.

Montgomery (1996) analyzed the files of 100 vocational rehabilitation clients with chronic mental illness (CMI), living in rural and urban areas of eastern and central North Carolina. A scale was developed using eleven characteristics identified by the literature as influencing vocational success with this population. One or two points were given to each characteristic based on its importance to employment (behavior being the highest—two points). Each characteristic was assigned to one or more of three evaluation techniques (psychometric tests, work samples, situational assessment), based on its ability to assess the characteristic in question. The total points for an evaluation (36 points maximum) was then compared to 26 or 28 closure status using significance studies. A logistic regression was also employed to determine the probability of predicting employment. The following table represents the probability of accurately predicting success based on the type of technique used.

Table 2

Probability of Accurately Predicting Success with Each Evaluation Technique

Evaluation Technique	Probability of Predicting Success
Psychometric testing	20%
Work samples	50%
Situational assessment	68%
All three techniques	95%

Individually, work samples and situational assessment had a significant relationship to predicting closure status ($p < .05$), whereas psychometric tests did not ($p < .18$). When all three techniques were used to evaluate all 11 characteristics (a comprehensive vocational evaluation), successful prediction was maximized ($p < .0001$). In support of these findings, Anthony and Jansen (1984) report that psychometric testing is the poorest predictor of employment success for persons with chronic mental illness. However, their research found that vocational evaluations, particularly those that used situational assessments, were useful in helping individuals with CMI achieve employment.

Adelmann, Spitznagel, and Saxon (1997) reviewed 161 cases from a Vocational Rehabilitation unit office in Florida, closed between 1994 and 1996. The study examined the relationship between whether vocational evaluation services were offered and closure status (rehabilitated, status 26; not rehabilitated, status 28). The two largest disability groups included 36.6% orthopedic and 32.9% mental illness, accounting for nearly 70% of the cases. A chi-square static revealed a significant relationship ($p < .01$) between receiving a vocational evaluation and subsequent successful outcome. Approximately 76% percent of the clients receiving a vocational evaluation were successfully closed, while only 39% of the clients who were *not* evaluated were successfully closed.

School-to-Work Transition Programs. Evans (1986) conducted a study of vocational class placement and performance success of 138 special needs students in Louisiana Planning Region V, who received a formal vocational assessment from the Region V Vocational Evaluation Center. There were two objectives of the study: (a) to determine the appropriateness of program placement recommendations made the year prior to student placement in vocational programs; and, (b) to determine if there was a difference in performance of students placed in recommended vocational classes compared to students placed in classes *not* recommended by vocational assessment. Vocational teachers were asked to rate those special needs students from the study group who were in their classes, in each of 11 categories. The following table reveals that students who were placed according to the assessment results performed significantly better than students who were placed in areas other than those recommended in all but two of the 11 categories (Evans, 1986, p. 137).

Table 3

Categories of Assessment Results and Significance Levels of Academic Performance by Students in Vocational Programs

Category of Assessment	Level of Significance
Effort	.01
Attitude	.01
Getting along	n.s.
Taking directions/supervision	.01
Behavior	n.s.
Attention span	.01
Accept boredom	.01
Attendance	.01
Work quality	.01
Overall performance	.01
Grade average	.05

Grosser, Schmitt, and Scott (1993) conducted a follow-up of all students evaluated during the 1989–1990 school year at the PACES Vocational Evaluation Center, in Newport News, Virginia. Evaluations for disadvantaged students lasted approximately two days, while evaluations for special education students lasted four days. A short-term follow-up was conducted using grades obtained in courses and training programs while still enrolled. Long-term follow-up was also conducted to determine what had happened to those students who had exited the school system. Short-term follow-up revealed that in cases where students were placed in recommended areas, 83% were receiving grades ranging from A to C. Further, it was found that for the students *not* placed in recommended programs, only 39% received grades from A to C. Long-term follow-up indicated that in the 33% of the students who could be reached by phone, 86% “were either working in the field in which they were trained or they were receiving further training in the same area that was recommended. Of the students placed in programs that were not recommended only 13% were employed in the field for which they were trained” (Grosser et al., 1993, p. 313).

Welfare and Employment Programs. Spitznagel (1993) analyzed the job placement success of 158 AFDC (Aid to Families with Dependent Children) recipients in two cities in Florida, who received an assessment. The assessment process included interest and achievement testing, and, in one of the two cities, a work sample evaluation. Initial results of the study “indicate that persons who have been tested have obtained more positive outcomes than those previously untested. Results also tentatively indicate that the more depth the testing program has (the use of S.A.G.E. work samples), the better the training opportunities as well as better paying jobs result” (statement in parenthesis added) (Spitznagel, 1993, p. 205). In the last quarter of 1992, placements out of the office using work samples doubled over previous placements made without the benefit of a vocational evaluation (341 compared to approximately 150).

Meade and Hoine (1995) conducted a study of the evolution of the Goodwill Assessment Unit in San Antonio, Texas, in serving participants from the CETA (Comprehensive Employment Training Act) to the JTPA (Job Training Partnership Act) programs. In 1979, the unit created a team-based assessment process of three to five days, to evaluate participants referred by the local CETA program. Prior to that time, CETA was experiencing a disappointing

34% successful completion rate in its training programs. The city commissioned an outside study to follow-up Assessment Unit participants who had been out of the CETA system for one year or longer. The independent study found that “85% of the clients for whom the recommendations of the assessment unit were followed, were employed one year later and were making at least \$1.00 above minimum wage at the time of the study. The results indicated that the assessment model was successful and had increased the SDA’s outcome by 51%” (Meade & Hoine, 1995, p. 29).

With the reduction in resources, changes in JTPA regulations, and an emphasis on rapid assessments lasting one-day or less, the Goodwill Assessment Unit reduced the length of its evaluation process to one-to-two days. The evaluation was now designed to predict success in employment after completion of on-the-job training. A follow-up study revealed that “Measuring job retention six months to one year later, predictive accuracy was typically in the 90% to 97% range” (Meade & Hoine, 1995, p. 30). The report noted three lessons learned from this successful long-term evolution of their assessment service: (a) invest in competent, professional staff; (b) maintain awareness of the changing characteristics and needs of the population being served; and, (c) use a process model rather than a content model to focus on *how* an individual functions rather than on *what* an individual does.

Impact of Education and Certification on the Quality of Services

In 1966, Stout State University (now the University of Wisconsin–Stout) established the first graduate degree program in vocational evaluation in the United States (Pruitt, 1986). For many years, Auburn University, the University of Arizona, and the University of Wisconsin–Stout were the only three graduate programs in vocational evaluation. With the increased availability of grant funds from the Rehabilitation Services Administration in Washington, D.C., additional universities started new programs. Currently, there are 11 universities that offer graduate programs in vocational evaluation: Auburn University, Boston University, East Carolina University, The George Washington University, Illinois Institute of Technology, Southern Illinois University, Southern University, Springfield College, University of Northern Colorado, University of Wisconsin–Stout, and West Virginia University. VEWA maintains names, addresses and telephone numbers of the university programs in vocational evaluation. Many universities with departments or programs in rehabilitation and rehabilitation counseling, transition and special education, vocational and career education, and occupational therapy, devote several courses, one course, or sections of a course to vocational evaluation and assessment. Short-term training programs and workshops in vocational evaluation and assessment are offered throughout the country and information on availability can be obtained from VEWA.

Over the past 10 years, Ann Puryear, a Regional Evaluation Specialist with the North Carolina Division of Vocational Rehabilitation Services (NCDVRS) compared the services provided by vocational evaluators *with* formal training and *without* formal training in the field. In her role as a supervisor with NCDVRS, she monitors the delivery of vocational evaluation services throughout one-fourth of North Carolina. In this capacity she has supervised the work of vocational evaluators who received master’s degrees in vocational evaluation from Auburn University, East Carolina University, and the University of Tennessee, and from evaluators who entered the job with no training in the field. Results of this ten-year study revealed that

vocational evaluators who were hired with master's degrees in the field "became fully productive and able to work independently of supervision in two-to-three weeks. Individuals hired without a graduate degree in vocational evaluation took two-to-three years to achieve the same level of productivity and independence" (A. Puryear, personal communication, April, 1996).

Another interesting finding of the study was that employees who were graduates of vocational evaluation degree programs had the base of knowledge needed to adapt to new situations (e.g., working with new disability groups, using new instruments and techniques) not possessed by evaluators without the degree. Additionally, it was found that "due to their gaps in learning" (A. Puryear, personal communication, April, 1996) some evaluators without graduate training never learned to fully adapt. Untrained evaluators also tended to leave their jobs more frequently than did masters level evaluators This supports the premise that, as a result of their extensive preparation, masters trained evaluators have a better understanding of and, therefore, a stronger commitment to the field (i.e., they know what is expected; A. Puryear, personal communication, April, 1996).

Although there are no definitive studies supporting the effectiveness of evaluators who were certified in Vocational Evaluation (CVE) over those who were not, the national certification standards are closely related to the curriculum content provided by graduate programs in vocational evaluation.

CCWAVES' 14 Knowledge and Performance Areas (discussed in the Standards chapter in this book) are based on role and function studies of evaluators nationwide, as well as on consultation with university faculty in the field. These areas are routinely included in the curriculums of vocational evaluation graduate programs, as is the CCWAVES Code of Ethics. The assumption is that if *qualified* (appropriately trained and certified) vocational evaluators are given the opportunity to provide well-planned and comprehensive services to consumers, then meaningful, accurate, and highly useful information will result.

Whereas vocational evaluation and assessment can be validated statistically, as demonstrated above, it can also be supported forensically. Vocational evaluators, rehabilitation counselors, and other vocational experts routinely and successfully use vocational evaluation and assessment results in various legal proceedings (e.g., depositions, hearings, trials). The value and acceptance of evaluation results depends, in part, on two things: (a) the skill and experience of the professional in providing a well-planned, thorough, and indisputable evaluation; and, (b) the professional qualifications and certification of the vocational evaluator. Master's-level vocational evaluators who possess a CVE will have little difficulty being qualified as vocational experts, and authoritatively offering testimony regarding their findings and conclusions (Choppa & Shafer, 1992).

Quite often, criticisms concerning poor evaluation service delivery are the result of inadequately prepared or trained personnel. For example, when administering instruments and writing recommendations, an evaluator who has not been trained to consider the most appropriate learning style of a person with a specific learning disability will more than likely underestimate the individual's vocational potential. The same result may occur when untrained evaluators fail to modify their service to compensate for various problems related to timed

testing, poor academics, and possible accommodation needs. Lack of essential knowledge will result in assessments that screen people out of rather than in to appropriate services, education/training, and career opportunities. A vocational evaluation can only be as good as the individual delivering the service.

A two-year study entitled *Evaluation of Vocational Assessment Procedures and the IWRP Process Used by State VR Agencies*, funded by the Rehabilitation Services Administration, responded to the importance of training professionals in vocational evaluation (Hayward, Wine, Thorne, Stoddard, & Wilhite, 1992). A key objective of the study was to identify effective policies and practices of vocational evaluation as applied to IWRP (Individualized Written Rehabilitation Program) development and successful outcome. In general, the results support the importance of vocational evaluation to the vocational rehabilitation planning and placement process. The report of the study recommends training counselors in the use of evaluation, and training of evaluators in improved service delivery methods. Study recommendations conclude that Vocational Rehabilitation “counselors should work more closely with clients in matching job placements to the vocational goal, using vocational evaluation findings as a source of information for planning” (Hayward et al., 1992).

Conclusion

Vocational evaluation has proven to be a useful tool in accurately guiding planning and placement activities. Research suggests that the more evaluation recommendations are used in planning, the greater the chances of success in training and job placement. The effectiveness of evaluation services cannot be fully determined by simply examining the validity of the instruments and techniques used in vocational evaluation. Conducting well-designed follow-up studies to determine what happened to the consumer will provide more factual information on the value of vocational evaluation and what the unit must do to improve services in the future. Certain conditions need to be met in conducting a valid follow-up study, and more rigorous statistical procedures must be implemented in collecting and analyzing data (Kosciulek, 1993). In cases where grants are being written to develop or expand a vocational evaluation service, it is recommended that funds be included to hire an experienced program evaluator who can competently collect and thoroughly analyze the outcome data. Ensuring that vocational evaluators are properly trained and certified will also increase opportunities for improved service delivery.

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CHAPTER FIVE

Initial Considerations for Practice

Introduction

Specific guidelines for the practice of vocational evaluation need to be in place before a service is offered. In particular, issues such as: the populations served; the setting of the evaluation (location); space needs; evaluation goals in relation to length and time of provision; service ratio and caseload; scheduling procedure; and, funding methods should be well established and shared with referral sources and participants through marketing and orientation. These “housekeeping” issues not only affect marketing strategies and pricing of evaluation, but provide focus to staff on why and how the service will be delivered.

Populations and Settings

A recent national study revealed that the most common disability types referred by vocational rehabilitation agency counselors for vocational evaluation are presented in Table 1 (Hayward & Thomas, 1993, p. 336; Hayward, Wine, Thorne, Stoddard, & Wilhite, 1992)

Table 1

Most Common Disability Types Referred by Vocational Rehabilitation Agency Counselors for Vocational Evaluation

Disability Type	Percent of Success
Orthopedic impairments	27.0
Mental illness	19.0
Other	16.0
Mental retardation	15.0
Substance abuse	14.0
Hearing impairment	10.0
Vision impairment	8.0

The percentages are only approximations and may vary by setting, region, and demand. The third highest area, “Other,” represents the broad range of different disabilities served that were too small to list separately. Additionally, the study did not indicate the number of individuals with multiple disabilities and dual diagnosis (e.g., mental illness and substance abuse) that are routinely served by vocational evaluators. In past years, vocational evaluators traditionally served individuals who were developmentally and physically disabled, however, increasing numbers of individuals with substance abuse, mental illness, and head injuries are finding their way into the vocational evaluation process.

Populations served in vocational evaluation vary significantly by setting. Vocational assessment and evaluation programs in secondary public schools typically serve special needs students. This includes physically and mentally disabled students (including developmental

disabilities), students earning low grades, potential dropouts, and students experiencing socioeconomic hardship. Community colleges provide assessments to the same populations as secondary schools. In addition, they evaluate individuals who have had a history of unemployment or underemployment, and who are clients of social service agencies (e.g., welfare-to-work) or publically funded employment training programs such as the Job Training Partnership Act (JTPA). Community agencies, colleges, and schools that are unable to provide their own in-house assessments will refer their students/clients to other settings (e.g., vocational rehabilitation, community rehabilitation programs) that offer vocational evaluations.

Vocational rehabilitation state agencies and community rehabilitation programs (formerly known as rehabilitation facilities or sheltered workshops) often hire personnel to provide vocational evaluations. By law, state vocational rehabilitation agencies can only serve individuals with physical and mental disabilities, but this is not the case with community rehabilitation programs. Although facility-based rehabilitation programs have traditionally received evaluation referrals from vocational rehabilitation agencies, they have successfully marketed to public schools, JTPA, social service agencies, corrections, and Workers' Compensation providers (e.g., insurance companies, attorneys, private rehabilitation companies). Many specialized institutions (e.g., correctional facilities, institutions for the mentally retarded or mentally ill) employ vocational evaluators as well, or contract with community rehabilitation programs for the service when not available in-house.

It has become more common for evaluators to serve individuals with disabilities who also have a variety of other barriers to employment. Some of these barriers, and stigmas, include, age, poverty, limited or no formal education (i.e., academic deficits), minority status, cultural difference, criminal record, past history of substance abuse, lack of marketable skills, chronic unemployment or underemployment, lack of motivation or incentive to work, and limited or no English speaking skills. In fact, state and federal vocational rehabilitation agencies and secondary school systems, to name a few, stress the need to serve more severely disabled individuals who often have a multitude of barriers to employment.

Vocational evaluation has long been a part of the medical model. Rehabilitation units in hospitals frequently hire evaluators to work with in- and out-patient referrals made by physicians and other allied health providers, as part of the comprehensive service delivery process. Work hardening centers employ vocational specialists who provide a variety of return-to-work services to industrially injured workers, including vocational assessment and on-the-job evaluation, career exploration and counseling, and job analysis and job accommodation.

Increasingly, vocational evaluators can be found in private practice. Evaluators may set up individual or group practices dedicated solely to marketing vocational evaluation and assessment services to agencies, institutions, and individuals throughout their community and surrounding areas. They may also be part of a private medical practice (e.g., neurologists, orthopedists, psychiatrists), a psychologist's office, or a private rehabilitation company serving industrial injury referrals from self-insured businesses, insurance companies, and attorneys. A growing number of private practice evaluators are serving high school students trying to decide on a college and major, midlife career changers, displaced workers (through outplacement services), and displaced homemakers (e.g., divorcees and widows exploring training and career

options). Some evaluators are assisting companies with screening job applicants and candidates for promotion or transfer, offering ADA consultations, and conducting job analysis.

Evaluators have the ability to control the types of referrals they receive through targeted marketing. For example, if an assessment unit wants to increase referrals of individuals with mental illness, it can direct marketing to rehabilitation counselors with specialized mental illness caseloads and to public and private mental health centers. Likewise, if it wants to de-emphasize referrals of a particular disability, it can eliminate marketing to professionals and agencies that serve that population. As future legislation appropriates financial resources for assessment of previously unserved groups, evaluators can adapt and refine their services and target their marketing to this new population.

Special Needs

There are a number of factors that influence space requirements. The length of the evaluation is one. Short-term assessments lasting a day or less that require very little equipment will need minimal space. On the other hand, long-term evaluations of one or more weeks that rely on the use of work samples and evaluation systems will need more space to house the necessary equipment.

Evaluations that are offered to one or two persons at a time will require less space than those serving four or more persons. However, in situations where a large number of individuals are taking pencil-and-paper tests, the space required *per person* is less (i.e., classroom style seating) than would be required by one individual in an electric wheel chair who would need more room to maneuver and to use assistive devices. The primary issue is how much space is available per person, including the evaluator and equipment, to provide the necessary assessments. Larger, open spaces appear to be better managed, offer fewer distractions, and maximize opportunities for optimum performance. The number of people that can be adequately served and the amount of equipment that is needed is directly related to space requirements. Available square footage will determine the potential for unit growth and expansion in the future.

Several recommendations for the size of a unit have been reported in the literature. Redkey and White (1956) suggest that a minimum of 1,000 square feet of evaluation floor space be made available for every 12 persons, including personnel and equipment. Hiten (1970, in Pruitt, 1986) recommends 300 square feet per evaluatee for simulated work stations (e.g., work samples, situational assessments). Pruitt (1986) suggested that units should provide between 100 to 125 square feet per person, excluding floor space for storage of materials, supplies, and instruments not in use. This does not include office spaces, break areas, or conference rooms. If future expansion is projected, it should be taken into consideration when evaluation space is first being acquired.

One important consideration regarding vocational evaluation space is aesthetics. Pruitt (1986, p. 287) states that:

The vocational evaluation unit should look like a work environment and not like a schoolroom or laboratory. Work samples that belong to the same occupational area or are

technologically related should be placed in close proximity. Even if it does not resemble a work environment, the unit should provide a relaxed, non-threatening, supportive atmosphere that encourages the best possible performance. This is also an important concern for evaluators who will be spending the majority of their working hours in this same setting.

The issue of space can also be applied to fixed and mobile units. Vocational evaluation is most commonly performed in a fixed unit such as permanent office or building space. In this situation, participants come to the unit for the evaluation, except in on-the-job evaluations (community-based assessments) where actual work sites are being used. Furniture, evaluation equipment, and staff offices are geared to the specific type of service being rendered.

Mobile units, on the other hand, take vocational evaluation and assessment services to consumers, thus minimizing their transportation needs. Mobile units are particularly useful in rural areas where services and transportation are limited. They are also a more cost-effective way of delivering services over a broad but sparsely populated geographic area. For example, small school systems that cannot afford to develop and staff assessment units may initiate cooperative agreements to jointly fund a mobile unit that can serve all schools in the participating districts.

The earliest known mobile units were developed in the late 60s and 70s, primarily for use with high school special education students. Marchman (1968) proposed the use of a modified mobile home that could be pulled by a truck throughout the northwestern parts of rural Georgia. The “mobile Work Laboratory” would house standardized tests and work samples and be moved from place to place every seven weeks to evaluate “mentally retarded teen-aged students” who were served by the Division of Vocational Rehabilitation.

In 1970, the Board of Education of Baltimore County (1973) created a mobile vocational evaluation unit 12 feet wide by 48 feet long, to serve “intellectually limited students” within the 10th grade. Along with standardized tests, the TOWER System (a commercial work sample battery) was used as the focal point of this five-day group evaluation. In cooperation with rehabilitation facilities and Vocational Rehabilitation agencies, school systems in other parts of the country, such as Corpus Christi, Texas, also established mobile vocational evaluation units.

There have been, and continue to be, other creative forms of mobile evaluation services, including the use of travel trailers and school buses. A more recent and durable version is the wide-body ground transport, the type used by car rental agencies to ferry customers to and from the airport. Operated in Florida by community rehabilitation programs, these units are designed to be free-standing settings where participants enter through steps or a lift mounted to the emergency exit in the back. There is enough room for an evaluator and two participants. The evaluator uses a cell phone to communicate with the home office and a portable computer to write reports. With today’s digital technology, evaluators can now use their cell phone to e-mail or FAX reports completed on a portable computer to the home office or directly to the referral source.

Self-contained mobile units require the evaluator to commute longer distances from work to home, and may necessitate overnight stays in areas too far away for daily commuting. To

minimize evaluator turnover, many fixed units rotate their evaluators into the mobile unit so that no one is permanently assigned to providing mobile evaluations.

Increasingly, trucks, vans, and automobiles are used to transport the evaluator and equipment to sites where the evaluation can be offered in a fixed facility such as a home, satellite office, or available room in a school. Evaluation materials and instruments are transferred from the vehicle using briefcases or a cart and set up in a suitable location. This approach is popular with evaluators who work in fixed units but who must occasionally conduct evaluations out of the office.

Length of Evaluation Services

Although the length of a vocational evaluation service refers to how long a participant is actually in evaluation, it should also include the time needed for conducting file reviews and scheduling, staffing, report writing, and follow-up of each individual. This additional time is often overlooked when evaluation quotas are being considered. However, this section will deal specifically with how long the individual is in the evaluation process. The length of evaluation is quite varied and is referred to in durations of hours, days, or weeks. Short assessments (or screenings) are often described using hours, especially if they last only a half-day or several half days. Longer evaluations may be referred to in days or weeks, especially community-based or community rehabilitation program (facility-based) evaluations. Mason (1984, p. 266) recommended a hierarchical model of vocational evaluation to meet the varied needs of different referral sources. This flexible approach contains the following five models that are based on time, individual needs, and the application of certain tools and techniques.

Specialized Assessment. This lasts from a few hours to two days, and thoroughly evaluates a skill area (excluding behavior). Instruments and techniques used depend on the skill to be assessed. This is reserved for situations where a specific referral question regarding a particular skill is made.

Transferable Skills Assessment. This takes from one to six hours and is used to determine similar job alternatives based on previous work history. It relies on file review, interviewing, and thorough analysis of work history. The technique is used with individuals who have a significant work history and where a formal evaluation is not needed.

One-Day Vocational Assessment. This four-to-seven hour assessment is used to develop a worker profile to search for comparable job alternatives. It may rely on interviewing, standardized tests, some work samples, and limited behavioral observation. It is used with individuals whose reading level is 6th grade or higher, and where behavior and physical functioning is known or is not a significant issue.

Short-Term Vocational Evaluation. This two-to-five day evaluation explores skills and behaviors related to an occupation, or assesses specific behaviors and work tolerances. It uses interviewing, testing, work samples, situational assessment, and/or on-the-job-evaluation (OJE). This is used with individuals who have minimal or no academic skills, and little is known about work interest or potential.

Long-Term Vocational Evaluation. Two to six weeks are needed to determine educational, occupational, and rehabilitation potential with emphasis on behaviors, habits, and work tolerances. It relies heavily on work samples, situational assessment, and OJE to evaluate severely disabled individuals whose learning and behavioral issues require the application of special techniques.

On average, Thomas (1986) found that evaluations across the country lasted approximately 45.3 hours with a standard deviation of 97.5 hours. Given an approximate 6 hours a day in evaluation with one day a week off to write reports, the average evaluation would take nearly two weeks to complete. Rehabilitation settings averaged the longest at 58.4 hours, the private-for-profit sector averaged 38 hours, and the secondary school systems were the shortest at 24.5 hours.

Hayward et al. (1992) conducted a national study of vocational evaluation services provided to vocational rehabilitation clientele who were successfully rehabilitated (i.e., closed in status 26). The following evaluation lengths were reported:

Table 2

Length of Evaluations and their Percentages of Successfully Rehabilitated Clients

Length of Evaluation	Percentage
No model or package administered	41.9
Less than one day of evaluation	11.3
One day of evaluation	13.3
Two to three days of evaluation	7.1
Four to five days of evaluation	3.3
More than five days, up to ten days	3.8
More than ten days, up to one month	10.8
More than one month	6.7
Other	1.7

It is interesting to note that the largest number of evaluations (41%) had no specified time length and was based on the needs of the participant and the referring rehabilitation counselor. The remaining distribution is somewhat bimodal and represents an emphasis on shorter evaluations of three days or less (31.7%; Hayward & Thomas, 1993, p. 334).

Brown, McDaniel, and King (1995) surveyed 34 evaluators working in 22 public and 11 private non-profit rehabilitation settings who conducted evaluations for the Georgia Division of Rehabilitation Services. A total of 587 evaluations completed in 1992 were analyzed. Results indicated that “interviewing, testing, and work sample evaluation” took an average of 6.56 hours ($SD = 4.26$) in the public sector, and 5.16 hours ($SD = 4.07$) in the private sector. These same services took an average of 7.65 hours for individuals with traumatic brain injury (TBI) and even longer for participants with sensory impairments (10.1 hours). The number of days to conduct “workshop/situational assessment” was 7.08 days in the public sector, and 8.23 days in the

private sector. For consumers who were sensory impaired, these same services required an average of five days, and an average of 13.33 days for participants with TBI.

Brown et al. (1995) also reported that the process of “scoring/interpreting tests, analyzing data, and conducting computer job searches” took an average of 2.67 hours for public sector evaluators and 2.16 hours for private sector evaluators. Report writing required an average of 1.68 hours for public and 2.57 hours for private sector evaluations. For over 95% of the sample, the overall process of evaluation (including situational assessment), scoring, interpreting, and report writing was less than two weeks. Combined with the “10 days to provide the referral source with a completed report the *entire process* takes less than one month” (p. 95). If TBI and sensory impaired populations were removed from the sample, the *entire process* would only take two to three weeks.

There are number of factors that influence evaluation length. One such factor is the severity of disability. The more severely disabled a participant, the more time will be needed to evaluate behavior, improvement over time, and appropriate accommodations. Referral questions that ask for information on work-related behavior, stamina and endurance, appropriate accommodations, and extensive career exploration will take longer to answer than a simple need for achievement, interest, and aptitude test scores. The use of work samples, situational assessments, and on-the-job evaluations will take considerably more time than file review, interviewing, and standardized testing. Other factors that can influence evaluation length include client-to-evaluator ratios, evaluation quotas, and the cost of evaluation services. The Commission on Accreditation of Rehabilitation Facilities (CARF) has stressed that vocational evaluation should take as long as necessary to accomplish the goals of that evaluation (i.e., answer the specific referral questions); however, economic realities often force a compromise between the real and the ideal.

Ratios and Caseloads

Many vocational evaluators deal with both ratios and caseloads in service delivery. Ratio refers to how many participants an evaluator is directly working with at one time, traditionally referred to as the client-to-evaluator ratio. If the ratio is 4:1, it means that there are four consumers in the unit with the evaluator. Caseload refers to the number cases the evaluator has active at any one time but not necessarily in the unit at one time. An evaluator in a school system may work with two students each class period (2:1 ratio) over five periods for a total caseload of 10 students. An evaluator in a community rehabilitation program may have a 4:1 ratio and a caseload of 15. The remaining 11 individuals on the caseload could be involved in situational assessments with work supervisors throughout the facility and community. An evaluator in private practice who offers 12 hours of evaluation per person may see two injured workers at a time (2:1), three hours a week on an appointment basis, allowing for the evaluation of all 10 individuals on the caseload over a four-week period.

In units where the evaluator works continuously with everyone who enters, there is a ratio but no caseload. Ratio tends to be more important than caseload. It dictates how large a unit needs to be and how much evaluation equipment is required. It is also a contributing factor to

evaluator burnout, especially if there are more consumers in a unit than an evaluator can effectively serve at one time.

Low ratios (2:1 or less) provide more opportunities for individual attention, and require less space and equipment than do high ratios (3:1 or larger). On the other hand, evaluators with high ratios can observe how participants work around or with other individuals, an important consideration in today's work place that cannot be easily assessed through low ratios. High ratios require better time management and planning skills in order to successfully balance the workload. At the same time, high ratios can provide more variety to the evaluator's job.

The type of instruments used are also a function of ratio. Some tests and evaluation systems require the evaluator to be present throughout the entire administration, limiting their use to settings with low ratios. Some standardized tests and work samples are designed to be administered on a group basis, lending themselves to use with high ratios and even in classes. A variety of instruments is also available that permit the evaluator to leave the participant alone for a period of time, after the directions are given, in order to complete the activity. This gives the evaluator with a high ratio an opportunity to work with other individuals, requiring only periodic observation of each evaluatee.

Thomas (1986, p. 150) found that an average of 4.3 clients were vocationally evaluated at one time, with a standard deviation of 3.2. Private-for-profit evaluation had the highest average of 6.3 clients ($SD = 4.3$) vocationally evaluated at one time, schools with 4.6 clients ($SD = 2.2$), and rehabilitation agencies and facilities with 3.9 clients ($SD = 3.1$). The average is often influenced by factors such as the length of vocational evaluation (e.g., the longer the evaluation, the higher the ratio), the cost of evaluation, and the severity of disability (e.g., lower averages for more severe disabilities; p. 150).¹

Evaluation Quotas

Like most all other human services, vocational evaluation units need to be able to support themselves, or at least demonstrate their value. Therefore, a program evaluation system must be created that sets a goal, or quota, for the number of persons to be served and monitors this progress. Some program evaluation systems target and track the number of individuals evaluated each week or month, while others determine if the daily evaluation ratio is being met. In the latter process, the idea is to fill all available evaluation slots, or openings (e.g., four per day), regardless of how long each evaluation lasts.

Using a creative and flexible combination of length, time, and ratio, evaluators can achieve the same monthly quotas with entirely different processes. As always, the process chosen is dependent, in part, on the severity of the disabilities served, size of the unit, instrumentation, needs of the consumer and referral source, and cost. For example, there are several ways to meet a quota of four evaluations per week. In the first approach, one individual

¹ This paragraph is a re-write of the original text to enhance clarity.

would be evaluated each day (Monday through Thursday), leaving Friday open for staffing and report writing (1:1 ratio). In the second approach, two individuals could be evaluated together for two days (two on Monday and Tuesday, another two on Wednesday and Thursday), again leaving Friday open (2:1 ratio). A third approach would employ a four-day evaluation with a 4:1 ratio, with Fridays dedicated to paperwork. The longer evaluations would permit the use of a wider range of instruments and techniques that would provide greater opportunities for behavioral observation, assessment of stamina, and career exploration. However, higher ratios will require more space and equipment.

Scheduling Methods

There are three methods that can be used, individually or in combination, to schedule consumers into the evaluation process. They include fixed, interval, and appointment scheduling.

Fixed scheduling is the process where a specified number of participants is brought in at one time, evaluated as a group, and exited at the same time. Quite often, referrals that are transported from the same place (e.g., school, correctional facility, institution) are evaluated on a fixed schedule. Some evaluators prefer homogeneity within each group to ensure that no one feels isolated or inferior due to significant differences in performance from the rest of the group. With homogeneous groups, evaluatees can be given many of the same things at the same time in a “group evaluation.” Heterogeneous populations can be served on a fixed schedule as long as there is a suitable variety of evaluation experiences, and individualized attention is sufficient to address personal concerns about differences in performance.

This is the easiest method of scheduling in that each evaluation period, and the number of available slots, is fixed (e.g., four participants in each one-week evaluation). Once all four slots in a week are filled, then slots in the following week will be scheduled next. Although participants may exit the group evaluation early, no one is placed in the vacated slot until the next rotation.

Interval scheduling is the process where slot vacancies are filled as participants exit. Individuals are not brought in as a group as done in fixed scheduling, but individually, and a constant ratio is maintained. For example, an evaluator may have four slots available at any one time, but evaluatees enter and exit slots at different times depending on their individual needs. One person may enter on a Monday and exit on Wednesday, in which case, the vacant slot is filled as soon as possible (Thursday or Friday). Homogeneity of referrals is not as important here since “group evaluation” is not used as frequently as in fixed scheduling. Although the interval method may be more convenient and flexible for the referral source than fixed, the process of scheduling is more complex. In this scenario, evaluators will need to determine the exit date of a consumer early enough to schedule another referral in a timely manner.

Appointment scheduling in vocational evaluation is performed very much like it is in a physician’s or dentist’s office. Appointments for consumers are made in blocks of time (one or several hours each), and more than one individual can be booked over the same time slot. Appointment scheduling is particularly useful in personal or industrial injury evaluations where

staff will also need to schedule time for job analysis, vocational expert testimony, and visits with attorneys and employers.

Evaluation can be scheduled around other fee-based services. Evaluators in rehabilitation hospitals may need to schedule appointments for clients between other services such as physical therapy, occupational therapy, recreation therapy, and during times when the individual is not fatigued from a strenuous rehabilitation activity. Evaluators in schools may need to schedule student appointments during times that do not conflict with important classes.

Appointments can be scheduled for a single visit to conduct a brief assessment lasting from several hours to a full day, or for a number of different visits over one or more weeks. For example, an evaluator may schedule a participant for five different three-hour visits. In some cases, for ease of scheduling, all of these visits may occur at the same time of day and on the same day of the week. However, individuals can also be scheduled at different times of the day and on different days of the week to sample behavior and functioning over a more diverse time frame.

Combinations of scheduling methods can be used in larger units. One five-evaluator program used fixed scheduling with two evaluators. One evaluator served a group of youthful offenders in the morning, and another evaluator served a group of special needs students in the afternoon. Two other evaluators served referrals from the Division of Vocational Rehabilitation on an interval scheduling basis. The fifth evaluator used appointment scheduling to work with referrals from attorneys, insurance companies, and private rehabilitation companies. Over time, evaluators may wish to try a variety of different scheduling techniques to see which one works best, or to simply vary their routine.

One final issue related to scheduling is the problem of “no-shows.” When evaluation quotas and ratios are tied to unit costs, and a consumer fails to show, the loss must be made up by increasing the ratio in the next round. This means that if a one-week evaluation ratio of 4:1 is not met due to a no-show, then the ratio falls to 3:1 for that week. The evaluator will have to serve a 5:1 ratio the following week. Some units around the country have reported to this author that their no-show rate averages around 12%. No-shows can be minimized several different ways:

- Charge a non-refundable processing fee for applications. This technique will encourage follow-up by referral sources to ensure that evaluatees show up when scheduled. However, this approach may discourage referrals unless all other evaluation units in the area also charge a processing fee.
- Charge for the first day an evaluatee is not there. This approach has the same advantages and disadvantages as the previous bullet point.
- Appoint a staff member (e.g., secretary) to contact participants and/or their referral sources one or two days prior to the scheduled date to make sure they are coming. If not, the next individual on the list can be contacted and scheduled in their place.
- Determine when referrals are low and no-shows are high (e.g., holidays) and strategically plan increased marketing and communication prior to these down times. Consider establishing unit holidays over these down times if marketing efforts fail.

- Project fewer evaluations than would be needed to meet the budget, so that a few no-shows do not need to be made up by the evaluators. If allowed to persist, large and routine no-show rates can create job stress and burnout in staff.

Waiting periods (also known as waiting lists) for evaluation services are the rule and may run from one to two weeks in length. Although waiting lists provide a pool of evaluatees to draw from when no-shows occur, waiting periods of more than two weeks may discourage referrals or cause dropouts from the list prior to entry into evaluation. If excessive waiting periods persist, the unit may wish to hire another evaluator.

Funding Methods

There are a number of vocational evaluation and assessment units operated as part of federal or state agencies (e.g., vocational rehabilitation, public schools, institutions) and are, therefore, listed as a “line item” in their budget. As long as evaluation can show reasonable utilization figures, and a change in legislation does not eliminate the service, it will continue to be funded in the budget. However, there are those profit and non-profit evaluation programs, either free-standing or affiliated with a larger organization, that derive income from grants, contracts, and walk-ins. Innovation, expansion, establishment, and service grants are available, usually on a one-year basis, from state and federal rehabilitation, education, social service, and employment agencies to serve specific populations. Although grants are available on a limited basis, they are not always a reliable source of long-term income. The more steady funding opportunities include block funded contracts, fee-for-service or negotiated fee contracts, and walk-ins. The terms used to describe these funding methods may vary from state to state, but the concepts remain the same.

Block-funded contracts are the most desirable funding method since they guarantee referrals and income. In this procedure, an evaluation unit determines how many evaluations it can offer in a year and attempts to “sell” all of the available slots to referral agencies in the community. If a unit needed to provide 200 evaluations in the coming fiscal year to meet expenses, then it will attempt to sell all of these slots before the year begins. It may negotiate the sale of slots to the local vocational rehabilitation office, the local school system, social service agencies, and/or employment services such as Job Training Partnership Act (JTPA). The unit can guarantee that a specified number of slots will be available every month at a fixed price per person to the contracting agency. This price may be slightly lower than a walk-in fee due to the large number of slots being purchased. A price per evaluation is negotiated, along with other conditions of the contract such as report content and turnaround time, number of available slots per month, and length and type of evaluation.

Once all slots have been sold, the need for further marketing can be minimized and more time devoted to quality service delivery. Referring agencies that engage in block funding prefer this method since fees are paid up front in a lump sum and are not taken out of a referral source’s service budget throughout the year. On occasion, agencies run out of money before the fiscal year ends, thus restricting what services can be provided. If block funding was used, agencies can still make referrals since the evaluations were pre-paid.

Fee-for-service or negotiated fee contracts comprise the second funding method. The evaluation unit annually negotiates an acceptable fee for a specified service, and the unit is paid that rate every time the service is rendered to a referral from the contracting agency. No slots are sold, as in block funding, and no guarantees of referrals are made; evaluations are provided on an “as needed” basis. Evaluation units will attempt to have fee-for-service contracts with as many referral sources as possible in order to increase their referral base. In some states, evaluation units apply to become a “vendor.” Their services and fee structures are placed on an approved vendor list so that any state agency, or other entity, can purchase services at the established rate.

Walk-ins are individuals who are self-referred or sent by an agency that does not have a negotiated fee contract with the unit. Although there may be set fees, they can also be based on what the individual or agency specifically wants. In most cases, evaluators do not have contracts to serve referrals from personal and industrial injury attorneys or private rehabilitation, but will have a fixed hourly or daily rate. When a referral is made, the needs of the attorney or rehabilitation specialist and client are discussed and a fee is set. Walk-ins often comprise the smallest number of referrals for most evaluators unless they are in the business of primarily serving personal and industrial injury cases, or the fee-paying general public.

The expression “don't put all of your eggs in one basket” provides the guiding principle for evaluation funding. Many evaluation units will use a variety of funding methods. They will sell as many block funded slots as possible first, and cover the rest through negotiated fees, vendor agreements, and walk- ins. Grants will be used, when available, to purchase new equipment and hire additional staff for the development of new evaluation services or the expansion and upgrading of existing ones. If innovation grants are available to serve a newly targeted population, an evaluation unit may apply for the grant to develop a process of evaluation to meet that need. Once this grant has expired, the service can then be marketed through block funded and negotiated fee contract arrangements.

Funding and marketing are closely tied. For example, a new agency in town may decide to try out your service to see if it can meet their information needs. A walk-in referral is made and the value of the service and report are determined. If the agency is satisfied, then a negotiated fee can be arranged, with the eventual hope that a block-funded contract can be negotiated. If this marketing approach is used, it would be best to request the referral of a dozen or so individuals, before a final assessment of the services' value is made. When only one consumer is referred, the agency may send one of its most difficult cases, which would not be representative of the type of individual it typically serves. A number of evaluations will ensure better coverage of the representative population. As each evaluation is offered, the unit can staff the case and tentative report with the agency to determine if that is what was wanted. If necessary, refinements in the process can be made before the next evaluation. The revised services offered to the last group of referrals will give the agency a truer picture of what the unit can do, and allow the unit to tailor the evaluation service to the agency's specific needs.

Costs of Evaluation

Fees are most often based on hourly or daily rates depending on the length of the service. Evaluation package prices are also used and are based on complexity and length (e.g., a half-day

vocational screening, a three-day work sample assessment). Although there are instances where some evaluators have charged by the instrument (e.g., interest tests, aptitude tests, evaluation systems), this has not been as common a practice as it is with psychologists.

Thomas (1986, p. 150) found that the average **hourly** rate for evaluations at the time ran \$35 an hour ($SD = 19$). The private sector was the highest at \$50 an hour ($SD = 10$), and rehabilitation agencies and facilities at \$35 an hour ($SD = 17$); school systems did not report an hourly rate. **Daily** evaluation fees averaged \$62 ($SD = 66$) with the following distribution: schools: \$161; private: \$88; and rehabilitation: \$47. The overall average fee per case was \$462 with the following distribution: private: \$1,340; schools: \$681; and rehabilitation: \$418.

Hayward and Thomas (1993, p. 334) found that state vocational rehabilitation agencies paid \$335 on the average per evaluation for successfully closed cases (status 26) and \$260 per evaluation on unsuccessful cases (closed status 28). It was reported that over half of the evaluations purchased cost under \$200. Overall, vocational evaluation accounted for less than 10% of all vocational rehabilitation case expenditures. In a study of 16,005 clients with the Florida Division of Vocational Rehabilitation who received vocational evaluation during the 1991–92 fiscal year, Spitznagel and Saxon (1995) found that the average cost per evaluation was \$388.00.

Today, it is not uncommon to find private evaluation units charging \$100.00 or more an hour for personal and industrial injury evaluations. To limit costs, some vocational rehabilitation agencies, Workers' Compensation commissions, and private insurance companies now place a cap on fees they will pay for evaluation services. When costs are severely restricted, this has an effect on the length, quality, and thoroughness of the service.

Timing of Evaluation Service Delivery

The goals of evaluation are often dependent on when it is offered in relation to the overall service delivery continuum. Vocational evaluation and assessment offered early in the rehabilitation, education, or transition continuum will focus more on the use of results in planning; while evaluations and assessments offered near the end of the continuum will focus on placement (see process illustration). Mid-point evaluations could be used to monitor progress and modify plans.

The Rehabilitation/Education Process

Assessments given to students in the early grades may focus on planning for remediation and accommodation, and on helping students and teachers choose appropriate courses and curriculums. Assessments offered at the end of school (11th and 12th grades) will focus on transition and placement within the community. Evaluations provided early in the process for vocational rehabilitation and public employment programs will focus on planning for rehabilitation, remediation, training, and job readiness, while evaluations near the end of the process will concentrate on job and community placement. Prior to changes in the Rehabilitation Act, evaluations offered early in the vocational rehabilitation agency process were used to determine client eligibility for Vocational Rehabilitation (VR) services, a procedure no longer

allowed. Today, however, evaluations are given at the end of the VR process to determine consumer eligibility for community programs and services (i.e., do consumers meet the entrance requirements for colleges, for supported employment programs, or for other community programs with established entrance criteria).

In community rehabilitation programs, vocational evaluations offered upon entry will identify a baseline and goal for planning the delivery work adjustment services. Evaluations initiated near the end of work adjustment will address job and community placement options and supports. In industrial injury rehabilitation, evaluations conducted at the beginning of the process will determine if an injured worker will benefit from rehabilitation and if returning to some form of employment will be feasible (e.g., the same or similar job, the same or different employer). Evaluations at the end of the private rehabilitation process will examine employment feasibility, specific employment options, and appropriate accommodations.

Vocational evaluation and assessment does not have to be given once. For individuals with severe and multiple disabilities, and individuals who show rapid and significant change, several evaluations may be needed. An evaluation given in the beginning to recommend work adjustment needs and strategies for a youthful offender may also be re-administered at the end of work adjustment to determine what new interests and potential the individual now has and is motivated to use. See Figure 1 for an illustration of the process.

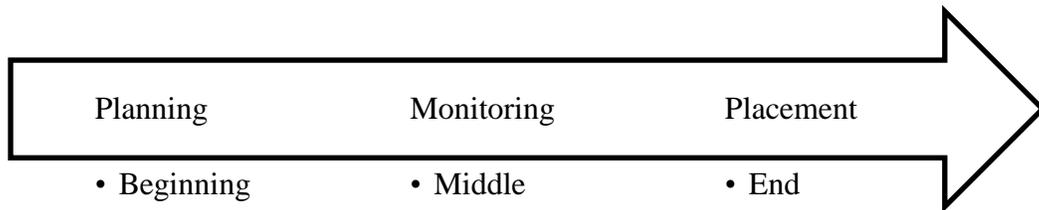


Figure 1. Evaluations of students from early to late grades by vocational rehabilitation and public employment programs.

What Referral Sources Want from Evaluation

Marketing efforts must strongly emphasize that there needs to be a careful balance between what the referral source wants from an evaluation, and when, in the overall process, the consumer should be referred. As illustrated in the previous section, referral sources must understand that evaluations offered early in a rehabilitation or education process can address planning issues much better than direct placement options.

Take, for instance, a counselor who makes a referral for an evaluation early in the rehabilitation process. The referral form requests recommendations for specific jobs that the consumer can and would like to do. The evaluation reveals that the individual is currently unmotivated to work and has poor socialization and work maintenance skills, requiring extensive work adjustment and counseling. In this case, even recommending general areas for employment would not be appropriate until work adjustment services have been rendered. If work adjustment fails to bring about desired changes, job recommendations based on success in adjustment would

be unrealistic. On the other hand, if work adjustment is successful, the consumer may be capable and interested in receiving training or employment at much higher levels than was considered feasible prior to adjustment services.

In this situation, the evaluator has two choices: a) provide two sets of contingency-based recommendations, one set based on a lack of success in work adjustment, another set contingent on success in work adjustment; and b) recommend that the consumer be referred for another evaluation at the end of work adjustment to determine current and realistic employment options. The evaluations that are offered at the beginning and the end of this work adjustment process may have very different outcomes. The accuracy of job recommendations made early in the process are dependent on the appropriateness of planning, the similarity between evaluation recommendations and the plan, and the success of services rendered.

Several recent studies have been conducted into what referral sources want from vocational evaluation. Following is a table (Hayward & Thomas, 1993, p. 337) that provides a ranking of what 900 Vocational Rehabilitation Counselors from 15 states nationwide considered as important purposes of vocational evaluation (counselors could select three responses).

Table 3

Importance of Purposes of Vocational Evaluation

Purpose of Vocational Evaluation	Percentage
To determine the client's vocational abilities	72.3
To help determine which services will be needed	45.6
To help develop an appropriate IWRP (plan)	43.9
To determine client's abilities and limitations	36.6
To help make a determination of eligibility*	34.4
To give client a more realistic understanding of self as a worker	29.8
To improve client's likelihood of employment	10.3
Other	0.3

*No longer allowed under the law.

Table 3 tends to indicate that counselors wanted a better understanding of an individual's ability and potential so that this information could be used in planning. The majority of the evaluations in this study were conducted early in the process and would, therefore, have a greater emphasis on planning. Improving the likelihood of employment may not have been rated highly since counselors already expected that the client would be employed, and simply needed help from evaluation to plan a direction.

Lee, Taylor, and Rubin (1994) conducted a study with 120 vocational rehabilitation counselors in a Midwestern state to determine the counselor's perceived value of vocational evaluation information. It was found that the three highest-ranked items by the counselors in the survey group were related to the functional aspects of the consumer (physical limitations, physical capacities, and health/medical limitations). This was not consistent with the evaluator's perception that interest, achievement, aptitude, and skills information were what VR counselors

wanted most. The study also revealed that although counselors consider functional information to be of greatest value from vocational evaluation, they were not always satisfied with what they received. The authors felt the findings suggested that counselors were not receiving sufficient medical information from health care providers for practical decision making regarding rehabilitation potential.

Using factor analysis of a 45-item questionnaire, Taylor and Bordieri (1995, p. 14) identified three areas (or factors) of vocational evaluation information that were considered to be of value to 374 VR counselors in four Midwestern states.

Factor I: Work Personality, Physical and Cognitive Considerations. This area contained evaluation information related to a consumer’s work personality and physical and cognitive capabilities.

Factor II: Specific Job Selection Considerations. Included under this factor was evaluation information that assists consumers in identifying optimal vocational choices.

Factor III: Formal Education and Training Considerations. This consisted of evaluation information related to a determination of optimal vocational training and educational opportunities for the consumer.

Counselors in the study indicated that information provided by vocational evaluators on *Specific Job Selection Considerations* (Factor II) was not as “sufficient” for use in planning as the other two factors. Counselors expected more information on specific services that could reduce deficits in consumers’ knowledge of vocational limitations, local feasibility of consumers’ job options, available training programs in the community, and transferability of the individuals’ job skills.

Lombard (1994) and Miller, Hazelkorn, and Lombard (1997) surveyed special populations educators in 70 Wisconsin secondary schools that offered formal vocational assessments. The study found that school personnel used assessment data for the following activities.

Table 4

Percentage of Assessment Data Used for Activities

Activity	Percentage
Individual education plan (IEP) development	86.0
Placing students into programs	86.0
Formal transition planning	87.0

Planning appeared to be the primary use of vocational assessment information in the surveyed schools.

Wesolek and McFarlane (1991) analyzed 284 surveys from eight states and the District of Columbia, representing four vocational evaluation referral sources: educators (special education, vocational education, general); proprietary rehabilitation personnel (Workers' Compensation); state rehabilitation agencies personnel; and employment personnel (JTPA, job service). This study of 47 factors examined the perceived needs of vocational assessment information by those who use the results. Following is an analysis of the primary information needs by setting.

Education. Work skills/abilities, communication skills, vocational interests, common sense/judgment, and creativity.

Proprietary rehabilitation. Work skills/abilities, physical limitations, employment/work history, health and medical limitations, training history, physical adaptability, residual functional capacities, marketable skills, and job readiness.

State rehabilitation agencies. Work skills/abilities, physical limitations, employment/work history, health and medical limitations, and residual functional capacities.

Employment services. Work skills/abilities, physical limitations, employment/work history, health and medical limitations, training history, communication skills, common sense/judgment, creativity, marketable skills, job readiness.

The authors concluded that the perceived needs of the two rehabilitation and employment groups were more similar than those of the education group. More specifically, the education referral source had significantly different perceived needs for vocational assessment results. Information on what referral sources want from vocational evaluation will be discussed further in the chapter on report writing.

Rules of Vocational Evaluation

If an evaluation is to be successful, then it must examine more than the vocational needs and potential of individuals. For that reason the evaluation must be holistic, ecological, contextual, and functional. It must be holistic in that the total person should be considered. The broad range of vocational issues related to employment or training options, learning and modification requirements, and interests and temperaments must be supplemented with additional assessments of basic skills and abilities, behaviors, living conditions, family, transportation, personal/social issues, community supports and services, and recreation.

It must be **ecological** in that the environment a consumer will be entering, or returning to within the community, should provide the specific model for the assessment. For an individual with head injury who may have subtle changes in behavior or performance, carefully matching the person with the total environment (whether it be work, educational, living/family, or personal/social, etc.) would provide the best way of determining the barriers that currently stand in the way of success (Parker & Schaller, 1996; Thomas, 1991). The work place (or organizational) culture is an important environmental issue in that worker acceptance is dependent, to a degree, on socialization—a concern for many individuals with disabilities (Szymanski, Ryan, Merz, Trevino, & Johnston-Rodriguez, 1996).

It must be **contextual** in that the background of the evaluatee and all functional abilities and limitations must be considered within the context of the situations in which the person will be placed. This is similar in nature to the ecological assessment process but looks at context-specific situations more than total, and sometimes unrelated, environments. For example, the context of the work station (co-workers, supervisors, work demands) at times may be of greater importance than the overall environment of the plant (noise, lighting, employer attitude, etc.).

It must be **functional** in that norm-referenced testing and the isolated measurement of abstract constructs may have little bearing on day-to-day functioning. Any assessment must be able to directly relate performance outcomes to realistic tasks and activities. Content-specific or criterion-referenced assessments can provide meaningful information about how a person will perform or behave in a particular setting.

Vocational evaluation, like the rehabilitation and transition process, should incorporate a **multi-disciplinary approach**. This would include other professionals such as physicians, psychologists, neuropsychologists, occupational therapists, physical therapists, speech therapists, social workers, and teachers, as well as parents/spouses/family members, friends, co-workers, employers (past and future), and the person being evaluated. Deutsch and Fralish (1989) felt that the person being served is an equal member of a total rehabilitation team and should therefore be referred to as a “member” rather than a “patient,” in order to give them a sense of ownership and belonging in the process. After all, the most important person in the process is the individual being served. Evaluation requires the involvement of a wide variety of concerned participants, all of whom have valuable information to offer to the **transitional rehabilitation process**.

Information from these many participants is critical to the total evaluation picture. File reviews, interviews, observations, and staffings conducted by or with significant others have nearly as much to offer the vocational evaluation process as do results from standardized tests, work samples, situational assessments, and job site evaluations. Evaluators do not have the time, opportunity, or expertise to collect all essential information necessary for an effective and truly comprehensive evaluation. Therefore, evaluators must ensure that other professionals, family, and employers are as actively involved as possible. If other specialists are not available in-house, then cooperative working arrangements should be developed or report recommendations written to specify the additional evaluations needed to fully assess the evaluatee’s needs and directions.

There are many different rules that guide the vocational evaluation process. However, for the sake of brevity, only the primary rules of effective assessment will be outlined. Evaluators must always remain cognizant of the importance of these rules in ensuring that the best services possible are offered to their consumers.

- Evaluations should be used to screen people *in* and *not out* of programs, services, and jobs. Keep the process flexible, positive, and highly individualized so that report recommendations provide creative guidance for improved functioning and independence in as many environments as possible.
- Evaluation can and should be administered more than once. It is an ongoing process that can assess initial potential and direction, progress throughout rehabilitation and transition, and specific placement needs and considerations at the end.

- It is the evaluator and not the instrument that makes the process work. The evaluation can be no better than the evaluator conducting it; and no matter how good an evaluation instrument, without proper skill and understanding of its clinical uses it will have limited utility. There is probably more misuse of tests and work samples today than appropriate and thoughtful use.
- If evaluators are not willing to put themselves or members of their families through their evaluation process, then consideration should be given to changing the process.
- Evaluation should take as long as necessary to gather all pertinent information. Setting limits may save time and money but could result in the loss of valuable information. When evaluation fails at its intended purposes, it is often the “process” that is discredited rather than the “limitation” on time and resources.
- The more comprehensive the process, the more detailed and accurate the results. Cutting corners in evaluation may yield information that cannot be trusted and will eventually tarnish the credibility and usefulness of the service.
- It takes more than a vocational evaluator to offer a comprehensive assessment. Other rehabilitation professionals, the person’s family, the employer, co-workers, and the consumer also make up the vocational evaluation team. This means that evaluation should not always take place in a laboratory or clinical setting but in the community where the consumer plans to live and work.
- Evaluations should be both **diagnostic** and **prognostic**. They should tell you not only where the individual is at the moment (diagnostic) but also where the person could be in the future with appropriate, and specified, resources and services (prognostic).

Conclusion

Before any vocational evaluation or assessment service can be offered, specific issues essential to routine and effective service delivery must be addressed. Units need to determine the types of referral sources and populations they plan to serve, and the inclusive geographic areas, as well as what is expected from the evaluation. This will dictate the size of the unit (whether fixed or mobile), what will be administered, and how long it will take. Scheduling methods and numbers to be served must be considered in relation to the funding mechanisms and income requirements of the unit. Evaluators must be sensitive to the information needs of consumers and referral sources, and ensure that their service is offered at the appropriate time within the rehabilitation/education/transition continuum to adequately answer all questions.

There will always be a “tug-of-war” between production and rehabilitation, quantity and quality, when offering cost-effective, consumer-driven services. Evaluators want to provide the best assessment possible regardless of time and expense. Referral sources want the most information possible for the least amount of time and money. This delicate balance will require more than just a compromise of resources, but a unified vision of what is most important for optimizing a consumer’s potential.

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CHAPTER SIX

Instruments of Evaluation

Vocational Evaluation Tools

The generic term tools refers to the comprehensive collection of instruments, techniques, and strategies available to vocational evaluators in the routine performance of their job duties. Instruments, the focus of this chapter, are those standardized tests, work samples, and evaluation systems used to collect objective, norm-referenced data (e.g., time and error scores) on skill and ability. The techniques covered in the next chapter refer to the criterion-referenced approaches including functional assessment, situational assessment, continuity-based assessment, curriculum-based assessment, ecological/environmental assessment, behavioral observation, and interviewing used to subjectively assess behavior, performance, and attitude toward work. The strategies covered in the chapter on vocational evaluation processes are the accommodations, modifications, and supports for learning and performance that are applied during the use of instruments and techniques to ensure an accurate assessment of potential.

Vocational evaluation also relies on a wide variety of work-related tools (e.g., mechanical tools, office tools, electronics tools) to assess an individual's current and future potential. Unlike counseling, vocational evaluation is an equipment-oriented process. Evaluators in comprehensive units rely on similar kinds of tools and equipment used by workers on their jobs to assess a consumer's work-related needs and abilities. It is this reliance on simulated and real work tools and equipment that makes vocational evaluation uniquely different from other assessment disciplines that rely primarily on file review, interviewing, psychometric testing, and career counseling. Although vocational evaluation techniques will be briefly reviewed in this chapter to illustrate their interrelationship with evaluation instruments, they will be covered in greater detail in the following chapter.

Although evaluation instruments provide the opportunity to apply techniques and strategies (e.g., behavioral observation, modification) both instruments and techniques can stand alone as assessment methods. There are times when a technique can be used to collect information that is also available through the use of instruments. For example, the assessment of learning style can be accomplished by observing how individuals best understand what to do when being administering different tests, work samples, and situational assessments that are not designed to evaluate learning style. However, there are a variety of standardized instruments that were specifically designed to identify the preferred learning style. If such an instrument is used to determine the learning style, then the outcome can be validated through the observation of applied learning on other tests, work samples, and situational assessments. When instruments and techniques are used together, more subtle and detailed information can be collected that will provide greater insight into behaviors, interests, abilities, and needs of the consumer.

It is this highly individualized mix of instruments, techniques, and strategies within the evaluation process that make vocational evaluation a unique and creative venture for the participant and practitioner alike. The key to a successful vocational evaluation is knowing how

to efficiently plan when and what instruments and techniques will be administered to meet the individual needs of different consumers and referral sources. This chapter will provide a basic overview of the widely used instruments and techniques of evaluation and assessment. The application and interpretation of these instruments, techniques, and strategies will be described in later chapters.

Recognized Instruments and Techniques

The instruments and techniques of vocational evaluation have been adapted from a variety of other professions and fields that also engage in various forms of assessment (Neff, 1985; Pruitt, 1986). Psychology, for example, contributed standardized tests, the first work samples, and the testing laboratory. Pruitt (1986, p. 6) feels the most important concept psychology has given vocational evaluation is that "information derived from evaluative methods or instruments may be used to understand current behavior and to make predictions about future adjustment." Industry and industrial psychology created job analysis, behavioral rating scales, simulated tasks, and job tryouts for work classification, and employee screening and selection. The military has given evaluation the group testing approach and contributed to the further refinement of work samples through the development of instruments, such as flight simulators. The simulator has been applied to other fields to evaluate and train ship pilots and captains, and assess applicants for bank teller positions through computer simulations. Lastly, the rehabilitation facility in the United States can be credited with the organization and refinement of these different assessment approaches into the process known as vocational, or work, evaluation. Neff (1985, p. 180) indicates that, due to a lack of available assessment procedures, rehabilitation facilities were forced to develop their own "assessment devices, which largely fall under the work-sample and/or situational assessment categories."

Neff (1985) identified four instruments and techniques commonly used in the assessment of work potential. They include the:

- Mental testing approach,
- Job analysis approach,
- Work-sample approach, and
- Situational approach.

These are consistent with (Nadolsky, 1973, p. 51) five evaluation methods, which include: "(a) the psychological testing approach, (b) the work sample approach, (c) the situational approach, (d) the job tryout approach, and (e) the job analysis approach." With the exception of job analysis, the literature has recognized the same fundamental tools of evaluators (Sax & Pell, 1985; Tenth Institute on Rehabilitation Services, 1972). Similarly, Lesnik (1983) identified six generic "techniques" of vocational evaluation under the umbrella of occupational exploration. These techniques, which are listed in the general order used, and lead to the goal of real work, include:

- Interviewing,
- Psychological testing,

- Work samples situational assessment,
- Job site evaluation, and
- Job tryout.

The Vocational Evaluation and Work Adjustment Association (1975) classified the tools of vocational evaluation into three categories, situations as tools, resource tools, and applied tools, with a listing of the appropriate instruments and techniques under each one.

Situations as Tools

1. On-the-Job Evaluation, consisting of:
 - Job site situation,
 - Production work situation,
 - Trial training evaluation, and
 - Simulated job stations.
2. Work Samples, consisting of:
 - Actual job samples,
 - Simulated job samples,
 - Single trait samples, and
 - Cluster trait samples.
3. Psychometrics

Resource Tools

1. Occupational information
2. Client information
3. Job analysis
4. Audio-visual materials

Applied Tools

1. Interviewing procedures
2. Observational procedures
3. Reporting procedures

Sitlington, Neubert, Begun, Lombard, and Leconte (1996) identified methods for gathering information through transition assessment, which include:

- Analysis of background information interviews
- Psychometric tests
- Work samples
- Curriculum-based assessments
- Behavioral observations
- Situational assessments
 - In vocational settings
 - In community settings (e.g., home, recreation sites, banks, and stores)
- Assessing potential environments

- Analysis of community environments
- Job analysis
- Analysis of postsecondary education environments

A national study by Hayward, Wine, Thorne, Stoddard, and Wilhite (1992) reported the percentage of vocational evaluations conducted for Vocational Rehabilitation that used the following instruments and techniques (Hayward & Thomas, 1993, p. 337).

Table 1

Most Common Vocational Instruments and Techniques Used in Vocational Evaluation

Vocational Instruments and Techniques	Percentage of Use
Specific tests and work samples	92.9
Clinical interview	50.4
Situational assessment	30.5
Functional assessment	22.3
Other	2.9
On-the-job evaluation	4.8

Thomas (1986, pp. 150–151) found relatively similar distributions of use to the Hayward et al. (1992) study, in a national survey of 106 full-time vocational evaluators in public, private, and school-to-work settings, who were members of VEWAA. Psychometric tests and work samples were listed separately, and there was a much higher reported use of interviewing, situational assessment, and job site (on-the-job) evaluation.

Table 2

Most Common Vocational Instruments and Techniques Used Among VEWAA Members in Vocational Evaluation

Vocational Instruments and Techniques	Percentage of Use
Psychometric/standardized testing	100.0
Work samples and systems	96.0
Interviewing	95.0
Situational assessment	67.0
Job site evaluation	30.0
Other	16.0

In the early years of vocational evaluation, work samples were the instruments of choice. Over time, as evaluation became shorter, there was greater reliance on quicker and cheaper psychometric tests. Today, however, newer work sample and evaluation systems have been significantly shortened, increasing their frequency of use. Situational assessments, which rely on behavioral observation, are performed in-house or in the community and take considerable time to set up and administer, as do on-the-job evaluations (OJE) that rely on consumer placement in community-based jobs. As a result, situational assessment and OJE are used less frequently. The "Other" category at 12.9 % in the Hayward et al. (1992) study and 16 % in the Thomas (1986) study represent the range of creative activities employed by evaluators in assessing potential.

More current instruments and techniques used in evaluation and not mentioned above include computers for assessment, occupational information, job search, and report writing; functional capacity assessment; training analysis; and, checklists and rating scales used in areas, such as functional assessment and ecological (environmental) assessment. Variations of recognized instruments and techniques are also identified in the *CARF Standards Manual* (1996), and the *CCWAVES Standards and Procedures Manual* (1996). Although the administration and interpretation of various standardized instruments will be presented later in the book, brief definitions and descriptions will be provided in this chapter to give the reader a basic familiarity with selected evaluation instruments.

Considerations in Choosing Appropriate Instruments

There is a well-defined hierarchy of vocational evaluation instruments (Cutler & Ramm, 1992; Thomas, 1991). It is based on the relationship of the instrument to real and simulated work—a fundamental consideration in vocational evaluation. As illustrated below, the most commonly used assessment instrument is the psychometric test. It is the quickest and most cost-effective means of obtaining information. Because psychometric tests are abstract in design, often require reading, and frequently have time limits, they look the least like work of all the evaluation instruments. Therefore, they may create testing anxiety in people who do not perform well on standardized tests, and the results may not adequately represent current ability or future

potential. Since they rely on a comparison of the individual being tested to a group of individuals in a norm table, they are often referred to as "norm-referenced" instruments or procedures.

Work samples (which are simulations of work) are initially more expensive to buy than psychometric tests and take longer to administer. As a result, they are not given as frequently but are more appropriate for the assessment of work-related performance, behavior, and manifest interest than psychometric tests. Situational assessments and community-based assessments (on-the-job evaluations) take the longest time to administer because of their focus on work-related behavior and are the least used evaluation techniques. Community-based assessments, in particular, have the highest relationship to work and rely on a "criterion-referenced" interpretation (i.e., how the individual performed each job task), rather than a norm-referenced interpretation. Situational assessments and community-based assessments are particularly useful for lower functioning individuals who might benefit from supported employment placement but, by no means, are limited in their application to lower functioning populations. Since work samples share many of the same characteristics with tests and situational assessments, they provide an opportunity for both norm-referenced and criterion-referenced assessment and interpretation.

Continuum of Vocational Evaluation Instruments

The tools an evaluator uses are a personal choice; what works for one may not work as well for another. As a result, many evaluators are somewhat eclectic—that is, they prefer to use a variety of instruments and techniques that best fit their assessment style and philosophy, as well as evaluation setting. A unit must maintain a widest possible variety of instruments to relate to: changes in populations; referral source needs; differences in consumer interests and abilities; and, the variety of available community resources, training and education programs, and employment/career opportunities. Following are a number of important questions evaluators must answer when choosing a repertoire of instruments and techniques for the unit (Brown, McDaniel, Couch, & McClanahan, 1994; McDaniel & McClanahan, 1993; McFarlane, Bellinger, Paulsen, Wesolek, & Modahl, 1988; Thomas, 1991).

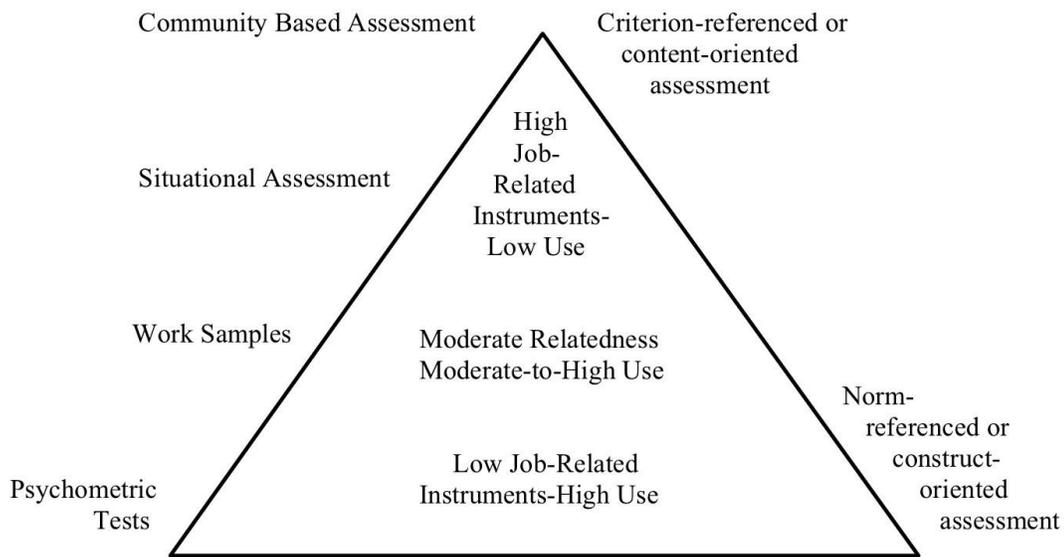


Figure 1: Continuum of Vocational Evaluation Instruments

1. What is the composition of the population being served? Although an evaluator will want to anticipate occasional variations in the type of individual served, instruments should be targeted to the typical referral. Tests and work samples should not be too easy or too difficult for participants to take. Otherwise, motivation in the evaluation will be affected. Instruments for readers and non-readers that assess for the same information (e.g., written and picture interest inventories) should be available.
2. What are the composition of the labor market, course/curriculum offerings at local schools and colleges, and community resources? There is little value in using instruments that do not represent available jobs (or job families), education, and training. In addition, evaluators need to know what community resources (e.g., remedial programs, adjustment services) and community supports (e.g., supported employment, supported living, accessible public transportation) are available to consumers to enhance learning, living, and working.
3. What are the goals and objectives of the evaluation/assessment unit? Similarly, what are the needs of consumers/students and referral sources? For example, if the goal is to assess curriculum placement for secondary special needs students, then more attention must be given to class placement rather than job placement issues. In this case, the repertoire of instruments must represent curriculum and community training opportunities first. The needs of consumers and referral sources must be consistent with the goals and objectives of the unit, and the two must be considered simultaneously when change is contemplated.
4. What is the size of the unit? In small fixed or mobile units, only instruments that are easily stored and setup when needed can be purchased. Bulky evaluation systems and work samples can be permanently set up in larger fixed and mobile units.

5. What is the length of the evaluation? Length (e.g., several hours, several days, or several weeks) dictates the number and types of instruments and techniques that can be administered. Therefore, the time necessary to give, score, and interpret lengthy work samples, entire evaluation batteries, or situational assessments may take longer than is provided for evaluation. In this case, the evaluator must rely on brief work samples and psychometric tests. The needs of the consumer and level of functioning will influence the length of the service and the types of instruments and techniques employed.
6. What is the consumer-to-evaluator ratio (i.e., will there be a group or individual administration)? Evaluators need to be fully aware of the demands on their time made by the different instruments they use. If the ratio is one to one, then evaluators can use instruments that require their undivided attention; where they must be present throughout the entire administration. If the ratio of two to one or higher, then instruments that take up less of the evaluator's time for instruction and assistance must be chosen. Although instruments designed for use with a high ratio or with groups can usually be administered individually, but instruments requiring an individual administration cannot be used with two or more evaluatees at the same time. In general, instruments that allow the evaluator to give the instructions and walk away to observe behavior at a distance are often preferred.
7. What is the cost to buy, administer, score, and maintain an instrument or battery? Although some work samples and evaluation systems have a high front-end purchase cost, their durability and low maintenance may make them cheaper, in the long run, than psychometric test materials and packets that are expended with each administration. It is best to conduct long-term price comparisons based on at least two years' worth of administrations to determine which approaches are most cost-effective. Computer scored tests may be costly if charged by the person, as compared to unlimited access software. Because of the equipment orientation, vocational evaluation units will require sufficient funds to routinely purchase materials and supplies, and maintain or replace instruments. Evaluators must target how many participants will be served each year and set their budget based on the overall costs.

Other considerations for instrument choice may surface depending on the unit. Over time, personal experience will provide a better understanding of instrument needs. Following is a review of three selected instruments (i.e., psychometric tests, work samples, evaluation systems) commonly used in vocational evaluation and assessment.

Psychometric Tests

Psychometric tests are standardized instruments (paper-and-pencil and performance-based) used primarily for counseling and planning; in this case, vocational/career counseling and planning. Psychometric tests are different than the more high level "psychological tests" (e.g., intelligence tests, personality tests, projective tests) used by licensed psychologists for clinical diagnosis. The American Psychological Association originally developed a test classification system that is used today by companies that market standardized tests to qualified users. Companies such as American Guidance Service, Consulting Psychologists Press, Psychological

Assessment Resources, and The Psychological Corporation give the "user qualification level" for each test listed in their catalogs. There are three user qualification levels: A, B, and C.

User Qualification Levels.

Level A. This ranges from no qualifications for test use, other than employment with an appropriate company or organization ordering the tests, to the completion of a course in measurement, guidance, or related area. Supervised experience in test administration and interpretation is also acceptable. Tests in this category include dexterity tests traditionally used for employment screening in industry, and some self-administered and self-scored interest and aptitude tests. Generally, the range of tests available for purchase at this level is quite limited.

Level B. Depending on the company, users must have graduate training in measurement, guidance, or psychological assessment, or a Bachelor's or a Master's degree in psychology, counseling, education, or closely related field. Membership in specified professional associations or licensure/certification in appropriate areas will also qualify a user. This level contains the largest number of tests that are most frequently used by appropriately trained and qualified vocational evaluators. They include interest and work values tests, achievement and aptitude tests, and some intelligence tests used for quick screening.

Level C. Requirements in this category range from a graduate degree (a doctoral degree is preferred) in psychology, education, or closely related field; with coursework, training, and/or supervised practical experience in the administration and interpretation of clinical assessment instruments (i.e., psychological tests). Appropriate professional association membership or licensure is also acceptable for purchase.

Psychology licensure requirements for testing vary from state to state, and the ability to buy a test may not necessarily qualify someone to use it. Evaluators must check their own state regulations to determine the minimum qualifications needed to use specific kinds of psychometric and psychological tests. States generally do not limit appropriately trained and/or certified evaluators (CVE or CRC) from administering and interpreting Level A and B psychometric tests. However, restrictions may be placed on the use, especially the interpretation, of Level C psychological tests.

Ethical Considerations in Testing

It has been this author's experience that standardized tests are frequently misused. Much of this misuse comes from a lack of knowledge of tests and measurements theory, including norms and norm groups, reliability, validity, Standard Error of Measurement, standardization in administration and scoring, and interpretation strategies. Knowledge of tests and measurements theory is just as important to the work of vocational evaluators as counseling theory is to counselors. Anyone engaged in any form of standardized testing should have, at a minimum, a course in testing that emphasizes measurement principles, ethics in testing, and a review of the different types of standardized tests. In particular, it is the violation of well-recognized ethical standards, which are generally accepted across related professional disciplines, that can create harm to the consumer, misinformation for the referral source, and potential legal trouble for the individual in charge of testing. Ignorance of ethical standards is not an acceptable defense for

uninformed evaluators who are facing a hearing, grievance, or litigation resulting from inappropriate test use.

Following is a brief list of the major ethical guidelines that test users must firmly adhere to in all aspects of purchasing, storing, administering, scoring, and interpreting standardized tests. These ethical "themes" were taken from the codes of ethics of the American Counseling Association, the American Psychological Association, the Commission on Rehabilitation Counselor Certification, the Commission on Work Adjustment and Vocational Evaluation Specialists, and the Joint Committee on Testing Practices (1988).

1. Vocational evaluators must recognize the limits in competence and qualifications they have on using certain tests. They should also understand the purposes and limits of the tests they are using and know how they will benefit or potentially harm the consumer.
2. Evaluators must be sensitive to the impact that disability, socio-economic status, education, age, gender, race, and culture have on choosing, administering, and interpreting standardized tests. Many evaluation units will have a variety of tests that assess the same areas (e.g., mechanical reasoning) for readers and non-readers, and for individuals who approach learning and processing of information differently. The goal is to eliminate any adverse impact in testing and level the "playing field" (i.e., give all examinees the same unbiased opportunity to demonstrate their best performance). Adverse impact (as with differential prediction) is where one group performs better on a test than another but with no appreciable difference in the performance between the two groups on the outcome (e.g., job or classroom performance). Cross-cultural issues must be considered by the evaluator. Be attentive to how a test is designed to handle variations in motivation, working speed, language facility, experiential background, and any bias in response to its content by individuals taking it (Alston & McCowan, 1994; Colyer & Smith, 1993; Joint Committee on Testing Practices, 1988; Prediger, 1993; Smart & Smart, 1993; Suzuki, Meller, & Ponterotto, 1996). Understand that the individual being evaluated is a "cultural entity" (Feist-Price, Harley, & Alston, 1996). Review the manual to determine if there are representative samples of minorities, women, individuals with disabilities, and individuals from a wide age range in the normative sample, and in the reliability and validity studies as well. Determine if studies of equity are reported in the manual or literature on the test in question. Review test content to determine if the wording is free of stereotypes and cultural bias. During test orientation and administration provide appropriate accommodations, when necessary, to minimize language, processing, and time barriers, and describe the accommodations made when reporting test results. Test developers and publishers are becoming more sensitive to the need to minimize bias in testing related to age, gender, race, culture, and disability. In the future, existing tests will be revised, and new tests developed that can be accurately used across an inclusive range of groups and environments.
3. To protect the confidentiality of tests, evaluators must maintain all unused test materials in a secure place. All used tests must be maintained in consumers' files and also stored in a secure place. It is the responsibility of the professional using the test to safeguard the

materials. In particular, tests should not be given or mailed to consumers to take at home unless the test is designed for that purpose.

4. Participants in evaluation and assessment must ensure that informed consent is obtained before tests can be administered. The evaluatee must be notified of and agree to three things: (a) the purpose of the testing program; (b) the kinds of information being sought; and, (c) what will be done with the information obtained. Some referral sources, such as Vocational Rehabilitation state agencies, workers compensation rehabilitation companies, and welfare-to-work programs, will have blanket consent forms signed before evaluation is provided. However, this does not circumvent the evaluator's responsibility to cover these three facts with the participant during the orientation phase. School systems often require that a separate consent form be completed for every service including vocational assessment. Vocational evaluators should not release evaluation reports to individuals who were not identified as recipients of the report; nor should they share any test results with unauthorized individuals. Since the report is considered the property of the referral source and the consumer, anyone else requesting a copy should be directed to contact the referral source. However, if a subpoena is issued for report or test information, the evaluator should turn over only that information that is requested in the subpoena, excluding actual copies of the test. Test score forms and profiles can be attached to reports, but as indicated in the previous ethical guideline (see 3.), not the actual test itself. This will compromise the test's confidentiality if the report is subpoenaed, in which case it will end up in public court records, or if a copy of the report and attachments are given to the consumer or consumer's family, it will be released into the public domain. Since tests are protected by copyright, their unauthorized public distribution is further restricted, and if attorneys insist on receiving a copy, refer them to the publishing/marketing company.
5. Strict adherence should be paid to administering, scoring, and interpreting the test as specified in the manual. Variation in the instructions and interpretive guidelines set down in the manual will negatively affect the accuracy and utility of the results. Reasonable accommodations are allowed in administration and test performance; however, there is no set rule or formula that can predict how the modification will affect the validity of the instrument. In this case, criterion-referenced procedures will take precedence over norm-referenced procedures when scoring and interpreting the instrument. Modifications in standardized testing are appropriate when it is found that the test is unsuitable for use as is, and when other tests that measure the same trait (that would eliminate the need for modification) are not available. Modification is appropriate as long as a description of why and how the test was modified is included in an oral and written review of the test results. Although some professionals argue against the modification of standardized tests, this author would sooner be in violation of tests and measurement principles than to be in violation of the ADA. A detailed description of specific modification procedures will be presented later in the book.
6. Since most standardized tests today employ a norm-referenced approach to scoring and interpretation, use of appropriate norm groups is essential. When interpreting performance, take into account any major differences between the norm groups and the

individual taking the test (Joint Committee on Testing Practices, 1988; Prediger, 1993). In reference to "substantial limitations to the activities of living and working," the ADA indicates that comparisons should be made to the general population (for living activities) and to the working population (for work activities; Thomas, Hiltenbrand, & Tibbs, 1997). Therefore, general population norms, applicant norms, and job trainee or worker norms should be used when available. If an individual wants to go to school, then the use of appropriate school norms would be recommended. "*The Civil Rights Act of 1991* (P.L. 102–166)" specifically addresses the issue of norms through *Section 106 Prohibition Against Discriminatory Use of Test Scores*. An amendment to the section states that:

It shall be an unlawful employment practice for the respondent, in connection with the selection or referral of applicants or candidates for employment or promotion, to adjust the scores of, use different cutoff scores for, or otherwise alter the results of, employment related tests on the basis of race, color, religion, sex, or national origin.

7. The testing environment should be quiet, comfortable, and conducive to optimizing performance. Every attempt should be made before and throughout the evaluation to minimize testing anxiety and ensure the best possible performance of the participant.
8. Provide an accurate, understandable interpretation of the results and relate them to the purposes of the test and overall evaluation (e.g., employment and training, goals and needs). This interpretation may be offered to consumers and their families, to the referral source, and to other involved professionals through written and oral communication. Scores should be considered as approximations since no percentile score is an absolute representation of performance. The evaluator may also want to use more than one norm group for a broader comparison of performance to other environments and populations. Scores from one test, or work sample, will have less utility than scores and observations from a variety of different evaluation instruments and techniques (e.g., work samples, situational assessments, job or classroom tryouts). Comparison of scores to other evaluation information from sources, such as file review, interviews, staffing, behavioral observations, job analysis, and occupational information, will increase accuracy in decision-making. This broad interpretive approach, which uses multiple sources of information, will help the evaluator account for a significant number of variables that affect the outcome.
9. Update test versions when they become available. If a publisher continues to support an older version of a test, it can be used until the forms are no longer stocked. Outdated tests may result in outdated outcomes.

The codes of ethics of professional associations, and licensure and certification bodies that represent testing disciplines, provide specific standards for the appropriate choice, administration, scoring, interpretation, and safe keeping of standardized tests. Federal regulations available through the Equal Employment Opportunity Commission (EEOC) also provide guidelines for employment screening and testing. The following two ADA regulations,

administered by the EEOC, caution professionals on how tests should be chosen and used with individuals with disabilities.

It is unlawful for a covered entity [employer] to use qualification standards, employment tests or other selection criteria that screen out or tend to screen out an individual with a disability or a class of individuals with disabilities, on the basis of disability, unless the standard, test or other selection criteria, as used by the covered entity, is shown to be job-related for the position in question and is consistent with business necessity ("Americans with Disabilities Act of 1990," 1991a).

It is unlawful for a covered entity to fail to select and administer tests concerning employment in the most effective manner to ensure that, when a test is administered to a job applicant or employee who has a disability that impairs sensory, manual or speaking skills, the test results accurately reflect the skills, aptitude, or whatever other factor of the applicant or employee that the test purports to measure, rather than reflecting the impaired sensory, manual, or speaking skills of such employee or applicant (except where such skills are the factors that the test purports to measure; "Americans with Disabilities Act of 1990," 1991a)

These awkwardly worded regulations relate more to testing performed in employment settings than to rehabilitation or transition settings. However, the regulations have general application to vocational evaluation as well since tests are often used to determine employment potential and placement. In short, the two regulations stress the need to carefully choose and use tests and work samples that evaluate individuals' abilities rather than their disabilities. Keep in mind that psychometric tests should not be used in evaluation and assessment as diagnostic instruments but to provide direction for vocational/career counseling and planning—with the ultimate goal of achieving satisfying and meaningful employment for the consumer.

Review of Standardized Tests

Eight different categories of Level A and B standardized tests commonly used in vocational evaluation and assessment will be reviewed. These categories include achievement, aptitude, basic skills, dexterity, intelligence, interest, learning style, and temperament and work values tests.

Achievement Tests. VEWAA's *Glossary of Terminology* (Dowd, 1993, p. 1) defines an achievement test as one "that measures the extent to which a person has 'achieved' something, acquired certain information, or mastered certain skills—usually as a result of planned instruction or training." Whereas professional certification and licensure examinations are considered to be achievement tests, the focus for evaluators is on assessing the more fundamental and traditional skills of reading, spelling, and mathematics. A few achievement tests may also include vocabulary or information subtests. Most comprehensive achievement tests are available at different levels (e.g., by school grade, age, or functional level), have time limits, and take several hours to administer. Results are reported using a combination of percentile scores, stanine scores, standard scores (which can be used to compare results to IQ scores), and/or grade level scores (e.g., 3rd Grade, 7th Grade, post high school). Although grade level scores are

routinely requested by counselors and reported by evaluators, they cannot be used to draw direct comparisons to grade levels in local school systems.

Formats for different reading subtests often consist of word recognition, vocabulary, or comprehension questions, with some comprehensive tests using a combination of subtests. Mathematical questions consist of math problems and/or word problems and require the examinee to write down the answer or choose the correct one from a list of four or five possible answers (forced-choice format). Spelling subtests (which are frequently omitted by evaluators with limited time) can be dictated to the examinee, or the correct word chosen from a list of four or five similarly spelled words. As a rule, items on the tests are arranged in an increasing order of difficulty. Examples of achievement tests include:

- Adult Basic Learning Examination (ABLE)
- Comprehensive Adult Student Assessment System (CASAS)
- Key Math—Revised
- Peabody Individual Achievement Test—Revised (PIAT-R)
- Tests of Adult Basic Education (TABE)
- Wide Range Achievement Test 3 (WRAT-3)
- Woodcock Reading Mastery Tests—Revised (WRMT-R)

Achievement tests are often given first to determine whether reading or non-reading instruments should be used. Most psychometric tests require reading at the 7th-grade level or higher, with low-reading versions around the sixth grade or less. The consumer populations of most referral sources (e.g., Vocational Rehabilitation, school-to-work and welfare-to-work transition programs) read at around the 6th-grade level. Therefore, tests must be chosen and used with caution to ensure that low reading level does not unknowingly affect performance. Functional illiteracy in the United States is defined as reading, spelling, and math at or below the 4.9th-grade level. The "local" section of the average newspaper is written at the 6th-grade level (ranging from 4th for want ads, to 9th or 10th for the international section). Reading ability is a critical factor for success in the United States today.

Aptitude Tests. Aptitude is "a combination of abilities and other characteristics, whether native or acquired, that are indicative of an individual's ability to learn or develop proficiency in some particular area if appropriate education or training is provided" (Cronbach, 1990, p. 701; Dowd, 1993, p. 2) defines an aptitude test as "a measure intended to predict success in a job, educational program, or other practical activity." The purpose of aptitude testing in vocational evaluation is to determine an individual's potential to succeed in a particular course or job where there has been no prior exposure or experience.

A fine line between an aptitude and achievement test and a certain amount of achievement is always needed (e.g., reading) to do well on an aptitude test. The U.S. Department of Labor (1991b) incorporates the following 11 aptitudes into its occupational classification system: intelligence or general learning ability (G), verbal ability (V), numerical ability (N), spatial ability (S), form perception (P), clerical perception (Q), motor coordination (K), finger dexterity (F), manual dexterity (M), eye-hand-foot coordination (E), and color discrimination

(C). Other aptitudes appearing in the testing literature include mechanical reasoning, abstract reasoning, sales aptitude, and musical aptitude, to name a few.

Some evaluators attempt to use a limited number of aptitude tests, such as verbal, spatial, and manual ability, to develop a general aptitude composite. While these three scores have utility, uncovering subtle differences only available when all subtests are administered, can improve the comparison of scores to the complex aspects of work (Cronbach, 1990). For example, a vocabulary subtest may be a good measure of verbal aptitude, but it may not fully represent performance on other aptitude subtests, such as verbal reasoning, spelling, and language usage. Ultimately, scores can be categorically grouped (e.g., cognitive, spatial, motor) for interpretive purposes, as long as score differences within each group are not significant.

Aptitude tests are available individually to measure a single aptitude (e.g., mechanical reasoning, clerical ability, spatial relations), or as multiple aptitude (or multi-aptitude) test batteries. Multiple aptitude test batteries are composed of a collection of eight-to-twelve subtests that cover a broad range of aptitudes, similar to the Department of Labor's 11 aptitudes (i.e., general learning ability, verbal, numerical, spatial, form perception, clerical perception, motor coordination, finger dexterity, manual dexterity, eye/hand/foot coordination, color discrimination) All subtests within a battery are universally similar in their layout, administration, scoring methods, norm groups, and interpretation strategies. This "universality" allows for the comparison of subtest scores—a procedure that is difficult to do with individual aptitude tests that do not share the same developmental philosophies or norm groups. Profiles are available for interpreting and comparing results on multiple aptitude test batteries. Percentile scores in the low thirties and higher is often indicative of average and better performance when compared to the chosen norm group.

Examples of individual and multiple aptitude tests are as follows:

- Individual Aptitude Tests
 - Bennett Mechanical Comprehension Test (BMCT)
 - Computer Operator Aptitude Battery (COAB)
 - Computer Programmer Aptitude Battery (CPAB)
 - Minnesota Clerical Test (MCT)
 - Minnesota Spatial Relations Test–Revised (MSRT)
 - Office Skills Test (OST)
 - Revised Minnesota Paper Form Board Test (MPFB)
 - SRA Clerical Aptitudes
 - SRA Test of Mechanical Concepts
- Multiple Aptitude Batteries
 - Career Ability Placement Survey (CAPS)
 - Differential Aptitude Tests (DAT; several editions are available)
 - Employee Aptitude Survey (EAS)
 - General Aptitude Test Battery (GATB)
 - Occupational Aptitude Survey and Interest Schedule (OASIS)

For the sake of administrative convenience, most aptitude tests have time limits. These time limits often affect the performance of individuals who do not respond well to the pressure of time, do not read or process quickly, and have difficulty marking the answer sheet rapidly. Work samples are a more work-related, "hands-on" method of aptitude assessment that can more easily minimize (or accommodate) the negative effects of time, processing, and manipulation on performance.

Basic Skills Instruments. Basic skills comprise those fundamental competencies related to independent living and working. They include activities, such as telling time, money handling, measuring (e.g., weight, volume, linear), sign recognition and survival words, consumer skills, job search skills, and knowledge of job keeping behavior. These are particularly important traits to assess in the prevocational phase with individuals whose basic skills are in question, as a result of a lack of community exposure, limited or no education, or processing disabilities, such as mental retardation or traumatic brain injury. Basic skills instruments are generally administered orally with the aid of pictures and other "hands-on" activities. In the strictest sense, they are not considered psychometric tests but standardized tests. Examples of basic skills instruments include:

- Life Centered Career Education Assessment System (Competency Rating Scale and Knowledge Battery–LCCE)
- Social and Prevocational Information Battery (SPIB–moderate and low level forms available)
- Street Survival Skills Questionnaire (SSSQ)
- Tests for Everyday Living (TEL)

Instructional materials and remedial suggestions are also furnished with these instruments that can be used to recommend or provide accommodations or improvements in identified skill deficits. With basic skills instruments, it is particularly important to supplement norm-referenced interpretation with criterion-referenced interpretation. For example, both methods of interpretation can be incorporated into statements, such as: "On the Ruler Reading subtest, Ms. Salazar's score at the 25th percentile, when compared to general population norms, indicated that she could only measure and draw lines down to a quarter of an inch." In a more dynamic, prognostic assessment, the evaluator would take the time to teach the participant how to read a ruler and administer the subtest again to see if learning took place, noting the method of instruction. If particular fine measuring skills are needed by the consumer, then goal-specific remediation or accommodation can be recommended.

Dexterity Tests. Dexterity is the "adroitness or skill in using fingers, hands, arms, and shoulders, sometimes in combination with other body parts. It is usually measured by observing performances on various work activities, such as work samples, or by administering standardized performance tests" (Dowd, 1993, p. 8). A dexterity test is a timed performance-based measure of various types of finger and manual manipulation, and eye-hand coordination. It is considered to be an aptitude test but is being reviewed separately because of its unique and extensive use in vocational evaluation.

Dexterity tests (also referred to as performance tests) either assess hand use or tool use at both fine and manual levels. The Crawford Small Parts Dexterity Test measures fine finger and hand dexterity with tools (small screwdriver and tweezers); and the Hand Tool Dexterity Test (by Bennett) measures manual dexterity of hand, arm, and shoulder using larger tools (screwdriver, pliers, and wrench). Since individuals who have never used tools before do not perform as well on tool-oriented dexterity tests as people with experience, non-tool-oriented dexterity tests are often preferred for an unbiased assessment of general dexterity. Tool-oriented dexterity tests should be reserved for individuals with experience using tools or who seek training or employment in jobs requiring the use of related tools. The Purdue Pegboard is an example of a non-tool fine finger dexterity test and the Minnesota Rate of Manipulation Tests (MRMT) is an example of a non-tool manual dexterity test.

It is important to remember that dexterity tests are a measure of timed dexterity—how quickly someone can perform an activity requiring dexterous ability. In addition, previous experience in a job or activity involving dexterous skills will tend to increase performance on related dexterity tests. Likewise, practice effect (improvement resulting from repeated administration of a test in close time intervals) will have an effect on dexterity test scores. For this reason, dexterous ability can best be observed using tests, work samples, and situational or community-based assessments that provide sufficient opportunities for finger and/or manual involvement. In conjunction with performance scores, the evaluator can determine through observation if the person is fast and accurate, slow but accurate, or slow with difficulty in grasping, moving, aiming, and/or placing an object. Observation of frustration, attention to detail, motivation, retention of a sequence of activities, organization, and problem-solving can also be observed during the administration of dexterity tests. Many evaluators also include range-of-motion, strength, and motor coordination tests and activities under this category, especially those used to assess the functional abilities and limitations of persons with physical and motor impairments.

Intelligence Tests. Intelligence "is the global capacity of the individual to act purposefully, think rationally, and deal effectively with the environment" (Power, 1991; Wechsler, 1981, in Power 1991, p. 87). Power (1991, p. 87) further states, "Intelligent behavior is as much a function of drive and incentive as the more traditionally conceived components of intellectual ability, such as abstract and logical thinking, reasoning, judging, and retaining knowledge." Intelligence tests are also considered to be aptitude tests that measure general learning ability (or general mental ability), but they are usually classified separately from other aptitude tests. The more well-known Level C intelligence tests, such as the Wechsler Adult Intelligence Scale-Revised (WAIS-R) and the Stanford-Binet Intelligence Scale (SB) are restricted in use to licensed psychologists and psychological associates for clinical diagnosis. These and other Level C intelligence tests are designed to measure verbal (left brain) and performance (right brain) ability through a series of different cognitive and motor subtests. This level of intelligence testing is only used in rehabilitation or transition when there is a need to diagnose the possible existence of mental retardation, a learning disability, or other cognitive/motor impairment.

Level B intelligence tests, which are available to vocational evaluators for individual or group administration, are geared to a brief screening of either verbal or performance ability.

Evaluators, counselors, educators, and psychologists frequently compare IQ scores obtained from Level B and C intelligence tests to the standard scores from achievement tests to determine the possible existence of a learning disability (i.e., one or several achievement scores that are one or more standard deviations lower than an average IQ score). Although intelligence tests are a poor predictor of general employability, they are a better predictor of the level of traditional placement in training, education, and employment. The following examples of Level B intelligence tests have been classified as either verbal or performance measures.

Verbal Measures:

- Otis-Lennon School Ability Test-6th Edition (OLSAT—formerly the Otis-Lennon Mental Ability Test)
- Peabody Picture vocabulary Test-3rd Edition (PPVT-III)
- Shipley Institute of Living Scale (SILS)
- Slosson Intelligence Test-Revised (SIT)
- Wonderlic Personnel Test

Performance Measures:

- Culture Fair Intelligence Test
- Raven's Progressive Matrices (Standard and Advanced Progressive Matrices for Adults)
- Revised Beta Examination—Second Edition (Beta-II)
- Tests of Nonverbal Intelligence-3 (TONI-3)

In situations where an individual's verbal skills are not strong, performance measures can be used and may indicate the consumer's ability to develop verbal skills (e.g., someone with limited English-speaking proficiency, or someone who has had limited education or quality learning experiences). Verbal measures are particularly useful when direct placement into academic courses, formal education, or training is being considered.

Interest Tests/Inventories. Terms like self-awareness, motivation, drive, need, and level of interest describe the constructs of vocational interest inventories (Power, 1991). Interests are often a reflection of our values, attitudes, personality, and to some degree, our aptitudes. Interest Tests are one of the most widely used instruments in vocational evaluation and career counseling. They are often given at the very beginning to set a vocational tone for the evaluation and to identify any personal goals that can be used in the development of the evaluation plan. Because interest tests are self-report inventories of personal likes and dislikes, their classification as a psychometric test has been questioned. Interest inventories are available in written and picture (non-reader) versions. Each test item may consist of two or three choices of work activities (written or pictorial) that allow the examinee to choose the most preferred, and sometimes the least preferred, activity in the set. Another format provides only one work activity (written or pictorial) at a time and examinees rate their level interest on a Likert-type scale (e.g., from very disinterested to very interested).

Results of an individual's high and low "tested interest" areas should be compared to "expressed interest" (statements made during the interview or contained in the file), and "manifest interest" (what was observed during evaluation, or performance on a related job or

school subject; Power, 1991; Pruitt, 1986; Siefker, 1996; Super, 1949, in Power, 1991). When all three are consistent (expressed, tested, manifest), a career or vocational decision has been internalized. When one or all three are inconsistent, or inventory profiles are relatively flat (i.e., no significant difference in interest category levels throughout the inventory), then career exploration and counseling would be warranted. High- and low-interest areas should also be compared when exploring employment options. For example, if someone scores high in management and low in computation, then jobs in human services management would be preferred by that person over jobs in fiscal management. There are some Workers' Compensation and Social Security evaluations that do not focus on interest but on what exists in the local economy that an injured worker would be able to do, regardless of personal preference. Some of these evaluations may also focus on wage loss and lost earning capacity unrelated to interest in the job.

The following examples of interest inventories are divided into written and picture interest inventories. Written interest inventories:

- Campbell Interest and Skill Survey (CISS)
- Career Assessment Inventory (CAI)
- Career Decision-Making System (CDM-R)
- Career Occupational Preference System Interest Inventory (COPS—available in a variety of versions from intermediate to professional)
- Kuder Occupational Interest Survey (KOIS)
- Ohio Vocational Interest Survey—2nd Edition (OVIS II)
- Self-Directed Search (SDS; available in standard and low reading versions; also covers self-report of abilities)
- Strong Interest Inventory (SII)
- Vocational Research Interest Inventory (VRII)

Picture interest inventories:

- Career Occupational Preference System—Picture Interest Inventory of Careers (COPS-PIC)
- Geist Picture Interest Inventory—Revised (GPII-R)
- Reading-Free Vocational Interest Inventory—Revised (R-FVII)
- Wide Range Interest-Opinion Test (WRIOT)

Versions of interest tests are available for students in a range of grades from junior high to college, for adults both vocational and professional, and for individuals who are mentally retarded. Tests can be self-administered and scored by the examinee, hand scored by the evaluator, or computer administered and scored. Profiles generally cluster specific interest scales under broader occupational themes. Some interest profiles will contain attitudes and/or values scales as well.

Interest inventories are not as useful for individuals who have limited knowledge of or experience with the world of work, and who may not understand the jobs or activities contained in the test. In addition, a lack of definitive validity studies on interest tests has brought their accuracy into question.

Learning Style Tests. VEWA defines learning style as "the way in which an individual learns new material. Learning style is usually defined in terms of the sensory modalities (e.g., visual, auditory, tactile, and kinesthetic) by which the person learns the fastest" (Dowd, 1993, p. 17). Learning assessment is the "determination of the potential to learn by identifying what teaching or behavioral change techniques are most effective" (Dowd, 1993, p. 17). The ability to understand, remember, and recall a set sequence of information essential to success in the classroom, on the job, or in the community, is a key element in targeting preferred (or primary) learning styles. The assessment of cognitive and learning styles has become a very important part of the vocational evaluation process. CARF requires that it be available for use when necessary; and schools require a learning style assessment with all students with learning disabilities, so that classroom accommodations can be provided.

Each personal way of dealing with information and experience, which forms the basis of learning style, can be related to the conditions, content, modes, and expectations of learning as well as to the stimuli and elements of the learning environment (Blakemore, McCray, & Coker, 1984). Dunn, Dunn, and Price (1979) identified five major factors (or stimuli) that affect learning: environmental (e.g., sound, lighting, temperature), emotional (e.g., motivation, persistence, structure), sociological (e.g., working alone or in a team with peers or authority figures), physical (e.g., time of day, mobility, presentation format), and psychological (e.g., analytical/global, reflective/impulsive, cognitive style). Many learning style inventories, such as the CITE Learning Styles Inventory, identify (a) how a student gathers information (auditorily, visually, with language, numerically, or kinesthetically), (b) the student's preferred working conditions (alone or with others), and (c) his/her expressive preferences (verbal or written)" (Blakemore et al., 1984, p. 49). Other test formats use an assessment of brain dominance (left brain versus right brain learning), or an identification of values and temperaments (sensing/intuiting, thinking/feeling) that influence how individuals learn.

Learning style instruments come in two basic forms: self-report tests and performance-based tests. **Self-report tests** can be obtained in either paper-pencil or computer formats, and are quick and easy to administer and score. They require readers to rate their preference for statements that describe conditions, situations, and study/learning approaches with which they are most comfortable (e.g., I study best alone; I learn more from listening; I like to study with background noise). For low readers or individuals who have had limited or unsuccessful learning experiences, self-report instruments will not be particularly accurate. **Performance-based tests** require the evaluatee to engage in a series of activities that involve looking at or hearing a series or sets of letters, colors, and/or geometric patterns and recalling the information. The sets become progressively longer, and recall of a series can occur immediately after the presentation and again at the end of the test. The evaluator can assess short- and long-term memories and the level of sequencing (i.e., how many items be remembered in their correct order).

Following are examples of learning style instruments listed by self-report and performance-based formats. Self-report tests:

- CITE Learning Styles Inventory
- Learning Style Inventory (Dunn, et al.)
- Productivity Environmental Preference Survey

- TLC Learning Style Inventory (Hanson & Silver)
- Vocational Learning Styles Media Kit
- Your Style of Learning and Thinking

Performance-based tests:

- Pathfinder (formerly the Trainee Performance Sample, assesses at the trainable level)
- Learning Efficiency Test–II (LET-II)
- Perceptual Memory Task (PMT, assesses at the educable level and above)
- Personnel Tests for Industry–Oral Directions Test (PTI-ODT)

A more informal process of learning style assessment will be discussed later in the book. If a formal assessment and identification of preferred learning style are requested, or a learning problem is suspected, then an evaluator may choose to use a standardized learning style test early in the evaluation process. These results can be verified through informal observations of how well individuals follow instructions on other tests, work samples, and situational assessments. On the other hand, if during the evaluation an informal assessment uncovers a possible learning problem, standardized learning style instruments can be used to identify strengths and limitations in learning style. Appropriate accommodations in administration and instructional style can be explored during the remaining evaluation, and noted in the final staffing and report. As Leconte & Rothenbacher (1987, p. 164) put it:

"As in recommended practices for interest assessment, it is important to look beyond formal test instrument results and use observations and other informal techniques to substantiate findings. In other words, evaluators are encouraged to synthesize the results of tested, expressed, and manifested learning styles into a unique individual profile."

Temperaments and Work Values Tests/Inventories. Temperaments are "the adaptability requirements made on the worker by specific types of jobs. Temperaments became one of the components of job analysis because it was found that different job situations called for different personality traits on the part of the worker" (Dowd, 1993, p. 27). The U.S. Department of Labor (1991b) included ten factors under the heading of Temperament, such as: working alone, expressing personal feelings, dealing with people, performing repetitive work, performing under stress, performing a variety of duties.

Work values are defined as "an intrinsic value placed on a construct, internal or external, of the worker, such as creativity, independence, altruism, attitude toward and pride in work, and so on. Identified strengths in values may help in vocational exploration and/or job placement" (Dowd, 1993 p. 33). It has been argued that there is little difference between temperaments and work values, because they are both used to supplement interest information. When temperaments and work values are consistent with tested, expressed, and manifest interests, greater reliance can be placed on the vocational decision made by the consumer. However, when there are little, if any, expressed or tested interests, results from temperaments and work values inventories can be used as a starting point for career exploration. For example, the individual who states "I don't know exactly what I want to do, but I want to work by myself," may lead the evaluator to explore

jobs or environments where contact with others is minimized (e.g., night security guard, accountant, computer programmer, on-line office at home).

These self-report instruments classify the tested range of temperaments or work values from their highest to lowest ranking, or on a profile with dichotomous values/temperaments on either end of the scale (e.g., introvert to extrovert). Examples of work values and temperaments inventories include:

- Career Orientation Placement and Evaluation Survey (COPES)
- Minnesota Importance Questionnaire (MIQ)
- Myers-Briggs Type Indicator (MBTI)
- The Saliency Inventory (SI)
- The Values Scale (VS)
- Temperament and Values Inventory (TVI)
- Work Temperament Inventory (WTI)
- Work Values Inventory (WVI)

Other Tests. There is a broad range of standardized tests that cannot be classified in one of the previous eight categories but are useful to vocational evaluators. They include instruments, the Dvorine Color Vision Test (sometimes classified under aptitude) and the PDI Employment Inventory, and various standardized behavior rating scales, such as the Becker Work Adjustment Profile (BWAP), Prevocational Assessment and Curriculum Guide (PACG), Vocational Assessment and Curriculum Guide (VACG), and the AAMR Adaptive Behavior Scales—Residential and Community. Also, various emotional state, work personality, and counseling tests/inventories, such as the Eight State Questionnaire (8SQ), FIRO-B Awareness Scale, Gordon Personal Profile-Inventory, Hogan Personality Inventory—2nd Edition, Manson Evaluation—Revised (ME), Million Index of Personality Styles, Motivation Analysis Test (MAT), Occupational Stress Inventory, and the Work Personality Profile can be used when such assessments appear relevant to rehabilitation, transition, and employment.

There are far too many tests to list in this section that can provide useful information to vocational evaluators and consumers. The Rehabilitation Resource publication *Tests and Test Use in Vocational Evaluation and Assessment* (Siefker, 1996) reviews a variety of tests often used in the field. Many other books are available that give an overview of tests and measurement theory (Anastasi & Urbani, 1997; Cronbach, 1990; Drummond, 1996; Lyman, 1991), and that review tests commonly used in assessment, counseling, and human services (Kapes, Mastie, & Whitfield, 1994; Keyser & Sweetland, 1984–1994; Kramer & Conoley, 1992; Maddox, 1997). Refer to the Appendix section for a selected list of test publishers/marketers. A copy of their most current product catalogs can be requested at no charge, which gives descriptions of available tests and prices. Specimen sets are often available for review at a lower cost than complete test packages.

Not everyone can profit from psychometric testing (Power, 1991; Thomas, 1991). There are times when tests can underestimate potential and screen certain individuals or groups out of appropriate opportunities. Some of the circumstances that adversely affect testing include

memory or processing problems, motor difficulties, low-performance speed, difficulty with the English language, cultural difference, and test anxiety. For example, individuals who are clinically depressed do not process information quickly and should be given power tests (untimed tests) rather than speeded tests whenever possible. Obtaining and reporting both a timed and untimed score on a timed test would also yield meaningful information. Evaluators must determine what barriers will prevent psychometric tests from accurately assessing an individual's current potential, and make appropriate accommodations. When this is not feasible, they must choose other instruments (e.g., work samples) or techniques (e.g., situational assessment and/or OJE) that will provide a more valid assessment. As Owings (1992, p. 176) describes it:

The dichotomy is valid test scores versus valid assessments of individuals. They are not the same. Despite previous admonitions, tests can be successfully modified to obtain better information about the client—not necessarily better test scores. There is an enormous difference in the vocational usefulness of accurate information versus accurate test scores. If the test is inappropriate for the client, correct use of it will produce valid scores but not necessarily information that will be useful in predicting job success.

Work Samples and Systems

What are Work Samples? As the name implies, a work sample is simply a "close simulation," a "mock-up," or a "sample" of work (Neff, 1985). More specifically it is:

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. There are several specific types of work samples: Cluster Trait, Job Sample, Simulated, and Single Trait (Dowd, 1993).

Hugo Munsterberg has been credited with developing the first work sample in the early 1900's (Nadolsky, 1973; Pruitt, 1986). It was a model of a streetcar used to evaluate applicants for operator positions with the Boston Railroad Company (Bregman, 1969). Considered to be one of the first attempts at personnel selection for a particular job, Munsterberg also attempted to compare scores of applicants to their performance as operators (Rosenberg, 1973).

As mentioned earlier, work samples are initially more expensive to purchase, and generally take longer to give than psychometric tests. But with these disadvantages come advantages. Since work samples take longer than many psychometric tests, they provide an opportunity to observe task-related behaviors, involve the evaluatee in hands-on career exploration and decision-making, and try out various accommodations and modifications to determine what might improve learning and performance (Kaiser & Modahl, 1991; Power, 1991; Pruitt, 1986; Thomas, 1991). Work samples can be used as situational tools to assess stamina, evaluate improvements in learning and performance over repeated trials, and engage in work adjustment to modify unacceptable work behaviors. Because they look more like work than a test, Nadolsky (1973, p. 3) found that culturally disadvantaged "clients who received vocational evaluation services viewed work samples as being less threatening than psychological tests and responded

in a positive manner to the work sampling procedures. In general, through the use of work samples, both the client and the counselor received information about the client's work behavior and vocational potential that was highly relevant and previously unavailable to them."

Types of Work Samples. A work sample is based on a job analysis, or other occupational information, and is a closer approximation of work than a psychometric test. The Vocational Evaluation and Work Adjustment Association (1975, p. 55) identified four types of work samples, which include:

- an actual job itself moved into the evaluation unit,
- a simulation of an actual operation,
- a trait sample, which assesses a single factor, such as finger dexterity, and
- a cluster trait sample, which measures a group of traits.

The "actual job" or job sample, and the "simulation" or simulated work sample have high face validity (i.e., they look similar to work activities). These are often referred to as content-based or criterion-referenced instruments. On the other hand, the "trait sample" or Single-Trait Work Sample, and the "cluster trait sample" or Cluster Trait Work Sample, are more abstract and do not readily resemble a real or simulated work activity (i.e., they look more like a test). These are referred to as construct-based or norm-referenced instruments.

Training assessment samples are similar to work samples and are used to assess the potential for training in an area where formal preparation is required. Someone cannot be employed as a Registered Nurse, for example, without completing training and becoming registered. Since it is not feasible to develop a nursing work sample, a two-phase approach would be warranted—a cognitive and a performance evaluation. The first phase (the cognitive evaluation) would require an assessment of the mental and academic abilities needed for nursing (e.g., verbal and mathematical achievement or aptitude) and an ability and interest in using the common language of the chosen professional field; in this case, medical terminology. Having an evaluatee read the first chapter of a medical terminology text and take a written test to assess retention and application would help both consumer and evaluator explore interest and potential.

The second phase, the performance evaluation, would require that a series (or cluster) of tests, work samples (e.g., a vital signs work sample), and/or situational assessments (e.g., reading and completing medical charts, making a bed) be used to assess the performance aspects of a nursing job. If an individual does not currently have the potential (or motivation) to master medical terminology and succeed in a rigorous educational program but demonstrates interest and potential during the performance phase, then an entry-level job or on-the-job training as a nurse aide might be considered. In relation to long-range career development, it could be recommended that the consumer pursue training, possibly as a licensed practical nurse at a local community college or training hospital, following a year or two of successful employment as a nurse aide. This allows additional time to become familiar with medical terminology and procedure and decide if there is sufficient interest and motivation to seek further career training. If interest and potential surface during the cognitive phase but not the performance phase, other medically related jobs could be explored with the consumer.

A training assessment sample can be created by standardizing the medical terminology activity and choosing an appropriate cluster of related cognitive and performance instruments and techniques. Training assessment samples can be developed to cover terminology in electronics, computer programming, accounting, engineering, psychology, or other technical and professional fields. More applied activities, such as using terminology in case studies or problem-solving exercises (e.g., a lab experiment, reading a technical graph or schematic), should also be incorporated into training assessment.

Basic skills samples are commonly used to assess functional skills essential to independent living, training, and working. These include, but are not limited to, telling and using time (e.g., clocks, calendars, bus schedules, appointment schedules), money handling (e.g., making change, budgeting, writing checks), recognizing signs and survival words, using maps, reading dials and gauges (e.g., stoves, washing machines, automobiles), measuring (e.g., linear, volume, weights), and using the telephone and telephone book. Many evaluators design their own assessment devices or purchase standardized basic skills instruments, such as the Street Survival Skills Questionnaire (SSSQ), and the Social and Prevocational Information Battery (SPIB), described in the previous section on psychometric tests. If locally developed basic skills samples are not normed, then they are classified as situational assessment activities.

Work Sample Development and Standardization. A work sample can represent an entire job, or one or several tasks of a job (or course). A card filing work sample may be designed to assess the skills needed for a file clerk position, or it can assess one of the skills (i.e., card filing) required of a secretary or clerk-typist. It may not be feasible to include all tasks of an elaborate job into a single work sample; therefore, a combination (or cluster) of instruments and techniques will be needed to assess all essential job duties. There are also compounding factors that limit the broad application of a work sample to identical jobs in the same or different work environments. All jobs with the same title: (a) do not possess the same job duties, (b) do not place corresponding value to the same duties, and/or (c) do not use the same technology on similar duties in different environments.

For example, there are three general performance criteria for the job of a cashier (or cash register operator): speed, accuracy, and use of technology. A high volume of customers often requires cashiers in a grocery store to work faster than cashiers in a small specialty store where volume is not as great, and where other tasks (e.g., waiting on customers, stocking shelves) are equally important. Cashiers in all environments are required to accurately operate the cash register and make change; however, the medium of exchange differs. In grocery stores, just about any medium of exchange (just short of bartering) is used, including cash, checks, credit and debit cards, coupons, and food stamps. On the other hand, some small stores and restaurants will only accept cash and credit cards, but no checks.

Technology also varies greatly. Cash registers in some fast food restaurants only require the operator to press keys that correspond to the item ordered (e.g., large drink key, small French fries key, cheeseburger key), and the tax is automatically totaled with the sale. Scanners and bar code readers on many new cash registers have made entering correct prices easier. Some cash registers in department store chains are similar to computer terminals and require a variety of

codes to be entered (e.g., sales clerk number, item inventory number) before a sale can be made. Cash register technology will continue to improve to the point where the job of a cashier may become obsolete. If one were to develop norms for and validate a cashier work sample, what job, criteria, and technology would be used? This dilemma in standardization not only affects vocational evaluation but training as well, and the use of work samples to generalize performance to a variety of different work environments calls for skill and caution on the part of the evaluator.

In order to evaluate the ability to succeed in a particular job or course, the evaluator must analyze the job tasks or classroom activities and select instruments and techniques that relate to the tasks/activities in question. Again using the example of a cashier, an evaluator must first know what the job entails. This can be accomplished through the review of a local job analysis (e.g., grocery store cashier) or a more general job description available in occupational information documents, such as the *Dictionary of Occupational Titles* (DOT; U.S. Department of Labor, 1991a). From there, instruments and techniques can be chosen to assess the "objective" functions (e.g., machine operation, manual dexterity, money handling) and the "subjective" functions (e.g., communication and interaction skills, standing, reaching, and lifting).

The best way to evaluate for potential as a cashier is through a supervised community-based assessment (on-the-job evaluation). However, when such opportunities are not feasible, cash register operation and change-making work samples can be used. They provide relatively high content orientation and face value (i.e., close relationship to the job) for improved career exploration, decision-making, and modification/accommodation purposes. As a final consideration, a variety of construct-oriented instruments can be clustered together, such as a clerical aptitude test that measures speed and accuracy in matching letters and numbers, a manual dexterity test to assess the ability to manipulate a keyboard, and a math test to evaluate change-making. The latter method lacks realism and provides less content match, requiring more subjective judgments on the part of the evaluator and evaluatee. Therefore, mixing content and construct instruments (e.g., an adding machine operation work sample, a change-making basic skills instrument, and a clerical matching aptitude test) would offer the best of both approaches. Developing a cluster of instruments and techniques around a job or course will ensure that all essential tasks and performance areas are covered. A single work sample or test cannot assess all of the aptitudes, physical demands, temperaments, behaviors, communication needs, social requirements, and environmental conditions of a particular job (Power, 1991). Clustering of appropriate instruments and techniques that can address these varied issues is essential.

In situations where all of the essential job tasks or course activities cannot be assessed, the evaluator will need to focus attention on key essential tasks. Three essential tasks must be considered: (a) the most time-consuming task, (b) the most difficult task, and (c) the most important task ("Americans with Disabilities Act of 1990," 1991b; Connolly, 1975; U.S. Department of Labor, 1991b). If these three areas can be addressed in the evaluation, there is a high likelihood of accurately assessing potential in individuals who have the ability to generalize skills or learning style. There may be more than one essential task that shares the same characteristic (e.g., they are both considered the most time consuming). Likewise, there may be a task that has more than one characteristic (e.g., it is the most important and the most difficult).

Similar to psychometric tests, work samples are standardized. Work samples should have industrial norms or standards for comparison to employee or applicant populations (Botterbusch, 1981; CARF, 1996; McCray, 1980; McFarlane et al., 1988; Power, 1991; Stout Vocational Rehabilitation Institute, 1977). Although disability norms in and of themselves provide little opportunity for comparison to working populations, employed client norms can be highly useful (Berven & Maki, 1982). Industrial standards in the form of predetermined time standards are available on some work samples and systems (Hume, 1973; Shinnick, Black, & Decker, 1983; Vactor & Hubach, 1979). Two predetermined time methods used to standardize work samples are Methods-Time-Measurement (MTM, MTM2, MTM3) and MODAPTS (MODular Arranged Predetermined Time Standards).

These and many other predetermined time techniques were originally developed by industrial engineers to determine the most cost-effective way to assemble and package a product on a work line. Ergonomic principles and body mechanics are used to determine how long it takes the "average" worker to perform a series of movements on a specific industrial or office job. Once a series of movements is identified for a task, their predetermined, or standard, times are added together to determine how long it takes to perform each work task and the total job. This information is then used to set production quotas and determine labor costs. Percentile scores on tests and predetermined time percentages are different. When the norm table of a standardized test is used, the 99th to 100th percentile represents optimum performance on the test items. With a predetermined time standard, 100% Standard or 100% IN (Industrial Normal) refers to the performance needed by a competitive worker to meet the expected production quota. Predetermined percentages can range well above 100% (e.g., 150%).

When standardized work samples are used as designed, they can yield pertinent information on current functioning. However when used prognostically, they can evaluate improvement in performance that is only available through a dynamic assessment. If the standardized approach does not initially result in a positive outcome, evaluators should determine what affected performance and make appropriate modifications/accommodations to overcome the problem in subsequent administrations. The evaluator must never forget that it does not matter as much how an individual "scored" on a work sample, but rather what the person got right and wrong and how performance could be improved if the sample was administered again. Criterion-referenced rather than norm-referenced assessment is the "key" to a creative, flexible, and successful work sample-based evaluation. If modifications or accommodations serve to improve performance, then recommendations for similar changes on the job or in the classroom can be made. If performance does not improve on a work sample as a result of the prognostic approach, then other work samples or instruments should be selected and used.

Commercial Work Sample and Evaluation Systems. Vocational evaluators can develop and standardize their work samples (Botterbusch, 1981; McCray, 1980; Stout Vocational Rehabilitation Institute, 1977), or purchase commercially available work samples and evaluation systems (Brown et al., 1994; McFarlane et al., 1988). The first work sample systems developed specifically for use in vocational/work evaluation were the TOWER and JEVS work sample systems (Pruitt, 1986; Rosenberg, 1973). The TOWER (Testing, Orientation, and Work Evaluation in Rehabilitation) system began development in the 1930s at the Institute for the

Crippled and Disabled (now the International Center for the Disabled). In 1958, the Philadelphia Jewish Employment and Vocational Service began work on the JEVS work sample system. Due to the limited training available for evaluators, the TOWER and JEVS systems provided training for purchasers of their system. This training focused on all aspects of the evaluation process, including interviewing, administration, behavioral observation, scoring, interpreting results, and report writing. TOWER and JEVS were selling more than a well-organized collection of work samples, but a process of evaluation as well.

Another early system, the THOMASAT, was developed by the Highland View Hospital in Cleveland to evaluate the cognitive-motor functioning of individuals for jobs performed in a sheltered workshop (Rosenberg, 1973). The TOWER, JEVS, and THOMASAT incorporated a variety of work samples or activities to evaluate a wide range of tasks and job functions. Although these three systems are no longer being marketed, they were originally developed to evaluate and predict job placement and success of adults with disabilities and disadvantaged youth. One of the earliest single work samples still available, the Pennsylvania Bi-Manual Work Sample, was developed by the McDonald Training Center in Florida (Pruitt, 1986). Today there are approximately 18 work sample and evaluation systems commercially available (Brown et al., 1994).

Commercially available **work sample systems** and **evaluation systems** are composed of a group of individually designed and standardized work samples, tests or activities that share the same developmental philosophy and norm groups. They also share similar methods of administration, scoring, and interpretation. This "universality" allows for the comparison of the results of all instruments within the system or battery. This type of comparison is more difficult with independent tests and work samples developed with different philosophies, norm groups, and approaches to scoring and interpretation. Universality carries over to both work sample systems and evaluation systems; however, there is a difference between the two.

Work sample systems (also referred to as work sample batteries) are composed of standardized instruments that resemble work or work-related activities. Therefore, they have high face value and content orientation, which readily lend themselves to both norm-referenced and criterion-referenced interpretations. Activities, such as card filing, message taking, proofing/editing, adding machine operation, data entry, sorting, assembly, tool usage, electrical wiring, and sewing machine operation, are often found in many work sample systems. Since they look like work, evaluatees relate to them more as a work activity rather than a test. Thus testing anxiety is reduced and the consumer is more motivated to participate (Pruitt, 1986). On work samples lasting more than 20 minutes, work-related behaviors can be observed, and job-related modifications attempted. Examples of some commonly used work sample systems (or work sample batteries) include Micro-TOWER, Skills Assessment Module (SAM), System for Assessment and Group Evaluation (SAGE), Talent Assessment Program (TAP), VALPAR Component Assessment Systems, Vocational Evaluation Systems (VES), Vocational Information and Evaluation Work Samples (VIEWS), and the Vocational Interest Temperament Aptitude System (VITAS). These and related systems/batteries represent the oldest and most traditional approach to vocational evaluation.

Some commercial work sample systems must be purchased in their entirety, and it is recommended that all instruments in the system be administered to provide the most comprehensive interpretation possible. With other systems, the evaluator can buy one or several work samples and use them independently or in combination with other evaluation instruments. Most all of these systems either require training for purchase (depending on the skill of the evaluator) or offer it as an option. Similar to the original TOWER system, the SAVE (Systematic Approach to Vocational Evaluation) system is sold as an evaluation manual that contains all forms and information for building, administering, and scoring the work samples listed in the manual. The evaluator purchases the materials and supplies locally that are needed to build all or selected work samples from the manual.

Work samples within a system may take anywhere from ten to 45 minutes to administer. Total battery administration may last from a half-day to nearly a week, depending on the length and number of work samples in the system (batteries can have anywhere from ten to 28 individual work samples). For 1:1 ratios, a participant can take all or parts of a system depending on individual needs and the types of referral question(s). With higher ratios, they can be administered two different ways. The first is a group administration where everyone in the group takes the same instrument at the same time. This requires that the evaluator has as many systems as there are people in the group (e.g., three systems for a 3:1 ratio). One administration can be given to the entire group for each work sample, followed by a group discussion of their results and interests in the sample just taken.

In the second method, two or more individuals are placed on different work samples in a battery at the same time. Over the course of the evaluation, all participants may eventually take the same work samples but at different times. Most systems do not have a set order in which work samples must be administered. This is up to the discretion of the evaluator and the availability of the instrument.

Evaluation systems are composed of a series of standardized tests or activities that are more abstract than work samples. These construct-oriented instruments generally use a norm-referenced approach and result in percentile scores or occupational codes (e.g., aptitude codes). Terms, such as abstract reasoning, verbal ability, numerical ability, visual tracking, finger dexterity, manual dexterity, hand strength, eye-hand-foot coordination, spatial relations, and form perception are often used to describe the instruments contained in most evaluation systems. Examples of some evaluation systems include APTICOM, Career Evaluation Systems (CES), Career SCOPE, Hester Vocational Evaluation System (MVE), Key Educational Vocational Assessment System (KEVAS), McCarron-Dial Evaluation System (MDS), and Vocational Transit. Although the Computerized Assessment (COMPASS) is classified here as an evaluation system, it uses a criterion-referenced rather than a norm-referenced approach to scoring. Some of the systems look very much like a computerized aptitude test battery and can be used successfully with moderate to higher functioning individuals.

These newer-generation evaluation systems are usually sold as a package (individual instruments are not sold separately). Most of them take a day or less to administer, and several only take a few hours. Training is either required or optional, depending on availability and evaluator need. Although many work sample systems use a computer for scoring and report

writing, nearly all of the evaluation systems require a computer for administration, scoring, and report writing. Some evaluation systems may not have high face value to work or be as easy to modify as work samples (except Vocational Transit); however, they are generally quicker to administer and score. Some evaluators use the shorter evaluation systems as a tool for deciding if a work sample evaluation would be beneficial, and what instruments should be administered.

Not all batteries, or instruments within batteries, can be easily classified as a work sample system or evaluation system. Some individual instruments and batteries fall somewhere in the middle ground of the continuum. Discretion must be used in choosing appropriate instruments to ensure that they do not intentionally screen individuals out, but at the same time, are not so easy that they insult the intelligence of the participant and underestimate potential. In addition, these systems have good standardization, and many report a variety of norm groups, reliability, and validity studies.

Review of Commercial Systems

The publication *Vocational Evaluation Systems and Software: A Consumer's Guide* (Brown et al., 1994) provides a description of nearly all of the commercial work sample and evaluation systems on the market today. It is available from The Rehabilitation Resource listed in the *Resources* section of this book. Although the Brown et al. (1994) publication does not list the more recent CareerScope and the Wide Range Employability Sample Test (WREST) that was reviewed is no longer being marketed, this publication is an excellent starting point for narrowing down evaluation and work sample systems to be considered. The publication also contains a section on how to assess and choose a system. Some of these considerations include: (a) purpose of the system, (b) populations for which the system was developed, (c) administration method (to groups or individuals), (d) cost to purchase and maintain, (e) space needed to house the system, (f) time needed to administer the system, (g) scoring and interpretive strategies, and (h) availability of training and support. It also reviews 12 commercially available job search software systems frequently used by vocational evaluators. Following is a brief review of commercial evaluation and work sample systems (including the CareerScope) abstracted from the Brown et al. (1994) publication. These descriptions are by no means comprehensive, and the developers should be contacted directly for additional information on each system.

APTICOM. A computer-driven, hardware-oriented evaluation system consisting of ten aptitude tests, one interest inventory with 12 interest areas, and several language and math skills tests. The entire battery can be completed in under 2 hours.

Vocational Research Institute
1528 Walnut Street, Suite 1502
Philadelphia, PA 19102-3619
800-874-5387 or 215-875-7387

Career Evaluation Systems (CES). Three separate computer systems that score batteries of standardized tests include: (a) CareerView for average or above average persons with no physical impairments seeking career guidance (190 minutes), (b) VocScan for individuals with physical disabilities (250 minutes) and low reading levels (200 minutes), and (c) JobSupport for individuals who are mentally retarded (200 minutes).

Career Evaluation Systems, Inc.
6050 West Touhy
Chicago, IL 60648
312-774-1212

CareerScope. A software-based alternative to the APTICOM that uses a standard computer for administration and scoring of an aptitude and interest inventory. Both aptitude and interest components can be completed in under 2 hours.

Vocational Research Institute
1528 Walnut Street, Suite 1502
Philadelphia, PA 19102-3619
800-874-5387 or 215-875-7387

Computerized Assessment (COMPASS). A battery of 12 computer-based subtests, three work samples, and two surveys that yield 17-factor scores related to 11 aptitudes, as well as to reasoning, math, and language. The system can be administered in about 70 minutes.

VALPAR International Corporation
P.O. Box 5767
Tucson, AZ 85703-5767
800-528-7070 or 602-293-1510

Hester Vocational Evaluation System (MVE). The system is composed of eight apparatus-type and nine standardized paper-and-pencil tests that result in 19 ability factors and 17 personal characteristics. The administration time is approximately 3.5 hours.

Hester Evaluation Systems, Inc.
2410 Southwest Granthurst
Topeka, KS 66611-1274
800-832-3825 or 913-357-0362

Key Educational Vocational Assessment System (KEVAS). A computer-assisted system supplemented with performance-based hardware and standardized paper-and-pencil tests. Twenty-two areas of functioning are measured under three categories: psychophysical functioning, work-related competencies, and social and motivational functioning. A total of 3.5 hours is required for administration.

Key Evaluation, Inc.
673 Broad Street
Shrewbury, NJ 07702
201-747-0048 or 800-25-KEVAS (outside NJ)

McCarron-Dial Evaluation System (MDS). A series performance-based, standardized tests (including a paper-and-pencil test, and a behavior rating scale and inventory) designed to assess five factors within the three basic dimensions of verbal-spatial-cognitive, sensorimotor, and emotional coping. The basic battery takes around three hours while the comprehensive battery requires up to five days, including 10 hours for behavioral observations.

McCarron-Dial Systems, Inc.
P.O. Box 45628

Dallas, TX 75245
214-247-5945

Microcomputer Evaluation of Career Areas (MECA). Composed of 15 microcomputer, work-oriented career exploration and assessment kits (e.g., automotive, business and office, health care, manufacturing). Each kit takes approximately 30 minutes to administer through the computer and simulated work activity.

Conover Company
P.O. Box 155
Omro, WI 54963
800-933-1933

Micro-TOWER. Consists of 13 self-contained, group-administered work samples under the five aptitude clusters of verbal, motor, numerical, spatial, and clerical perception. The administration time for all work samples is between 14.5 and 25 hours, including time for breaks and group discussions.

Micro-TOWER
ICD Rehabilitation & Research Center
340 East 24th Street
New York, NY 10010

Skills Assessment Module (SAM). Assesses 25 affective, cognitive, and psychomotor abilities using three paper-pencil tests and 12 hands-on work samples. The battery can be administered in 2.5 to 3.5 hours.

Piney Mountain Press, Inc.
P.O. Box 333
Cleveland, GA 30528
800-255-3127

System for Assessment and Group Evaluation (SAGE). The battery contains 17 test instruments and work samples consisting of five components: Vocational Assessment Battery of 11 aptitudes, Cognitive-Conceptual Abilities Test of general educational development, Vocational Interest Inventory, Assessment of Work Attitudes, and Temperament Factor Assessment. The total administration time is 4 to 5 hours.

Train-Ease Corporation
PESCO
21 Paulding Street
Pleasantville, NY 10570
800-431-2016

Systematic Approach to Vocational Evaluation (SAVE). Package A assesses 16 worker trait groups (for the mentally retarded and academically deprived) and Package B expands the assessed worker trait groups to 46, for broader use. A manual is sold with no equipment but with information on building 47 work samples. The entire battery takes 15 to 20 hours to administer.

SAVE Enterprises

16 Downing Street
Rome, GA 30161
706-295-6407

Talent Assessment Program (TAP). Composed of 10 performance-based tests and activities grouped into three categories: Visualization and Retention; Discrimination; and, Dexterity. The administration time is 2.5 hours or less.

Talent Assessment, Inc.
P.O. Box 5087
Jacksonville, FL 32247
904-260-4102

VALPAR Component Assessment Systems. Contains 19 separate work samples and activities covering areas, such as small tools use, clerical comprehension, problem-solving, assembly, sorting, range of motion, drafting, and physical capacity. The administration time is 15 to 90 minutes each, depending on the work sample.

VALPAR International Corporation
P.O. Box 5767
Tucson, AZ 85703-5767
800-528-7070 or 602-293-1510

Vocational Evaluation Systems (VES). It contains 28 separate, audio-visually administered, work sample carrels. Examples include bench assembly, drafting, electrical wiring, sales processing, cooking/baking, engine service, cosmetology, and office services. Approximately 2.5 hours are required for each work sample.

New Concepts Corporation
2341 South Friebus Avenue, Suite #5
Tucson, AZ 85713
800-828-7876 or 602-323-6645

Vocational Information and Evaluation Work Samples (VIEWS). It consists of 16 work samples grouped into the four lowest worker skill groups: Materials Sorting, Clerical Matching and Counting, and Assembling; Machine Feeding; Routine Tending; and, Fabricating. The battery is designed for the mentally retarded and takes between 15 and 20 hours to administer.

Vocational Research Institute
1528 Walnut Street, Suite 1502
Philadelphia, PA 19102-3619
800-874-5387 or 215-875-7387

Vocational Interest Temperament Aptitude System (VITAS). It contains 21 work samples related to work groups from the DOL's Guide to Occupational Exploration. The battery is designed for the educationally and/or culturally disadvantaged and takes approximately 15 hours to administer.

Vocational Research Institute
1528 Walnut Street, Suite 1502

Philadelphia, PA 19102-3619
800-874-5387 or 215-875-7387

Vocational Transit. This computer-based evaluation system consists of four electronic test modules that assess the lowest level of General Educational Development, and the four aptitudes of motor coordination, manual dexterity, finger dexterity, and form perception. It is designed to evaluate low functioning individuals in around 90 minutes.

Vocational Research Institute
1528 Walnut Street, Suite 1502
Philadelphia, PA 19102-3619
800-874-5387 or 215-875-7387

Most of these work sample and evaluation systems are both norm-referenced and criterion-referenced. The majority is related to the Department of Labor's occupational coding and classification systems created for the use with the *Dictionary of Occupational Titles (4th Edition)*; (U.S. Department of Labor, 1991a), the *Revised Handbook for Analyzing Jobs* (U.S. Department of Labor, 1991b), and related publications. These include, but are not limited to, the Department of Labor's data/people/things codes, 11 aptitudes, General Educational Development (reasoning, math, and language), Physical Demands, and Temperaments. Almost all of these systems offer computer-generated profiles and/or reports, and many of the software programs are capable of printing a list of job titles with DOT codes that relate to the results of that particular battery.

Conclusion

Vocational evaluators are fortunate to have such a unique variety of tools (instruments, techniques, and strategies) at their disposal. Given the limits of the evaluation environment, deciding what instruments to purchase and use requires sensitivity and sound judgment; especially when considering the most accurate yet efficient way to meet the needs of the consumer and referral source. Evaluators must also be aware of their limits in using certain standardized tests, and routinely apply ethical guidelines when choosing, storing, administering, scoring, and interpreting any standardized instrument. The ability to use work samples and evaluation systems in lieu of or in addition to psychometric tests strengthens an evaluator's ability to creatively incorporate techniques into the evaluation experience—and to offer the most comprehensive and valid evaluation possible.

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CHAPTER SEVEN

Techniques of Evaluation

Introduction

As mentioned in the previous chapter, vocational evaluators have access to a wide variety of instruments and techniques, singularly or in combination, to meet the challenges of a diverse range of disabilities and other barriers to employment. Although they can act as "stand-alone" evaluation services, they have greater value and accuracy when used as part of a comprehensive and systematic vocational evaluation process (Botterbusch, 1978; Kell, 1989; Weinberger, 1984). The use of other instruments and techniques (e.g., interviews, functional assessment, standardized tests, work samples, behavior observation) ensures that the most appropriate situations/sites are chosen for the client given existing skills, interests, and information needs. This chapter will provide an overview of selected evaluation techniques, including functional assessment, situational assessment, community-based assessment, curriculum-based assessment, ecological/environmental assessment, behavioral observation, and transferable skills assessment.

Functional Assessment

Defining Functional Assessment. Functional assessment can be initiated almost any time during the beginning of the evaluation process. Its primary purpose is to give team members a basic overview of participant functioning in a wide range of activities and areas. Crewe and Athelstan (1984, p. 3) state, "In simplest terms, functional assessment is a systematic enumeration of vocationally relevant strengths and limitations." Halpern and Fuhrer (1984, p. 3) write that "Functional assessment is the measurement of purposeful behavior in interaction with the environment, which is interpreted according to the assessment's intended uses." The main feature that separates functional assessment from other rating approaches is the use of descriptive statements. For example, rather than using a below average-to-above average rating scale to describe functioning in the area of "making change," the following statements can be substituted, with one being chosen that best represents an individual's ability:

1. Cannot make change at all.
2. Can make change up to \$1.00.
3. Can make change up to \$5.00.
4. Can make change up to \$20.00.
5. Can make change beyond \$20.00.

Some functional assessment instruments may instead use the same Likert-type scale to rate all functional activities. For example, a uniform scale may read as follows:

1. The ability to perform the activity is unknown.
2. Cannot perform the activity even with support.
3. Can perform the activity with constant support.
4. Can perform the activity with occasional support/follow-up.

5. Can perform the activity without support/follow-up.

In these situations, the functional statements must be very task specific (e.g., can correctly use a screwdriver; can add and subtract whole numbers with a calculator), rather than general (e.g., can use tools; can use a calculator).

Functional vocational assessment can be accomplished through file review, during counseling or interviewing (consumer, family, employers, teachers, other professionals/staff), and through behavioral observation at home, in the evaluation unit, in the classroom, and at the work site. The evaluator may wish to start filling in the functional assessment form during file review or at the initial staffing, if held. Questions left unanswered can be addressed during the interview(s) or throughout the remaining evaluation process. The form can help direct the assessment and indicate when a more thorough evaluation is needed to answer specific questions.

Functional Assessment Rating Forms

There is a variety of different functional assessment processes and forms commercially available. Some evaluators have developed their own forms or modified existing ones to meet their specific needs. Whatever approach is used, it must be comprehensive and functional. Two such forms/procedures are the Functional Assessment Inventory (FAI) (Crewe & Athelstan, 1984), and the Consumer Profile Form (CPF) (Brooke, Inge, Armstrong, & Wehman, 1997). Although both forms are designed to do relatively the same thing, their subtle differences make them particularly useful for different populations. Table 1 lists the various categories contained on each form.

Table 1

A Comparison of Functional Assessment Inventories and Consumer Abilities

Functional Assessment Inventories	Consumer Abilities
1. Ability to Learn	1. Availability
2. Ability to Read and Write in English	2. Transportation
3. Memory	3. Strength–Lifting and Carrying
4. Spatial and Form Perceptions	4. Endurance (without breaks)
5. Vision	5. Orienting
6. Hearing	6. Physical Mobility
7. Speech	7. Independent Work Rate (no prompts)
8. Language Functioning	8. Appearance
9. Upper Extremity Functioning	9. Communication
10. Hand Functioning	10. Appropriate Social Interactions
11. Motor Speed	11. Unusual Behavior
12. Ambulation or Mobility	12. Attention to Task/Perseverance

13. Capacity for Exertion	13. Independent Sequencing of Job Duties
14. Endurance	14. Initiative/Motivation
15. Loss of Time from Work	15. Adapting to Change
16. Stability of Condition	16. Reinforcement of Needs
17. Work History	17. Family Supports
18. Acceptability to Employers	18. Financial Situations
19. Personal Attractiveness	19. Discrimination Skills
20. Skills	20. Time Awareness
21. Economic Disincentives	21. Functional Reading
22. Access to Job Opportunities	22. Functional Math
23. Requirements for Special Working Conditions	23. Independent Street Crossing
24. Work Habits	24. Handling Criticism/Stress
25. Social Support Systems	25. Acts/Speaks Aggressively
26. Accurate Perception of Capabilities and Limitations	26. Travel Skills
27. Effective Interaction with Employers and Co-workers	27. Benefits Consumer Needs
28. Judgments	(a) None
29. Congruence of Behavior with Rehabilitation Goals	(b) Sick Leave
30. Initiative and Problem-Solving Abilities	(c) Medical/Health Benefits
	(d) Paid Vacation/Annual Leave
	(e) Dental Benefits
	(f) Employee Discounts
	(g) Free/Reduced Meals
	(h) Other

The CPF is designed to be used with severely disabled individuals who could profit from supported employment services. It contains rating categories related to work availability (e.g., will work weekends, evenings, part-time, full-time), accessible methods of transportation, and other factors that are critical to supported employment placement. It has a companion Job Analysis Form that is used to conduct a "functional" job analysis on a particular position. CPF ratings on consumers can be directly compared to the "functional" requirements of the job to determine who is currently the best employment/training candidate and what specific limitations that would affect job performance need correction or accommodation. This is a highly useful technique for evaluating a participant's ability to be employed in a particular job since it incorporates a functional job analysis as part of the overall assessment process. Most all functional assessment forms can, and should, be adapted and used for job analysis when considering placement in a particular job or choosing appropriate OJE sites. In addition, functional assessment forms should also be modified to meet the specific needs of the populations being served. For example, the Supported Employment Technical Assistance Project (1989) at Michigan State University modified the 1986 version of the CPF to create the

Employment Screening Form-Revised for Persons with TBI. This 33-item form more accurately addresses the functional skills and deficits of persons with head injury than does the CPF.

The FAI uses two different forms that permit (a) ratings by the professional (known as the Functional Assessment Inventory) and (b) self-ratings by the consumer (referred to as the Personal Capacities Questionnaire or PCQ). Although both forms have the same questions, the wording on the PCQ has been simplified and converted to the first person to make reading and self-rating easier. In situations where consumers are unable to read or understand the questions, their families can assist them in completing the PCQ. Family perception and attitude concerning the consumer's level of functioning can also be determined through the completion of a separate PCQ. If the evaluator does not have time to use the FAI, then the PCQ can be used in its place. Although no research has been conducted on the accuracy of consumer self-ratings using the PCQ, or on comparing ratings from the FAI to the PCQ, it should give the evaluator some sense of what the consumer and/or family perceives as being functional strengths and limitations. If these differ from the evaluator's ratings of the participant on the FAI, reasons for the discrepancies can be explored.

In situations where the PCQ is to be completed by consumers and/or their families, it could be mailed to them with the acceptance and scheduling letter with a request to fill out the form the form and return it on the first day of evaluation. The evaluator can then find out who completed the form and ask the participant to explain various responses. Portions of forms that can be accurately completed by an employer, teacher, or other professional not directly involved in the vocational evaluation can be mailed to that person for completion. The form can also be completed by the evaluator or other team members during the file review, staffing, and/or the intake interview. The FAI and PCQ can serve as a systematic guide in the prevocational and vocational evaluation processes. Ideally, comparing consumer (or family) self-ratings to those made by the evaluation team will allow for the identification of rating discrepancies and the consideration of possible reasons for their existence. This is an especially important issue in situations with a lack of awareness or acceptance of the disability, and resulting problems, by the individual and/or family. Before problems can be successfully rectified, all persons involved must be willing to recognize the problems and agree to deal with them.

An important part of a functional assessment with injured workers, typically not addressed in rating forms, is pre-injury and post-injury functioning. Rather than merely checking the appropriate statement, codes representing pre-injury and post-injury functioning can provide the evaluator with useful information on what skills have been affected and may need improvement or accommodation to return to previous employment. Consumers or staff could be asked to place a "B" in front of the statement that represents ability before the injury, and an "A" in front of the statement that best represents ability after the injury. For example, for the item "Independent Sequencing of Job Duties" on the CPF, the "B" rating might be placed next the statement "Performs seven or more tasks in sequence," and the "A" rating might be placed next to "Performs two to three tasks in sequence." In this case, it is easy to see just how much an individual has lost and must regain (or have accommodated) to return to pre-injury functioning levels.

The FAI is available from The Rehabilitation Resource, and the CPF is contained in the publication, *Supported Employment Handbook: A Customer-Driven Approach for Persons with Significant Disabilities*, which is available from the Rehabilitation Research and Training Center in Supported Employment. Also available from The Rehabilitation Resource is the publication, *Goodness of Fit: A Guide to Conducting and Using Functional Vocational Assessments* (Wheeler, 1996). Refer to the resource section of this publication for their addresses and telephone numbers. Following is a sample of additional functional assessment rating forms and processes.

- Transition Planning Inventory (pro-ed)
- Transition to Work (TWI) Inventory (The Psychological Corporation)
- Vocational Integration Index (pro-ed)

Many behavioral and performance rating scales such as the PACG, the VACG, and the Becker Work Adjustment Profile, listed in the section *Review of Standardized Tests* (under "Other Tests"), can also be used as functional assessment instruments.

Situational Assessment

Definition and Purpose. The *Glossary of Terminology for Vocational Assessment, Evaluation and Work Adjustment* (Dowd, 1993, p. 25), defines situational assessment as:

The systematic observation process for evaluating work-related behaviors in a controlled or semi-controlled work environment. Although any type of task or situation may be used, real work is most often used in order to add relevance. The element distinguishing situational assessment from other types of assessment is the capability of systematically varying demands in order to evaluate work-related behaviors (e.g., social skills, quantity of work, and use of materials).

Historically, situational assessment can be traced back to the Old Testament, Hippocrates, the industrial revolution, and World War II when it was used to screen individuals for underground activities overseas (Neff, 1985; Pruitt, 1986). Around the mid-1950s, a situational assessment was used in the subcontract and prime manufacturing production settings of sheltered workshops (Neff, 1985; Pruitt, 1986; Sax & Pell, 1985; Vocational Evaluation and Work Adjustment Association, 1975). It was one of the most commonly used evaluation techniques, employed by 78% of all rehabilitation facilities (Dunn, 1973; Sankovsky, 1969). Clients within these traditional rehabilitation facility settings were paid to engage in mostly assembly, packaging, and custodial service contracts provided to the facility by local business and industry and through special federal set-aside contracts.

Today, almost any tool in vocational evaluation that is used to assess behavior as well as improvement through modification and accommodation can be called a situational assessment or situational tool. For example, when a work sample is modified, the integrity of its standardization is compromised, and the situational assessment approach must be applied. In this circumstance, the norm-referenced approach for the interpretation of results will not be as useful

as the criterion-referenced approach (Lustig & Saura, 1996). Although someone may be able to successfully perform individual tasks on structured tests and work samples, introducing an involved sequence of tasks and other elements such as noise, pressure, or unfamiliar faces into an unstructured, work-related environment may result in a very different outcome (Corthell, 1986, 1987). Placement in settings that permit the observation of a wide range of job-specific activities and behaviors will help determine how well a person with a severe disability (e.g., traumatic brain injury, chronic mental illness, or mental retardation), can handle change and cope with unexpected problems (Fewell, 1989; Musante, 1983; Weinberger, 1984).

In the past, situational assessments and on-the-job evaluations (also referred to as community-based assessment) were considered to be separate techniques. Today, however, there is very little difference between the two, and they are both frequently classified under the general term "situational assessment." CARF (1996) combined the two concepts under "situational assessment" in both definition and application. CCWAVES (1996) has classified them under the heading **Situational and community-based assessment** (refer to the previous chapter on standards). In order to provide a better understanding of the two techniques, their similarities and differences will be clarified in two separate sections. This section will address situational assessment as a technique applied primarily in the evaluation unit and on facility, hospital, and school campuses, in close proximity to the unit. The following section will cover on-the-job evaluation and address applications of the technique in actual employment sites within the community.

Dynamic Assessment. Prior to supported employment, one historical difference has been that situational assessment was considered a more "dynamic" (or prognostic) assessment technique than on-the-job evaluation (OJE). The dynamic process of situational assessment offered a controlled environment in which to explore accommodations and modifications that had a positive impact on performance and behavior; a technique now employed in community-based assessments as well.

Harris (1991, p. 142) considers that the general objective of a dynamic assessment is to modify or adjust the evaluatee's learning and subsequent performance strategies. In cases where the ability to generalize is limited (e.g., mental retardation, brain injury) or education, work, or life experiences have been restricted, finding out what a person can do after individualized instruction or accommodation would provide more useful information on what services could improve functioning. In a static assessment, evaluators are "fundamentally concerned with WHAT the evaluatee does behaviorally and in relating these 'whats' to job demands" (Harris, 1991, p. 143). Emphasis is placed on the "demonstrated competencies"—what the person can do now with no intervention during or after the evaluation. However, in reference to dynamic assessment, Harris (1991, p. 143) further states that:

Attention is being shifted towards processes and assessment methods that attempt to manipulate task variables in order to discern or control "causes" of poorer performance. In dynamic assessment we are trying to grasp the HOW of performance; to diagnose/control/correct the "breakdowns" to either correct/rehabilitate or to restructure the work environment/task in order to accommodate the "breakdown."

A situational assessment provides an excellent opportunity to conduct a dynamic (i.e., prognostic) evaluation. This same dynamic process can be used with work samples, and to a limited degree, with psychometric tests when they are used as situational techniques. Neff (1985, pp. 178–179) identified a number of questions that can be answered through a flexible, well-supervised situational assessment:

- Can the potential worker work at all?
- Can he conform to customary work roles?
- Can he take supervision?
- Can he get along with co-workers?
- Can he handle an ordinary working day?
- How does he respond to demands to increase his productivity or improve his quality?
- Does he work better alone or in the presence of others?
- Under what kind of supervision does he work most effectively?
- Does he get so preoccupied with quality that he cannot produce at acceptable rates, or does he try to work so fast that his quality suffers?
- What are his strengths and weaknesses as a worker?

There are several important advantages to using situational assessments (and community-based assessments) for consumers with severe disabilities (Botterbusch, 1978; Fewell, 1989; Kell, 1989; Weinberger, 1984). They provide a controlled environment in which to explore and modify approaches to both learning and performance. They also incorporate instruction/training, adjustment/management, and modification/accommodation into the assessment to determine what works best for short-term and long-term success. As problems are encountered, various modifications can be attempted to determine if and how a correction can be accomplished. A situational assessment can also be used to assess interest and work personality (Dunn, 1973).

Length. Although situational assessments do not usually require special equipment, over and above what is required to perform the job skill being assessed, they are rather lengthy (one-half day to six weeks). Peters, Koller, and Loyd (1995) described a project in Missouri that provided two-week situational assessments to students with specific learning disabilities, to evaluate functional and social skills needed for school, work, and social settings. Situational assessments within community rehabilitation programs (rehabilitation facilities) are the longest form of in-house evaluation because they rely on the use of production, service, and training areas within the facility as the environment for the assessment. For example, a rehabilitation facility in Michigan used its 12-week training program to provide most of the situational assessments (Vohlken, 1987).

Fewell (1989) described a situational assessment program in a rehabilitation hospital in North Carolina for individuals with traumatic brain injury (TBI). The evaluation unit, the volunteer program, and regular work sites within the hospital, as well as previous work sites of the consumer were used to conduct situational assessments. In one case, a situational assessment lasted four hours a day, intermingled with other rehabilitation services, in three different hospital sites over six weeks. One of the goals of situational assessment was to increase self-awareness of the individual concerning personal strengths and limitations (Fewell, 1989). In a study of

vocational evaluation services in Georgia, on average, it was found that workshop/situational assessments took between seven to eight days for general disabilities, five days for sensory impaired consumers, and slightly more than 13 days for individuals with TBI (Brown, McDaniel, & King, 1995). The 13.33-day average for participants with TBI allowed for the assessment of work tolerance, stamina, and distractibility—areas of critical importance to this population.

Situational assessments conducted in local jobs are also quite lengthy and will be covered under the section on community-based assessment. One situational activity or site cannot assess an individual's full range of behavior, performance, interest, and work personality as related to the overall labor market. This is due, in part, to the limited number of work, environmental, and social experiences that can be offered by one site.

Applications and Environments. Situational assessment can be provided as part of a more comprehensive evaluation. Psychometric tests, work samples, and/or evaluation systems can be administered first to determine the specific need for situational assessment (i.e., what is an appropriate and motivating work activity, what particular areas of behavior and performance should be observed, what kind of in-house or community-based environment would be best?). On the other hand, situational assessment can also be used as a standalone technique, or as the primary evaluation tool, especially with individuals who do not perform well on standardized tests or work samples. A national survey of facilities, administrators, and practitioners involved in the assessment of individuals who are psychiatrically disabled, identified situational assessments as the number one evaluation method in CARF accredited facilities and psychosocial rehabilitation facilities (Hursh, Rogers, & Anthony, 1988). Situational assessment sites identified in this study included mechanical and industrial occupational clusters as well as clerical and service-related activities.

Situational assessment can be performed in natural work settings in the community, or in simulated settings within the vocational evaluation unit and adjacent environments (e.g., a school campus or facility grounds). When community job sites were used for situational assessment, job tryouts for industrially injured workers and individuals with traumatic brain injuries have varied from unskilled to professional and technical jobs previously held by the participants. Although community-based situational assessments vary considerably, they have often been limited to unskilled and semi-skilled jobs with consumers who have little or no work experience. Situational assessments in community rehabilitation programs and school systems have been provided in assembly and packaging work areas, custodial and food services, and in other clerical and maintenance positions throughout the building or campus that do not compromise confidentiality or safety.

In fixed evaluation units, evaluators can create situational work activities (e.g., inventory of unit supplies and equipment, filing non-sensitive material, sweeping and cleaning, and delivery). With regard to return-to-work evaluations conducted in rehabilitation hospitals and work hardening centers, a job analysis is conducted and used to create a simulation of the targeted job in the center. This job-specific situational assessment is used to help increase stamina while exploring accommodations prior to an actual job tryout. In-house situational assessments are generally supervised by vocational evaluators, teachers, or work area/facility supervisors. In the community, although vocational evaluators may provide some supervision,

situational assessments are usually provided by job coaches (employment specialists), co-workers, employers, or job site supervisors.

Two types of in-house situational assessment activities can be developed by vocational evaluators: pre-established and extemporaneous activities. In cases where specific jobs are widely available (e.g., custodian, fast food worker, dishwasher), evaluation units may have a pre-established in-house situational activity, which is routinely maintained for instances when such an assessment is needed. If the participant demonstrates interest and potential through the situational assessment, then an OJE in a similar area within the community could be considered. This is a good procedure to follow when the evaluator wants to ensure that the job site evaluation will be a reasonably positive experience for the consumer and employer.

Pre-established situational assessments can also be developed to provide a means of evaluating individuals in areas not covered by existing instruments. For example, if a unit does not possess the commercial equipment specifically designed to assess whole-body-range-of-motion skills required in most service occupations, then a situational assessment activity can be developed and maintained that fulfills this need (damp mopping a floor, wiping windows or tables, stocking shelves, etc.). In addition, since most commercial work sample systems do not contain instruments that specifically evaluate for placement in service occupations, situational assessments can be developed to focus on community job demands to meet this important local need. Regardless of the reason for their development, these more permanent forms of situational assessments should be based on a systematic analysis of available community activities and should be documented on a task-specific rating form.

The other type of in-house situational assessments does not rely on pre-developed activities but on the extemporaneous creation of tasks needed to meet the individual evaluation needs of each consumer. Given the unique differences in the functional skills and limitations of individuals with disabilities, situations can be replicated to meet specific needs. For example, to assess the extent of an orientation skill deficit in a person with a stroke or head injury, a map of the facility can be given to the participant with instructions to follow a specified route. Later, the consumer could be asked to follow the same route without the use of the map. Various instructional and memory prompting strategies could be presented to determine how the individual best learns and remembers the route.

For those consumers who are interested in returning to previous employment, situational assessment activities resembling their job tasks can be created and supplemented with other assessment instruments and strategies to identify specific abilities, needs, and accommodations/modifications. Situational assessment results that demonstrate less than competitive potential in a previous job can be used in the counseling process to help the consumer choose and accept more realistic vocational alternatives. If the situational assessment and other evaluation results indicate a potential for returning to a previous job, then an on-the-job evaluation can be conducted, incorporating the contingencies identified through the situational assessment process.

In cases where previous jobs are to be replicated in-house, an analysis of the tasks and other pertinent information (e.g., work pressures, time or quality requirements, type of

supervision) should be collected. Use of the Job Site Evaluation Rating Form (see *Appendix B*), to be discussed later in this chapter, or a similar job analysis and rating form should be considered. Although job site evaluation is the preferred method of collecting specific work-related performance information with a participant, these community-based sites are not accessible at times. In some instances, employers may not be interested in participating in an OJE of a previous worker, the consumer may feel uncomfortable being evaluated around co-workers, or the location of the business or industry may not be convenient to the evaluation unit. However if situational assessment results indicate potential, OJE can serve as excellent training and modification opportunity as well as a way of demonstrating to the employer that the person is capable of returning to work. Regardless of employment outcome, if positive feedback regarding the experience is shared with the evaluatee, it can help preserve a feeling of self-worth.

Within transition, "situational assessment can be used to collect data on students' interests, abilities, social/interpersonal skills, and accommodations/needs in school-based work sites, community-based work sites, and vocational education programs" (Sitlington, Neubert, Begun, Lombard, & Leconte, 1996, p. 87). The use of school libraries and front offices as well as tryouts and simulations in vocational classes offer excellent on-campus situational experiences.

On-the-Job Evaluation

Definition and Purpose. The *VEWAA Glossary* (Dowd, 1993, p. 21) defines on-the-job evaluation as:

A planned experience in a work situation through which the individual, under supervision, learns to perform the job tasks. It is frequently arranged between the school or rehabilitation agency and the employer with remuneration going to the employer either as full or partial reimbursement for wages paid the individual. It may or may not lead to employment.

An earlier version of the *VEWAA Glossary* (Fry & Botterbusch, 1988, p. 10) provided a slightly different definition of on-the-job evaluation:

An evaluation technique where the client performs the actual job duties in a real work situation. Performance is supervised and evaluated by the employer in coordination with evaluation staff. There are a predetermined beginning and ending date. It is not necessarily intended to result in employment.

One of the most important components of a comprehensive vocational evaluation for individuals with chronic mental illness, serious head injuries, and severe developmental disabilities is the exposure to real work offered through community-based assessment. It provides one of the best opportunities to assess a consumer's task mastery and vocational potential within the context of a multifaceted work environment. Properly applied, OJE can evaluate how individuals with severe disabilities handle and adapt to the complexities, variations, stresses, and subtleties typically found at a work site. The behavior patterns that may be present in a job setting can best be observed in a more natural work-related environment rather than a structured testing situation (Diller & Ben-Yishay, 1989).

Botterbusch (1978) systematically describes the major uses of a job site evaluation, which is outlined as follows:

1. Assessment of Work Performance (or can the client do the job)
 - General Work Skills
 - Specific Performance Potential
 - Specific Skill Testing (what skills were retained after TBI)
2. Assessment of Work Behavior (or does the client have the necessary behavioral skills)
3. Assessment of the Work Environment (or can the client take it)
 - Physical Demands
 - Environmental Conditions
 - Work Tolerance (stamina, endurance, and fatigue)
4. Assessment of the Self (or how to get clients to know themselves)
 - Orientation to Real Work
 - Vocational Interest
 - Reality Testing
5. Assessment of Job Seeking Skills (or can clients get hired on their own)

Kell (1989) listed a slightly different set of advantages of OJE that emphasized self-awareness and encouraged change and improvement. They include:

- job exploration,
- surveying personal job preferences,
- development of beneficial work habits and realistic expectations,
- development of work related social skills, and
- a chance to improve one's self-esteem.

He also quoted a statement by Weinberger (1984, p. 253) regarding the important outcomes of job site evaluation "with head injured patients:"

The evaluator was able to assess the types of specific work skills that the patient was capable of performing and devise an effective method for the patient to learn tasks while compensating for cognitive deficits. This information was invaluable when placing the patient in competitive employment.

In addition to the above uses, OJE can assess communication, socialization, and decision-making skills needed to work effectively and cooperatively with co-workers and supervisors. Self-awareness can also be increased through the performance of functional tasks in an integrated, real-world setting (Killough-Butler & Gauldin, 1995). The remainder of this section will highlight the process for developing and providing community-based assessments.

Application and Length. OJE is an excellent method for determining if an injured worker is capable of returning to a previous, or similar, job as well as identifying the specific types of modifications and accommodations needed to maintain employment. In cases where a

return to a previous job is being considered, an evaluation in the same job but at a different employment site may need to be considered, especially if the person feels uncomfortable being evaluated around co-workers and friends. However, if employment in the previous job is not realistic, then a similar (or different) job with the same employer could be considered.

Community-based assessments provided by school-to-work transition programs are generally developed and monitored by a vocational evaluator, transition specialist, job coach, or work-experience coordinator. Work experience programs have been available to special needs and vocational education students for many years and have occasionally taken on the responsibility of community-based assessment as well. Within the school-to-work transition model, sites for conducting community-based assessments are highly varied. Clark and Kolstoe (1990) recommend that home, school, community, and work environments are used since the same assessment questions can be answered in all four environments. Sitlington et al. (1996, p. 88) feel that assessments in community settings "can also be conducted in recreation sites, community sites (e.g., uses a bank facility), and simulated or real sites that require independent living skills (e.g., home economics lab, family home)." Work is not always the ultimate criterion for students who are still in school, and assessment in the diversity of areas that are typically addressed in an education or transition plan should also serve as the environments for conducting community-based and situational assessments.

Krankowski and Culbertson (1993) reviewed a case study of an individual with traumatic brain injury where the OJE lasted one week. Fry and Ruddy (1987) reported on a project called "Community-Based Time-Limited Vocational Assessments" in which consumer evaluations were not to exceed 120 hours and where the assessment activity would eventually become secondary to productivity. A job site evaluation may take several days, several weeks, or in some cases, several months, depending on the needs and functional level of the participant. Whenever possible, it should require consumer involvement for at least 20 hours a week near the end of the experience to evaluate long-term abilities and problems in a routine working situation. The longer the OJE, the more accurate and detailed the results. Fee-for-service restrictions and time limits frequently placed on evaluation services by referral sources will often dictate the maximum duration of OJE. Occasionally, duration and cost regarding OJEs can be renegotiated with the referral source. Refer to the section on Situational Assessment for more information.

Community-based assessments can serve as a stand-alone technique, especially when other evaluation instruments and techniques prove less beneficial, and when supported employment is being considered as the primary placement model. OJE can also serve as an appropriate conclusion to a comprehensive vocational evaluation process where the initial results identify a potential job(s) that can be validated through OJE (Hursh & Price, 1983). The initial evaluation process is a useful, cost-effective tool for identifying prospective jobs in the community and the accommodations that can be applied at the job site to maximize learning, performance, and behavior. This can be accomplished through the application of other evaluation techniques such as learning style assessment, basic skills assessment, work sample evaluation, and in-house situational assessment. In addition, social survival skills, such as, reasonable grooming and hygiene, verbal and behavioral appropriateness, and independent transportation skills that would impact on employment, should be assessed before OJE placement (Costello & Corthell, 1991). Through this pre-placement evaluation, time in OJE can be more efficiently used

developing and assessing interest and potential, rather than exploring options for dealing with behavior, learning, and accommodation problems. It will also ensure that both the employer/supervisor and consumer have a positive experience during community-based assessment.

Types of OJEs. Both temporary and permanent OJE sites can be developed. A temporary site is one that is chosen and tailored to the specific needs of a particular consumer. Jobs held by workers upon injury are a typical example of temporary sites that can be used for OJE. Injured workers who want to return to the position held at the time of injury can engage in an OJE in that job. This could eventually lead to employment in the same or related position with the same or different employer. Another temporary OJE site involves placement in a specific job for which the consumer has expressed an interest, and that has never been used by the evaluation service in the past. In cases where a participant has never worked before, has been out of work for an extended period, or desires employment in an area unrelated to previous employment, finding the right job may mean developing new and previously unused sites and employers. These are the hardest and most time-consuming OJE sites to develop.

Permanent sites are those that have been carefully developed with an employer and are available for repeated use. A variety of different employment sites can be acquired and maintained that ensure a broad base of opportunities for participants. Employers and consumers must be fully aware that placement in an OJE site is not a guarantee of employment, and if a participant is hired, the OJE site will remain open to other consumers. Regular contact with site employers and supervisors is important to maintaining the site. Although establishing permanent community-based assessment sites is easier and more efficient than constantly creating temporary sites, an evaluator or staff member must be assigned to developing, maintaining, and servicing the site. Since this process is so time-consuming, a staff member should be assigned full-time or part-time, depending on the number and frequency of use of the sites, as the community-based assessment coordinator.

Site Development. As discussed in the section Situational Assessment, some evaluation units are located on school, hospital, and facility campuses that allow for the use of job sites near the unit. If such on-campus opportunities are not available, units may need to rely more on community-based sites. Regardless of the site setting, Kell (1989) identifies three central processes or steps involved in any OJE program:

1. Development of the OJE site in the community,
2. Proper evaluation of the client on the job site, and
3. The maintenance of the OJE site for current and future considerations. The evaluator will need to think in terms of an on-going relationship with the employer that needs to be appropriately nurtured. The object is always the successful termination with the client—not the employer or business.

Botterbusch (1978) provided a detailed step-by-step approach to the effective development and use of on-campus and community-based job sites for assessment. Following are the recommended steps.

1. Decide where to establish OJE sites—what is needed in relation to skill level, labor market composition, and consumer population served. Developing a diverse range of job sites and locations will help to represent similar diversity in local employment opportunities.
2. Contact employers where sites could be developed. Evaluators will have their best luck contacting large and small companies that routinely hire individuals with disabilities, employ their own job coaches, and provide subcontracts to rehabilitation facilities; or where there are high turnover rates, and where the owner or executives are on rehabilitation facility/transition boards or advisory committees. Also contacting service organizations (e.g., Chamber of Commerce, Lions Club, Rotary Club, or local manufacturer and personnel organizations) to give a presentation, and using the media to feature a story on your community-based assessment program and its need for sites, may generate new opportunities.
3. Establish the job site. Set up an appointment to tour the facility and pick appropriate jobs. Conduct a job analysis, develop the evaluation process and forms, and train key evaluation or company staff in how to facilitate the OJE (depending on which staff are used). It may not be possible to conduct an OJE on an entire job, and developing a set of meaningful activities may be a good alternative. Issues regarding consumer pay, safety, liability, union involvement, and key contact persons in the company and unit must be resolved prior to placement. The evaluation staff should provide instruction of involved staff (immediate supervisors and co-workers) in how to conduct the OJE and how to work with and treat consumers who are placed at the site. Setting start dates for consumers and agreeing on the dress code and work rules for the participant must be well established. The length of the OJE (daily and overall), transportation, follow-up, reporting, and emergency issues and procedures must also be clarified for the overall OJE and each participant. The job site coordinator who is going to teach the job to the consumer should learn it first. If an in-house vocational evaluation is used prior to OJE placement, the job analysis should be used to plan a task-specific evaluation process including appropriate instruments and techniques.

Prior to placement, the evaluator must make sure the consumer is willing to participate in OJE and agrees to perform the job and tasks in question (Killough-Butler & Gauldin, 1995). In some cases, families may be reluctant to have a member participate in OJE for reasons of safety or fear of a negative experience. An assessment should be conducted with the family and significant others regarding their perceptions of the consumer's overall abilities and behaviors, their attitudes about the consumer's potential to work independently, and their level of support for the consumer working (Costello & Corthell, 1991). Families should be oriented as to the nature of and reason for the OJE placement, and be willing to provide support.

Evaluators will need to orient consumers to the site including job duties, length, transportation, the supervisor, rules and regulations, work hours, break schedule, lunch, and pay, if any. On the first day, they accompany or meet the participant at the site, provide a tour of the site, introduce the supervisor and coworkers, and teach the consumer the job. Even if someone else at the site does the orientation, training, and OJE, it would be best for the evaluator or an evaluation staff member to be present when the consumer arrives on the first day. Consider providing consumers (and their families) with a tour of the chosen site prior to OJE, especially if

there is a fear of the OJE process. If consumers do not know what they want to do, a tour of available and appropriate sites offer an opportunity for career exploration and the ability to make an informed choice of sites (especially if more than one site is used for the OJE). If tours are not feasible, pictures or videos of the sites with a brief description are good alternatives.

Deciding who will conduct the OJE is a critically important step. The traditional, in-house vocational evaluation process does not always allow for flexibility in scheduling. It is difficult to be in the unit and at an OJE site at the same time. Since they are so labor intensive, engaging in OJE will call for creativity in scheduling and transportation, and also financially in terms of billing and quotas. Therefore, if an evaluation service is going to make community-based assessment a significant component of its service delivery model there must be a full commitment to financially supporting the process, especially in hiring or reassigning staff to the task. Without such a commitment, evaluators will need to rely on situational assessments that can be provided in-house or on campus by someone else. Community-based assessment can be assigned to placement specialists, job coaches, work adjustment specialists, instructors, work supervisors, or vocational evaluation aides or technicians as long as it does not interfere with the job duties already assigned.

It is important to remember that sites should be chosen that are safe, accessible, and whose supervisors and workers are supportive or, at a minimum, accepting of the participant worker. The site should allow time for the consumer to learn and perform all tasks required in the job being performed, as opposed to engaging in "make-work" activities. The OJE should be able to assess how well the evaluatee was able to remember tasks from day to day, how many tasks and combinations of tasks could be performed, communication and interaction dynamics, physical capacities and stamina, and behavioral strengths and problems encountered. While at the job site, physical, instructional, and behavioral modifications can be attempted, discussed with the employer, supervisor, and consumer, and prescriptions outlined in the report and incorporated into future placement. Real work is the key to assessing the person holistically and ecologically.

Although job site evaluations are time-consuming and expensive, they provide information not available through less realistic means. In addition to these and other concerns, the issue of remuneration for beneficial work activity must be addressed. Department of Labor regulations governing when participants should be paid during community-based assessment are changing and are interpreted differently from office to office.

As mentioned earlier, two key ingredients must be included in the effective development and use of a job site evaluation. The first is a detailed analysis of the job site, including the tasks to be performed, order of the tasks, criteria for task mastery, behavior requirements at the work site, environmental conditions, communication and socialization needs, and availability of supervision. The second ingredient is the development of a form that can be used by the site supervisor, a co-worker, or the evaluator. The form should be based on those essential job tasks and characteristics identified in the job analysis, and provide sufficient detail to allow anyone to reliably use it. Once these two criteria have been met, then an accurate assessment can be made of the participant's abilities, behaviors, and supervisory needs as they relate to similar characteristics of the job site. Discrepancies can then be addressed through the rehabilitation,

training, and accommodation processes. A sample form and procedure are described in the following section.

Job Site Evaluation Rating Form. The Job Site Evaluation Rating Form contained in the appendix section of this publication is a modification of the Evaluation by Tasks rating form included in the Botterbusch (1978) publication *A Guide to Job Site Evaluation* (editor note: available from <https://eric.ed.gov/?id=ED186742>). The form has been revised to allow for an employer "goal" rating as well as a consumer "progress" rating so that quick comparisons can be made in participant progress toward employer expectations. This brief form is an example of a simple rating instrument that evaluators can modify and use for rating job site performance and behavior. In an attempt to minimize paperwork (a constant problem for vocational evaluators), a single form has been developed that will allow for the collection of a wide range of information by either the vocational evaluator or site supervisor. Following is an explanation of how to complete and use the different sections of the form.

There are six spaces under the Job Tasks/Critical Vocational Behaviors section in which to record the different tasks and behaviors that comprise the job identified in the Site/Location space at the top of the form. Many jobs will need only a brief statement of each task; for example, obtains push broom, dust pan, and trash can from storage room; removes furniture from room to be swept; sweeps dirt in room to doorway; sweeps dirt into dust pan and empties dirt into trash can; or returns materials to storage room. Additional pages can be used if the tasks exceed six. In situations where the consumer has difficulty following tasks, then elements of tasks can be listed instead; for example, find room at end of hall with STORAGE printed on the door; open door and turn on light; place 28-inch push broom and metal dust pan in the large red trash can with wheels; push trash can out of storage room, turn out lights, and close door; or push trashcan to the end of hall to Room 101; etc. After all tasks or elements have been enumerated, behaviors and performance characteristics that are critical to the job, and issues with the consumer can be listed; for example, grooming and dressing; communication with customers; punctuality; or ability to deal with stress.

Under the sections for *Supervision*, *Quality*, *Quantity*, and *Other* are the *Avail* (availability of employer) and *Goal* (goal of employer) categories. Using the levels listed under *Supervision Required*, the evaluator enters a corresponding number under *Avail* that represents the level of supervision available to the consumer at the job site. The *Availability* statements are described in parentheses after each *Supervision Required* statement. Each task/element and behavior description will receive an availability rating. For example, interview and work sample evaluation results indicated that Bob, our 19-year-old evaluatee with a head injury, was both interested in and capable of profiting from a job site evaluation at a fast food restaurant.

Since a site was not already available, one was carefully chosen and a job analysis performed. From this job analysis, tasks and critical vocational behaviors were listed on the form, and each task assigned a supervisory availability rating. The ratings, which were consistent with the job analysis, indicated that the *supervisor is usually available to worker* (a rating of three) for all activities performed inside the restaurant. However, when the consumer was required to take garbage to the trash container behind the building or to sweep the area outside the restaurant, a rating of four was assigned since the *supervisor is rarely available to worker*.

This meant that the participant worker did not need to meet the supervisory ratings any higher than those listed for *supervisory availability*.

Goal ratings are obtained and listed from a job analysis just like the *availability* ratings and establish job-specific goals that the consumer must reach in order to be successful on that particular job. Such ratings will differ from job to job depending on job analysis results. Since many individuals with disabilities can be easily discouraged by unrealistic or esoteric goals, actual job requirements can be entered on the form for each task and expectations shared with the participant prior to placement. Regular progress can be monitored and discussed with the individual throughout the job site evaluation to maintain interest, motivation, and self-correction. The *availability* and *goal* ratings serve as the job-specific objective, whereas the *client* ratings document progress toward the objective. Although the form allows only for three participant ratings (with rating dates entered at the top of the form), it can be modified or an additional one used when rating opportunities exceed the three spaces provided. In addition to *Supervision*, three more sections are listed on the form: *Quality*, *Quantity*, and *Other*. The *Other* section permits the rater to add a critical factor to the form that is not currently addressed. Again, the form can be modified or additional forms used if more specialized sections are needed. Room is also provided at the end of each task line for making specific comments as needed.

From an interpretive standpoint, final ratings of consumers can be compared to employer availability and goals ratings. Those employer/supervisor expectations that have not been met by the participant worker during the job site evaluation can be formulated into recommendations for instruction, modification, accommodation, or support. This is only an example of one rating form and should not be considered the sole method of evaluating job site performance. The content of the job analysis and issues pertinent to the specific disability will dictate what forms and techniques are required. As mentioned earlier, this form can also be used for rating situational assessment activities. If employer availability/goals are unknown, then this part of the form can be left blank. In addition, supported employment programs may find the form beneficial in reducing paperwork and documenting consumer progress.

Curriculum-Based Vocational Assessment

The *VEWAA Glossary* (Dowd, 1993) provides the following three definitions for curriculum-based vocational assessment (CBVA).

1. A continuous assessment process used to answer questions about the instruction and special service needs of individual students as they enter into and progress through specific vocational education programs.
2. A process to determine the career development and vocational instruction needs of students based on their ongoing preference within existing course content and curriculum; identification of students' career/vocational strengths and weaknesses for the purpose of making decisions affecting career/vocational programming and instruction.
3. The collection and use of information obtained within the context of a curriculum or intervention program; the assessment of students on the content of a curriculum (pre and post) to determine both the extent of progress of the students and the need to change or

modify the curriculum. [The assessment feeds directly into curricular or program decision-making, thus making it highly functional (Clark & Kolstoe, 1990, p. 98)].

Curriculum-Based Assessment (CBA) was originally developed as an ongoing method to assess what a student specifically learned from a curriculum, especially in academic areas such as reading, written expression, spelling, and math (Sitlington et al., 1996). It is also used today by teachers to assess the degree to which a student has mastered curriculum content in a variety of courses such as science, history and social studies, including academic proficiency in dictionary skills, study skills, and other academic survival skills (Idol, Nevin, & Paolucci-Whitcomb, 1996). Ultimately, it can be used to improve learning outcomes (Cohen & Spruill, 1990). Although CBA may rely on teacher-made or standardized tests to assess mastery, it is considered to be more an approach rather than a specific method or test (Sitlington et al., 1996). In the first chapter of their book *Curriculum-Based Assessment: Testing What is Taught*, Salvia and Hughes (1990) describe an eight-step model for CBA, which includes:

1. Specify reasons for assessment,
2. Analyze curriculum,
3. Formulate behavioral objectives,
4. Develop appropriate assessment procedures,
5. Collect data,
6. Summarize data,
7. Display data (tables and graphs), and
8. Interpret data and make decisions to revise the curriculum or plan.

Curriculum-Based Vocational Assessment (CBVA) is a variation of CBA with an emphasis on a "student's career development, vocational, and transition-related needs based on his or her ongoing performance within existing course content" (Sitlington et al., 1996, p. 84). Performance in vocational education courses, school or community-based work experience sites, and, to some degree, academic classes can be used to gather appropriate assessment information. The resulting information can be used for career exploration, and to develop appropriate instructional and curriculum modifications and supports essential for success in vocational education classes and on-the-job. Sitlington et al. (1996, p. 84) presented three general phases in the CBVA process, developed by Albright and Cobb (1988):

1. ***Assessment during program placement and planning.*** This includes activities prior to and during the first few weeks of the student's participation in a vocational program. Information gathered during this phase assists in program selection, program placement, and program planning.
2. ***Assessment during participation in a vocational program.*** These activities monitor the student's program, determine the appropriateness of the program and service delivery plan, and evaluate the success of the student's program.
3. ***Assessment during exiting of a program.*** Assessment activities in this phase occur near the end of the student's program. Information gathered in this phase assists the team in

identifying the special services needed to help the student make a successful transition into employment and/or postsecondary education and the best program(s) for the student.

Student portfolios can also be incorporated into the CBA and CBVA process (Sitlington et al., 1996). Portfolio assessment involves the systematic collection and evaluation of papers, projects, letters, rating forms, course tests, and other pertinent curriculum-based materials related to performance in courses and work experiences. Much like portfolios used in art and photography, portfolios used in CBVA are a representation of an individual's level of mastery of a particular skill or subject. Portfolios will be covered in more detail under the section on empowerment and informed choice, later in this book.

Ecological/Environmental Assessment

Simply defined, "ecological is a term used to describe a framework for assessment and intervention; it reflects an underlying assumption that individuals interact with their environments and that both change as a result of interaction" (Dowd, 1993, p. 9). Therefore, ecological assessments examine the interaction between an individual and an environment. Szymula and Schleser (1984) indicate that "an ecological systems approach explains behavior as a multisystem interaction involving the individual, family, school, occupation, and society." Along similar lines, Pancsofar (1986) emphasizes that the ecological assessment process should address (a) the individual, (b) significant others, (c) the physical environment, and (d) culture (e.g., attitudes about disability). Another term used to describe this process is "environmental assessment." Moos (1979) identified four major domains in the interaction between the individual and environment that are addressed through environmental assessment: (a) the physical setting, (b) organizational factors, (c) the human aggregate within the environment, and (d) the social climate of an environment (Salomone, 1996).

Three overlapping steps are involved in this process: (a) assessment of the individual, (b) assessment of the environment, and (c) assessment of congruence between an environment and an individual (Parker & Schaller, 1996). The assessment of an individual may include a wide use of instruments and techniques, with an emphasis on situational and community-based assessments where work environments can be introduced into the assessment process. Hagner and Dileo (1993) emphasize that the assessment outcome may be geared more to a work setting and the ability to satisfy certain personal needs and wants, rather than identifying a particular job title. The assessment of the environment may involve identifying and analyzing certain jobs in the community to determine their specific tasks and performance standards, social and environmental characteristics, naturally occurring cues and reinforcers, physical demands, and interpersonal skill requirements. The last phase, assessment of congruence, refers to the match between the individual and the environment, which may require accommodation/modification in instruction, the environment, and/or behavior in order to ensure success.

When considering issues of person-environment fit, the ecological (or environmental) assessment is often subsumed under situational or community-based assessments (Szymula & Schleser, 1984). In fact, the best way to understand an individual's behavior is to use an ecological assessment approach to evaluate behavior in the social environment in which it occurs (Kell, 1989; Szymula & Schleser, 1984; Wehman, 1981).

Behavioral Observation

Behavioral observation is an ongoing process that spans the entire evaluation process from the consumer orientation to the exit interview. To begin the process of behavioral observation, a review of the file may provide a historical perspective of past behavior, disability, and environmental background. To understand behavior in the context of disability, evaluators need to have a working knowledge of the functional (i.e., medical and psychosocial) aspects of the disability and recognize how they influence behavior. Understanding how culture and environment (i.e., ecological conditions) affect behavior are important considerations when recording, rating, and interpreting behavior. With more severe disabilities or behavioral problems, observation will often yield more useful information, especially in situational and community-based assessments, than can be obtained from scores on standardized instruments. As mentioned earlier, the assessment of manifest interest relies heavily on the use of behavioral observation. In fact, assessment of interest in individuals with severe mental disabilities relies on the ability to observe personal reactions to different work activities; for example, facial expressions, body language, attention to task, or frustration tolerance.

There are two primary reasons for conducting behavioral observation: the influence of behavior on success in learning, living, and working environments; and the negative effects of certain disabling conditions on behavior. In numerous studies with employers concerning what factors influence job success and failure, behavior was consistently found to be more critical than other variables such as skill level and job performance (Botterbusch, 1984). Behavior may be the most critical return-to-work factor for individuals with mental illness, TBI, and other cognitive deficits (Thomas, 1989). Burton, Chavez, and Kokaska (1987) conducted a survey of 133 employers who had hired youth with disabilities, to determine which of 22 employability skills they considered to be most important. A seven-point Likert-type scale was used, which ranged from *most important* to *least important*. Table 2 shows the Top Eight of the 22 employability skills ranked by percentage of importance:

Table 2
The Top Eight Employability Skills Ranked by Importance

Employability Skills	Percentage of Importance
1. To be on time	76.7
2. Dependability	71.4
3. Pride in work/job	64.7
4. Respect for authority	57.9
5. How to get along with others	52.6
6. Enthusiasm	40.6
7. Good grooming	39.8
8. On-the-job training	34.6

The first seven variables related to behavior and the eighth to skill. In addition, slightly more than one-third of the employers rated on-the-job training as most important, which was the highest skill/performance ranking. In contrast, slightly more than three-fourths of the employers rated *to be on time* as the most important behavioral ranking. This study is consistent with many similar studies revealing strong employer emphasis on critical vocational behaviors.

With regard to the influence of disability on behavior, two types of behaviors may be present. The first are those behaviors directly related to the disability (e.g., flat affect, confusion, disinhibition, short attention span), and the second are those resulting from coping or defense mechanisms and from difficulty accepting or adjusting to the disability (e.g., denial, anger, frustration). Although some behaviors such as hostility and the assumed lack of motivation could be classified under either behavior type, it is the accurate observation and recording of the behavior that takes immediate precedence over interpretation and classification. In either case, behaviors that interfere with the individual's ability to function, or that may serve as strength to build upon, must be fully evaluated and described in the report.

Equal emphasis should be placed on observing and recording both positive and negative behaviors. Simply focusing on negative behaviors introduces an adverse bias into the results and does not take into account the influence of positive behaviors on success. Evaluators should highlight positive behaviors while concentrating on ways to modify, accommodate, or manage negative ones. This concept applies to both conducting a prognostic evaluation and formulating prescriptive recommendations.

An examination of the consistency in behavior throughout different situations is one indication of the severity of the disability. Severe impairment increases the need to focus more on behavioral issues during the evaluation (Thomas, 1989). Observed behaviors should be described in terms of their frequency of occurrence, their duration, their magnitude (or severity), and their recency so that the extent of any problem behavior can be thoroughly assessed. In order to identify the situation in which the behavior occurred, behavior notations should be recorded on score forms used for the test, work sample, situational assessment, or OJE where the behavior was observed. Then as score forms are reviewed, possible patterns in behavior can be identified.

As mentioned earlier, the behavior patterns that may be found in a job setting can best be observed in a more natural work-related environment rather than a structured testing situation (Diller & Ben-Yishay, 1989). Although work samples provide a simulated environment for promoting and observing related behaviors, situational assessments and OJEs provide the most realistic settings. However, behaviors noted in less realistic assessment environments can provide behavioral cues that can be targeted for further observation in more work-oriented assessment situations.

Another important consideration in the observation and notation of behavior is assessing the subtleties of nonverbal communication. Two important issues must be addressed (Miller, 1988; Wright, 1989). First, is the confusion of nonverbal communication (e.g., body language and posture, facial expressions, gestures, and voice tone) sending a mixed message when compared to other behaviors or to what is being said? Second in this situation, what messages are

consistent with the true feelings of the participant? Since nonverbal communication tends to more honestly reflect the individual's thoughts, this should be explored in more depth with the consumer. Unfortunately, many persons with a disability engage in nonverbal miscommunication since they are unable to appropriately read or relay nonverbal messages. Individuals with certain kinds of head injuries and cognitive deficits may experience this problem, especially as it relates to a lack of self-awareness. It should be described in the report so that its negative impact on working, learning, or social situations can be minimized or eliminated. If this appears to be a problem, the evaluation could focus on the expressive or receptive nonverbal communication problem (e.g., nonverbal subtleties, such as tone of voice, stance, humor, sarcasm, speed of processing, and response).

Not to be ignored are the nonverbal signals that evaluators send to their evaluatees. Even when evaluators frequently express encouraging and supportive remarks, if their nonverbal communication is inconsistent with the verbal message, then the consumer may not feel that the relationship is open and honest. The evaluator must learn to instill a feeling of trust and support both verbally and nonverbally. This will go a long way in motivating and encouraging the consumer as well as in establishing a better rapport.

Evaluators should carefully note not only presented behavior but also any changes in behavior as a result of their intervention. Thomas (1989, p. 62) states, "In addition to assessing work-related behaviors and methods of gaining behavioral compliance, determination of possible reinforcers to be used to shape good work and social skills are important to address."

Transferable Skills Assessment

Havranek, Grimes, Field, and Sink (1994, pp. 61–62) provide the following definition:

Transferability of Skills is when skilled or semi-skilled work activities done in past work can be used to meet the requirements of other skilled or semi-skilled work activities. Transferability of skills is most probable and meaningful when (a) the same or lesser degree of skill is required, (b) the same or similar tools and machines are used, or (c) the same or similar raw materials, products, services are involved.

Further, Havranek et al. (1994, p. 62) describe transferability as a "general process of identifying traits and skills (as demonstrated through previous jobs) that can be matched to similar trait and skill requirements in other, but similar jobs. The similarity of job matching is obtained primarily through the identification of jobs that exist within the same or similar occupational category and workgroup(s). Transferability is essentially the process of identifying jobs that are consistent with the worker's capabilities, considering that the worker's capacity to perform work may be reduced due to disease or injury."

When a work history exists for an injured worker, the transferability of skills process will rely on past job tasks and activities to create a profile for analysis. When a work history does not exist, a vocational evaluation/assessment process can be used instead. In some cases, work history data can be supplemented with evaluation/assessment results especially when work

history is limited or dated, or when the functional impact of a recent disability is unknown and makes the development of an accurate profile difficult.

This is one of the shortest processes of assessment. In some cases, a file review and an interview with the injured worker is all that is needed. When sufficient education, work history, and disability information is available, contact with the individual may not be required. However, the exclusive use of work history to search for comparable jobs may underestimate job potential in individuals who have worked below their ability levels. In these cases, supplementing job history information with vocational evaluation/assessment results will provide a more accurate picture of individual potential.

Field and Field (1992, pp. vii–viii) and Havranek et al. (1994, pp. 62–63) identify the following seven steps in the transferability of skills process.

Step 1. Identify the jobs in the client's work history.

Step 2. Find the *Dictionary of Occupational Titles Codes* (for the identified jobs).

Step 3. Profile the jobs (on a worksheet using worker traits and other related factors such as *Work Field and Guide for Occupational Exploration Codes*).

Step 4. Create a Pre-Vocational Profile (PVP) (or Unadjusted Vocational Profile, UVP, to represent pre-injury job functioning).

Step 5. Create a Residual Functional Capacity (RFC) Profile (Adjust the PVP using available medical, psychological, and/or vocational data. Use evaluation/assessment data if necessary). The RFC profile reflects the worker's current (residual) level of functional skills and capacities related to work potential.

Step 6. Find similar or related jobs (during the search, stay within the occupational area first, Work Field second, and worker trait RFC profile third).

Step 7. Check local labor market (conduct a job search using the RFC profile for suggested jobs in the relevant labor market).

The process can be done manually or by computer (Cutler & Ramm, 1992; Olson, 1992). The manual process employs the use of job classification documents such as the *Dictionary of Occupational Titles* ("Americans with Disabilities Act of 1990," 1991), *Guide for Occupational Exploration* (U.S. Department of Labor, 1993), and the *Classification of Jobs* (Field & Field, 1992). Pencil-paper profiles such as the VDARE (Vocational Diagnosis and Assessment of Residual Employability) (Sink & Field, 1981), or self-developed forms can be used to create a transferable skills profile and job list (Saxon & Spitznagel, 1995). Computer software is also available to search local and national job banks using RFC profiles (Brown, McDaniel, Couch, & McClanahan, 1994). This process can also be used with job changers who have no disabilities, and who desire to explore job opportunities that are similar to current and past work history. In this case, Step 5, the creation of the RFC profile can be eliminated. The use of transferable skills analysis as an interpretive technique will be covered under the chapter on interpretation.

Conclusion

A prognostic vocational evaluation relies on the systematic, thoughtful, and well-planned use of a variety of techniques. This is particularly true when it is found that evaluation and assessment

instruments do not adequately yield useful information. A dynamic assessment process relies on techniques, such as functional assessment, situational and community-based assessment, curriculum-based assessment, behavioral observation, and interviewing. Depending on the consumer and information needs, techniques can be used in conjunction with a variety of evaluation instruments or as stand-alone methods.

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CHAPTER EIGHT

The Vocational Evaluation Process

Introduction

The *Merriam-Webster Dictionary* (Mish, 1997) defines "process" as "the series of actions, operations, or motions involved in the accomplishment of an end." As described in this definition, the "process" of vocational evaluation consists of a series of activities organized in an individualized vocational evaluation plan, designed to assist the consumer in achieving the goals of the evaluation. This individualized evaluation process is often some variation of a relatively standardized process created by the unit. CARF accreditation standards and CCWAVES certification standards provide specific guidelines as to what should be available for use in the evaluation process. This generally accepted format will vary from unit to unit and is influenced by several key factors:

1. the mission of the evaluation unit,
2. the length of time available to offer the evaluation,
3. the reimbursement ceiling,
4. the setting of the unit,
5. the types of referral questions routinely asked,
6. the population typically served (e.g., their abilities and needs),
7. the services, resources, training, and jobs available in the community, and
8. the instruments and techniques available to the evaluator.

Given the limits of what people will pay for the service, a standardized approach will provide a foundation for the development of the most individualized yet cost effective evaluation possible. A careful balance between service and cost (i.e., rehabilitation versus production) frequently determines what is reasonable in terms of evaluations that are both affordable and useful.

In other words, the vocational evaluation process is that fixed period of time in which instruments and techniques are brought together to help individuals explore their vocational and career opportunities. It is this highly individualized mix of instruments, techniques, and time that makes the evaluation process a unique and creative venture for participants and practitioners alike. This chapter will explore a variety of different processes and the content of a comprehensive, dynamic evaluation. The key to a successful vocational evaluation process is knowing how to efficiently plan the arrangement of essential instruments and techniques required to meet the individual needs of different consumers and referral sources.

Vocational Evaluation Processes

There are two important assumptions in developing and modifying an evaluation process.

Assumption 1: The longer and more varied the process, the more information that can be collected.

Assumption 2: The more severe the disability, the greater the need for more in-depth information.

Consequently, individuals with the severest disabilities will need the most time in evaluation and other services. For example, an individual with both a severe physical and mental disability may need a comprehensive evaluation consisting of file review, interviewing, standardized testing, work sample evaluation, in-house situational assessment, and on-the-job evaluation lasting for six weeks. Accommodations will be explored in both learning and performance, as well as supports needed to ensure retention, improvement, and job maintenance. On the other hand, individuals who have good academic skills, no accommodation needs, no behavioral problems, and who are simply exploring career options, an interest and aptitude assessment lasting only several hours may be sufficient. A transferable skills assessment on an injured worker with a good work history may only require a file review and interview to develop a profile, which is then matched to equivalent jobs through the use of a computer. Although these shorter evaluations may be best described as a vocational assessment or vocational screening, the tools used are quite different based on the person served and the expected outcomes.

The initial phases of a long-term evaluation should be used to identify more appropriate instruments and techniques (e.g., situational assessment, community-based assessments) to be used later in the comprehensive evaluation. Depending on what is available to the evaluator, and what is needed by the participant, a variety of different evaluation processes can be creatively and successfully used. In addition, the impact of non-work issues such as family, personal/social skills, independent living, and transportation on overall employment success must be carefully considered and integrated into the vocational evaluation process and final report.

Nadolsky (1973) described one of the early models of vocational evaluation. The model stresses "that the goal of vocational evaluation is to determine the most feasible or ideal occupation for each client evaluated. This occupation is one in which the client can comfortably achieve vocational success and through which he can realize his vocational potential" (Nadolsky, 1973, p. 43). His Model for Vocational Evaluation is based upon a "logical narrowing of vocational choice" through the use tools (i.e., instruments and techniques) that contribute increasing amounts of information with which to make sound occupational decisions (refer to *Appendix C*).

All of these models and processes share commonalities in the order and type of tools used. They involved activities such as interviewing, individualized planning, the use of a variety of different instruments and techniques, career exploration, and report writing.

The major features of a comprehensive vocational evaluation process include: data collection (file review, staffing, interviewing); evaluation planning; administration (functional assessment, standardized testing, work sample evaluation, situational assessment, job site evaluation, behavioral observation); exit interviewing; and data collection and interpretation (e.g., data synthesis, exit staffing, report writing, follow-up; Thomas, 1991). Depending on the circumstances, an evaluator might decide to use file review, intake interviewing, functional

assessment, situational assessment, and on-the-job evaluation with one consumer; and file review, staffing, intake interviewing, standardized testing, and work sample assessment with another. A different evaluator might consider using file review, family interviewing, learning styles assessment, basic skills assessment, and on-the-job evaluation with the first consumer; and file review, staffing, interviewing, standardized testing, and situational assessment with the second. Regardless of what is used, achieving the most accurate and optimum evaluation results should be the primary objective.

As mentioned earlier, vocational evaluation and assessment should take as long as necessary to yield a valid assessment. Evaluations of several weeks or even several months would provide the best results. The University of Washington Vocational Reentry Program offered a "basic level evaluation" that was completed within 3 to 4 weeks for individuals with traumatic brain injury (Fraser, Clemmons, & McMahon, 1990, pp. 177–179). The process primarily relied on file review, tests, and work samples for possible referral for a work-site evaluation. It is important to remember that a dynamic vocational evaluation process with individuals who are severely disabled involves more than just evaluation. It cannot be separated from treatment, modification/accommodation, exploration, communication, and goal setting. As the evaluatee changes, improves, and makes decisions, the evaluation must also change to accommodate the evolving person. This process takes time if the results are to be believable and useful in achieving employment success. In cases where consumers have limited stamina (e.g., back injury, stroke, traumatic brain injury), vocational evaluation may need to be restricted to half-day sessions or less, lasting no more than two to three days each week. If endurance increases, the sessions may be lengthened over time. Although short assessments can render useful information for initial planning (often referred to as prevocational evaluation), the results quickly become obsolete as consumer functioning improves.

A Comprehensive Evaluation Process

Following is an outline of a comprehensive vocational evaluation process. The outline is followed by a description of each step of the process.

- Marketing vocational evaluation services
- The referral process
- File review
- Intake staffing
- Initiating functional assessment
- Completion of information questionnaire
- Orientation and intake interview
- Developing an individualized vocational evaluation plan
- Prevocational evaluation
- Learning styles assessment
- Basic skills assessment
- Interest, achievement, and aptitude assessment
- Assessment of critical vocational behaviors

- Determining initial work feasibility and need/direction for further evaluation
- Work sample evaluation
- Using work samples as an interactive tool
- Assessing learning styles through work sample administration
- Exploring modification procedures through work sample performance
- Evaluating production improvement, and retention and recall through work sample re-administration
- Evaluating decision making and quality control
- Observing critical vocational behaviors
- Identifying remedial needs, and functional strengths and limitations through content analysis
- Matching work sample content to training/job content and prescribing contingencies for successful performance
- Curriculum-based assessment
- Other transitional and environmental assessments (e.g., assistive technology, transportation, independent living, quality of life)
- Job analysis
- Situational assessment and on-the-job evaluation
- Career exploration
- Exit interview
- Data synthesis and interpretation
- Staffing and report writing
- Consumer follow-up, program evaluation, and quality assurance assessment

Not all units will have this full range of components or use everything available to them in each evaluation. The above comprehensive process should be considered a "menu" of evaluation tools that can be used to build a basic process and tailor individualized evaluations. The order may vary as well since activities such as evaluation planning, transition assessment, job analysis, and career exploration may be administered at different times within different process.

Marketing Vocational Evaluation Services

Two terms that must be fully understood are public relations and marketing. They have different approaches and outcomes. Public relations are used to make the general public aware and supportive of an evaluation service. Special interest stories in the local newspaper and on radio and television, and presentations before clubs, civic organizations, and community groups will educate the public about the unit's purpose and services. Marketing goes beyond awareness and education, and it attempts to generate referrals. Vocational evaluation is marketed directly to individuals, organizations, businesses, and agencies that will pay for the service. Both are necessary and should receive equal attention since prolonged community exposure through public relations may offer future opportunities for marketing vocational evaluation (and career assessment) services directly to the general population. In situations where the need for referrals is immediate, then marketing must receive greater attention than public relations.

Traditionally, vocational evaluation services have been, and should continue to be, marketed directly to purchasers of services such as state vocational rehabilitation agencies, school-to-work transition programs, attorneys, private rehabilitation companies, industries, JTPA, and welfare-to-work programs. The use of brochure mailings, open houses, tours of the unit, and presentations at staff meetings of referral sources have been beneficial. However, little attention has been given to marketing evaluation to the participant (or consumer) of the service. This activity of "selling" the consumer on the idea of vocational evaluation has become the responsibility of referral sources, which may at times provide a limited or inaccurate introduction to the service, leaving some individuals with the impression that it is a sterile, impersonal testing process. As a result, participants are sometimes hesitant, if not unwilling, to show up on the scheduled day of evaluation.

Blaming counselors and other referral sources for creating and perpetuating this oftentimes false impression does not solve the problem or develop positive working relationships with fellow professionals and referral sources. If marketing is to be done right, evaluators must take control and accept the responsibility for creating a more accurate and positive image of the service. Another important dynamic to be considered is the change in overall service philosophy. Two key philosophical changes are emphasized in Rehabilitation Services Administration (RSA) and Individuals with Disabilities Education Act (IDEA) legislation and in CARF standards: (a) consumer empowerment, informed choice, and self-determination (i.e., the consumer is the primary decision-maker in the process); and (b) career development (i.e., practitioners should not only assist the consumer in obtaining a job but in formulating and realizing a plan to achieve a personal career goal).

One way to effectively change evaluation's image is by marketing directly to the consumer. There are several ways this can be accomplished, and an evaluator may choose to incorporate one, several, or all of the following suggestions in a marketing plan. Primary marketing approaches include brochures, videos, letters, orientations, and consumer profiles and portfolios.

Brochures should be specifically designed to orient consumers (and their families) to the exciting opportunity provided by vocational evaluation to identify and exploring career directions and planning options (a process of empowerment and career development). These brochures can be mailed out with the acceptance letter to the consumer or given to the referring counselor to share with the person prior to attending the evaluation.

A brief videotape highlighting information contained in the participant brochure can be distributed to referral source offices and shown to consumers prior to entering evaluation. The tapes can also be shown to participants upon arrival to the unit, and used as a tool to facilitate discussions regarding consumers' personal and employment goals, and how evaluation will help them realize and plan for these and other future goals.

Acceptance letters sent to consumers can supplement attached brochures or cover similar orientation information in the absence of a brochure. The letter can be accompanied by forms,

such as self-assessment or employment questionnaires that will start the consumer thinking about job and career interests.

Upon arrival to the evaluation unit, a brief consumer orientation should be given to educate and motivate consumers (and any family members present) about the role of evaluation in their career development process. In some cases, this orientation can be presented to a potential consumer before an evaluation is even scheduled to allay their fears and misconceptions and help them learn more about the value of the service in helping them make decisions and achieve success. If in the future, consumers have the primary responsibility for choosing the services they plan to use, then this pre-evaluation orientation will become critically important.

In all three marketing strategies, the consumer should be oriented to the outcome first (choosing, getting, and keeping a job) before the evaluation process is explained. This will give the participant a better understanding of the reasons for and the importance of vocational evaluation, thus ensuring ownership in the process and its results. Consumers must understand how evaluation relates to the development of their personal and career goals before the evaluation process begins. Providing these same brochures and videotapes to referral sources will also help improve their understanding of evaluation, as well as ensure more appropriate referrals and better use of resulting reports.

A more time consuming and complex marketing process is the joint development of consumer profiles or portfolios. If evaluators are not in a position to perform this activity, then they should work closely with referring counselors to develop such a process. In this case, the evaluator can explain in the orientation how the consumer will learn to use information collected in developing career goals and plans with the counselor. If the use of a locally developed or commercially available profile or portfolio is not feasible, then the evaluator should give the participant copies of interest and/or aptitude profiles, briefly explaining what the results mean in terms of vocational and career planning. Unless consumers are given something tangible to take with them for personal use, it is hard to accurately remember what resulted from evaluation or to even feel that there is any ownership in the process or the findings.

If consumers understand how evaluation can help them achieve personal, career, and quality of life goals, they will more than likely request the service "by name" from their counselors and tell their family and friends about it as well. Evaluators must eliminate the stereotype that vocational evaluation is a tool to be used only by the referral source. Consumers need to recognize that evaluation is a service that would benefit anyone, with or without a disability. Consumers must also realize that evaluators are, first and foremost, vocational/career experts who understand how to match people, with or without disabilities, to jobs and career goals.

Someday, consumers may have the ability to choose their rehabilitation (or futures planning) team members. If evaluators want to be a member of this team, then they must provide consumers with something they want and need—accurate information to help make informed job and career choices.

Marketing and public relations are ongoing processes. However, evaluators may identify down times in the year (e.g., holidays, beginning of school) when referrals are off or no-shows are high. By determining how long it takes to receive a referral and schedule an evaluation, direct marketing to referral sources and consumers can be conducted far enough ahead of down times to remedy the problem.

The Referral Process

The referral process is closely tied to marketing, and program continuation will be predicated on the ability to receive sufficient referrals. Marketing materials should always provide referral forms or information on how to easily obtain a referral form. Following are steps in the referral process.

Receipt of referral information. An application (or referral) is made to the evaluation unit by the referring agency. Although some agencies or school systems use standardized referral forms for all services, evaluation units most often provide their own referral/application forms or packets. In some settings (e.g., rehabilitation hospitals and schools) that employ their own evaluators, referrals are made over the telephone or during staffing by other in-house personnel, bypassing the need for a form. In this case, the evaluator reviews the consumer's records in-house. Application packets provided to referral sources could also contain orientation information on the evaluation service that the referring individual can share with the consumer prior to arrival. In worker compensation evaluations, Cutler and Ramm (1992, p. 33) state that "Each referral for a formal vocational evaluation should be accompanied by a referral packet that contains (at the least) medical and physical capacities information and a reason for referral. The referral packet may also contain work history, a transferable skills analysis, a job analysis, some preliminary test results, etc."

Review referral information and determine eligibility. The information received is reviewed by the admissions person or team to determine the suitability and eligibility for the evaluation. In situations where additional information is needed, the evaluator can contact the referral source for additional information. Three issues must be considered in this phase:

1. The applicant's physical and mental readiness for evaluation (i.e., is the applicant medically and psychology stable?).
2. The applicant's readiness for evaluation (i.e., are there temporary personal/emotional factors that will affect evaluation, such as a recent death in the family or housing eviction?).
3. The applicant's willingness to engage in evaluation (e.g., willing/unwilling to work, mind fixed on only one vocational goal). This last area is best determined by the counselor or teacher before a referral is made.

It must be determined if the applicant and referral source would profit from an evaluation. If not, the referral source must be notified giving the reasons and recommending

other options. It is recommended that the referral source is offered an opportunity to re-refer the consumer for evaluation in the future when the individual's situation changes.

Schedule a date for the evaluation. If the applicant is eligible, then a date for the evaluation is chosen, and the referral source and consumer are notified through separate letters. The scheduled date for evaluation is dependent on the type of scheduling method (e.g., fixed, interval, appointment). In group evaluations, the characteristics of the other evaluatees need to be considered (e.g., heterogeneous or homogeneous mix). If more than one evaluator is available in the unit, then choosing a time when an appropriate evaluator is free must be considered.

Send out a letter of acceptance to evaluator and participant. A letter of acceptance to both individuals should contain the dates of evaluation, times, contact person, transportation needs, and the date and location of the final staffing if any. The participant's letter or packet should also contain basic orientation information, maps to the unit, dress requirements, and places to eat lunch. It should be explained that inventories, checklists, or forms (e.g., information questionnaires, sample job application forms, consent forms, functional assessment or physical capacity inventories) that are included should be completed by the consumer or a family member, and returned on the first day of evaluation.

With regard to the above steps, several factors are important in ensuring suitable referrals:

1. ***Development and use of an appropriate referral form.*** The form should provide space for describing critical information (e.g., medical, vocational, psychological, educational, personal/social, or family) or for specifying what essential reports should be submitted with the referral form (e.g., medical, psychological). The length of the form often contributes to a referral source's willingness to make a referral. If the form is too long and detailed, the referring party may not be willing to complete it, leaving the consumer without vocational evaluation services. On the other hand, if a referral form is too short, an evaluator may not have enough information to determine if the applicant is currently appropriate for an evaluation or to even accurately plan a meaningful evaluation. Missing referral information could create important information gaps leading to less than adequate evaluations and recommendations. There is no formula for determining the ideal length of a referral form other than relying on regular feedback from referral sources.
2. ***Well-specified criteria for consumer entry into the vocational evaluation program.*** This should not be used to screen people **out** of vocational evaluation but should ensure that the service will result in the most valid outcomes for influencing a successful rehabilitation, transition, and placement process. Age, type of secondary disability (if any), and time of evaluation in relation to the onset of disability may be important to consider when determining applicant eligibility for services. The referral form should provide sufficient input of eligibility criteria to allow for thorough screening and decision-making. In cases of substance abuse or violent behavior, reasonable criteria can be established regarding how long an individual must be free of the problem behavior before an evaluation can be conducted. The need and guidelines for interpreters and attendants should also be

specified. The unit should make referral sources aware of any populations they are currently not equipped to serve to avoid receiving inappropriate referrals. If any information or reports (e.g., medical or psychological) are required for review of the case, this must be specified on the referral form.

3. ***Opportunity to provide a detailed referral question(s).*** Sufficient space should be provided to permit the referral source to list in detail all specific information it would like to collect during the vocational evaluation. New referral sources should be given an orientation in how to complete the form and write appropriate referral questions. Most referral questions are general in nature (e.g., what can this person do? Tell me all you can about this client.). However, a referral source will often want more specific information about individuals, such as the ability to return to previous employment, rehabilitation, or education needs prior to or during a particular job placement, and potential employment areas for on-the-job training. Some referral questions may reflect a lack of understanding of what vocational evaluation is capable of offering (e.g., requests for a neuropsychological assessment, a comprehensive physical capacities assessment, or a personality assessment). In this case, the evaluator should notify the referring person that the evaluation could address the vocational implications of or need for these services and recommend that they should be provided if warranted.
4. ***Request for pre-injury and post-injury information.*** A significant part of the referral, planning, and vocational evaluation process is the ability to collect and use pertinent information on the person's functioning before and after the injury. It is best for all information to be listed in functional (descriptive) terms. In addition, if functional skills/deficits information is available through another report or a functional skills inventory or test, the results should also be provided with the referral form. This information is particularly useful when serving industrial injury referrals and conducting transferable skills assessments.

A file should not be considered ready for review if it is not complete. Missing information could result in an inaccurate evaluation and report. Liability problems can also result when essential information for planning is not provided. For example, if a physician limits an individual's lifting to less than 25 pounds, and this restriction is not included in the requested referral information, the evaluator could cause re-injury by unknowingly placing the participant in an evaluation activity requiring lifting above the restricted limit. Vocational evaluators should review their existing referral forms to determine if they are going to provide sufficient information on individuals with a broad range of disabilities. The blank referral form should be periodically reviewed to decide if it is still furnishing useful information and how the form could be modified if needed.

File Review

Once the acceptance letters are sent, a file is opened on the participant and shared with the evaluator (if not initially involved in the acceptance process) for review. At this point, the evaluator may begin the initial stages of evaluation planning. In large organizations (e.g., hospitals, schools, community rehabilitation programs), two files are created per participant. The first is a master file housed in a secure central location that contains all original information on the individual such transcripts, outside reports, letters, billing information, follow-up data, and reports and materials generated by other in-house services such as vocational evaluation. The second is the working file updated and securely maintained by the evaluator. This file contains a copy of the referral information pertinent to the evaluation, the evaluation plan, all completed forms, and the results of all instruments and techniques. The location, content, and organization of the master and working files may differ by setting.

When conducting a file review, the evaluator should study all information for consistencies and inconsistencies. Current and consistent information may not need to be addressed in the evaluation process to save time (e.g., recent achievement test scores or different but comparable medical reports). Inconsistent information (e.g., conflicting medical reports, work history, or test results) should receive attention and resolution through the evaluation. For example, it would be important to determine why an accountant with a college degree who sustained a back injury on the job had below average intelligence and achievement scores on a recent psychological examination. Comparing related file data such as test scores to educational attainment and level of employment, medical records to the physical demands of previous or current employment, and the consumer's expressed career goal to employment success will give insight into the reliability of file information. Expect referral information to contain faulty data at times, and follow-up with the consumer in the interview or with the referral source may help clarify discrepancies. The goal of the file review is to determine what material is accurate and useful, and what information, or missing information, should receive attention in evaluation. This will help in formulating both the evaluation plan and specific questions to be asked in the initial interview.

Several key issues must be considered when reviewing different types of referral information. Some of these issues are described in the following medical, vocational, psychological, and educational categories.

Current medical reports should provide important details regarding the extent of the disability, including functional limitations and restrictions (e.g., limitations standing or lifting), long-term prognosis, and medications. How and when the disability occurred may be useful in employment or return-to-work considerations. Again, reliable medical information on pre-injury and post-injury functioning will give the evaluator some idea of how much has been lost and what the individual presently faces in terms of possible recovery needs and goals.

Vocational history should be carefully reviewed. This may provide some of the best clues as to what the individual is or was capable of doing. In particular, if jobs were successfully held before and/or after the injury, they can be used to develop a pre-injury and/or current functional skills (and loss) profile of the person. In cases where a participant is evaluated for return to former employment, collecting job description detail would be critical to formulating a task-specific evaluation. In some cases, consumers can be accommodated for reemployment in a

previous job. If a prior work history exists, how long each job was held and why it was left could give insight into the individual's willingness and readiness to go to work, and if stable employment can be maintained for an acceptable period.

Recent and detailed **psychological information** is a key factor in identifying academic and intellectual levels, as well as an assessment of personality. Diagnosis of personality disorders and intellectual/academic functioning will provide useful information in evaluation planning and report writing.

Educational records, including formal vocational training, provide similar functional information found under the above Vocational History section. Older records must be used with caution since they may not accurately represent the current functional levels of the consumer.

The importance of specific referral information is determined, in part, by the type of disability and the referral questions. The evaluator must consider the age of the information and its source in judging its reliability and utility in the evaluation process. As always, essential details that are missing from a file can be collected in the initial interview with the evaluatee or in a call to the referring individual.

Because of the highly technical nature of some referral information and reports, it is recommended that evaluators compile a reference library to look up unfamiliar terminology. Some of the documents that would be beneficial include a medical dictionary that gives nontechnical definitions of medical procedures, terms, and words. A psychological terms dictionary would aid in understanding jargon used in psychological reports. A copy of the *DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition)* (American Psychiatric Association, 1994) would be beneficial when frequently working with individuals with diagnosed mental disabilities. The *Physician's Desk Reference* (1997) provides a description of pharmaceuticals, what they are used for, and their general side effects. Occupational information documents such as the *Dictionary of Occupational Titles (DOT)* (U.S. Department of Labor, 1991) can be used to determine the general duties performed by workers by job title and would be useful when reviewing a consumer's work history.

Intake Staffing

This optional staffing process is often conducted at various times prior to the arrival of the consumer (e.g., during the referral process, or before or after file review). In comprehensive rehabilitation hospitals, routine multi-disciplinary staffing provides opportunities to determine when a consumer would be ready for a vocational evaluation. At that point, the evaluator may ask referral questions to make acceptance decisions and begin planning. During the intake staffing, the evaluator can interact with other professionals who have first-hand knowledge about the consumer's functioning and needs relevant to the evaluation process. Evaluators can conduct informal staffing by simply calling or visiting with the referral source to gain more detail not found in the referral information. In community rehabilitation programs, the intake staffing (or admissions staffing) can be used to determine current appropriateness for vocational evaluation as well as any other services offered (e.g., work adjustment, training, or supported employment).

Initiating Functional Assessment

As information is gathered from the file review and intake staffing, it can be systematically recorded on a functional assessment inventory. If used, functional assessment can be initiated almost any time during the beginning of the evaluation process. Refer to the previous chapter, *Techniques of Vocational Evaluation*, for detail.

Completion of Information Questionnaire

An information questionnaire is a brief two- to three-page form that is used to collect personal details from evaluatees in their handwriting. They often resemble job application forms, and in some cases, evaluators use employment application forms. When the questionnaire resembles a job application form, it has greater vocational realism for the consumer and can serve as an effective job seeking skills evaluation tool. Hinman, Means, Parkerson, and Odendahl (1988) developed the *Assessor's Manual* for the job seeking skills assessment, which incorporates the use of a standardized job application to assess consumer competency in completing such a form.

There are five important reasons for using an information questionnaire:

1. It gives consumers an opportunity to describe past experiences in their words. It also gives them a chance to express personal likes and dislikes regarding employment, training, and life goals.
2. It can be used to evaluate one aspect of job seeking skills: the ability to complete a job application form.
3. The evaluator can assess consumers' basic reading and writing skills.
4. It can be used to assess fundamental decision making skills and verbal reasoning abilities needed to seek and hold certain forms of employment.
5. The questionnaire can be used as a starting point in the intake interview process for discussing a participant's past experiences and future goals.

The questionnaire can be given to the participant upon arrival to the unit so that it can be completed prior to the interview. It can also be mailed to the consumer with the acceptance letter with instructions to complete it prior to arrival at the evaluation unit.

Questionnaires should be brief (not more than two to three pages) and contain both closed- and open-ended questions to assess how well the consumer can respond to different question formats. Closed-ended questions require the person to check boxes or circle responses (e.g., gender, marital status, or last school grade completed) and fill in spaces (e.g., name, address, age, or job title). Open-ended questions call for more narrative statements (e.g., job duties performed, reasons for leaving employment, personal or vocational goals, or job-related

strengths and weaknesses). Evaluators can include questions on the form that are not permitted on a job application since the information will be used exclusively for evaluation planning and shared only with the consumer, referral source, or other rehabilitation and transition professionals. The end of the questionnaire should provide space for evaluator comments regarding the client's written and verbal responses.

The completed questionnaire can be reviewed with the consumer during the initial interview to ascertain reasons for certain responses, problems, or omissions. Other factors such as difficulty with writing, spelling, neatness, organization, appropriateness of responses to questions, and perceptions and personal feelings concerning abilities can be discussed. Suggestions for improving performance can be shared with the consumer. Pertinent questionnaire information, including a copy of the completed form, can also be shared with the referral source through the exit staffing and final report.

Orientation and Intake Interview

Upon client entry into the evaluation unit, a brief orientation to the process and reasons for the intended assessment should be given. In order to assess the reasoning skills and personal goals of evaluatees, it might be best to initially ask why they were referred to vocational evaluation and what they would like to gain from the process. Tours of the unit and demonstrations may be necessary, even prior to client admission, to ensure a good understanding of and willingness to participate in the process. Some units may wish to offer an orientation to both participants and their families prior to admission so that support and assistance can be enlisted from key family members. Because of the anxiety, hostility, apprehension, or fears that many individuals with disabilities might have about the impending evaluation, the orientation must be presented in a positive and upbeat manner. It should be strongly emphasized that the assessment is a two-way partnership that allows for continuous input and feedback. Evaluatees must truly feel ownership in the process, so they will be motivated to do their very best, which is the key to an optimal evaluation. Establishing good rapport is essential to gaining consumer trust and support, and maintaining a two-way partnership.

Once the orientation has been completed, the evaluator must ask clients if they are willing to participate in the assessment process. It must be stressed to clients that vocational evaluation is a voluntary process, and this knowledge alone may help to further generate motivation and participation (D. F. Thomas, 1989). However, a lack of commitment would not automatically rule out the evaluation. Instead, it would require the evaluator to be more facilitative and supportive with the consumer throughout the process as well as sensitive to the effects that resistance or reluctance may have on outcomes.

The interview should be administered immediately after the orientation, even in cases where evaluators may wish to conduct the orientation and interview prior to client admission. Interviews can be conducted with both clients and family members and in some cases with employers when return to a previous job is being considered. Although most interviews are conducted in the evaluator's office, they can also be administered in clients' homes or at restaurants in the community. These external settings also permit the evaluator to assess the evaluatees' living environments or how they act/interact in public. However, such creative

interview opportunities would require very flexible time allowances for the evaluator. This formal process of intake interviewing can be continued on an informal basis at other times throughout the evaluation process or during the exit interview as the need for additional information becomes evident.

The interview will permit evaluators to assess their clients' expressed:

1. motivation to participate in evaluation;
2. feelings regarding disability and family reaction involvement;
3. job seeking skills related to employment interviewing;
4. basic functional skills prior to and following injury;
5. initial behavior and emotional control;
6. reasoning and decision making;
7. communication skills; and
8. personal and work-related needs and goals.

It will also assist evaluators in initially establishing rapport and trust with their participants.

There are several important considerations when interviewing individuals with disabilities. The interview will give consumers an opportunity to describe their pre-injury and post-injury functioning first hand. By using daily functioning activities (both work and non-work) as the basis for the interview, clients (or family members) can realistically describe functional strengths and limitations and any resulting problems or accommodations. Another important consideration is the degree or activity of behavior and functioning. This is often expressed in terms of frequency (how often), duration (how long), intensity (how severe; overall magnitude), and recency of behaviors or problems. The areas of memory and recall as well as individual and family awareness of the disability and its resulting problems should also be thoroughly covered. One final consideration in effective interviewing is to rearrange the interview form so that sensitivity to client problems identified through file review, staffing, or functional assessment can be maintained. For example, it might be best to ask questions concerning family stability and support at the end rather than the beginning of the interview in situations where there is a significant family crisis.

Functionally based questions that relate to the areas often affected by disability, such as physical, cognitive, interpersonal, and psychosocial/emotional changes and difficulties, should be included in the interview. Family needs and support issues, and skills related to activities of daily living, transportation, and recreation should also be addressed. Using the *Transition Analysis Matrix* contained in the *Appendix* section will provide guidance in developing a broader range of functional questions. Discrepancies in information collected during file review, staffing, functional assessment, and interviewing should be explored in depth throughout the remaining evaluation and presented in the final report. Results from the interview should be used to develop further and refine the evaluation plan.

The General Interview Process and Questions

Types of Interviews.

Guided – unguided

Directed – nondirected

Patterned – unpatterned

The Interview Process.

1. Preparation,
2. Setting,
3. Conduct of the interview,
4. Close, and
5. Evaluation.

The Interview Content.

1. Set participant at ease (use an icebreaker).
2. Give vocational evaluation orientation (if not done earlier).
3. Give orientation to interview.
 - a. Explain that it is similar to a job interview.
 - b. Assess the job seeking skills.
 - c. Conduct micro-observations.
 - d. Establish rapport.
 - e. Identify participant's interests, strengths, and needs.
 - f. Verify information in the file (look for discrepancies).
 - g. Give feedback at end regarding interviewing skills.
4. Answer any questions about process and impressions thus far.
5. Go over information questionnaire.
6. Why are you here? What do you want from vocational evaluation?
7. Obtain personal and family history.
8. Ask about current income and its amounts.
9. Ask about current and future living arrangements (recreation and consumer skills).
10. Ask about current and future transportation arrangements.
11. Determine the type of disability (diagnosis, self-knowledge, and strengths/limitations in work/daily activities).
12. How would participant overcome own limitations?
13. Ask about medications.
14. Ask about accommodations.
15. Ask about the past and current use of alcohol, drugs, and tobacco.
16. Ask about education and training.
17. Determine military history.
18. Determine correctional history.
19. Determine institutionalization history.
20. Determine past and current vocational history.

21. Ask about current and future career and vocational goals (income, hours, shiftwork, benefits, etc.).
22. Determine quality of life issues.
23. Ask about life goals (what, when, and how).
24. Ask about hobbies.
25. Ask about allergies.
26. Ask about phobias.
27. Other issues and concerns.

Use the interview to conduct a functional assessment, determine the decision-making skills, and assess the knowledge of basic skills and reality orientation.

The Interview Evaluation. (verbal and nonverbal behaviors)

1. Dress and appearance,
2. Eye contact,
3. Body language (relaxed or tense),
4. Verbal skills,
 - a. Organization of thoughts.
 - b. Clarity and audibility.
 - c. Appropriateness (length and response).
 - d. The level of vocabulary.
 - e. Pauses.
 - f. The level of attention and concentration.
 - g. Reaction and emotional control.
 - h. Skills in carrying on a conversation.
 - i. Ability to read subtle clues.
5. Consistency of responses with file data,
6. Knowledge (or lack of) in an area,
7. Problems that need to be addressed in vocational evaluation, and
8. Plan evaluation.

Developing the Individualized Vocational Evaluation Plan (IVEP)

The *Glossary of Terminology for Vocational Assessment, Evaluation and Work Adjustment* (Dowd, 1993, p. 13) defines the individualized evaluation plan as:

A directed, systematic series of events designed to specifically meet the needs of the individual being served and satisfy the demands of the referral source. Through the individualized evaluation plan, the individual being served, the referral source, and the evaluator obtain a concise picture of the individual's overall evaluation program.

McCray (1978, p. 1) further states that:

It not only provides a master plan for the purposes and objectives of an evaluation but also offers a written record of the assessment techniques used, who was involved in carrying out the evaluation, and the extent to which specific goals were achieved . . . it ensures that the unique needs of every individual client are given special consideration and that there will be an organized attempt to satisfy those needs in the most effective and efficient manner possible.

Individualized planning begins when the evaluator reviews the referral information. Using the referral information (in particular, the referral questions), the evaluator begins formulating an initial plan. These preliminary ideas may not be written down until the evaluator feels there is sufficient information, and consumer input, to commit the plan to paper. In this tentative stage, specific evaluator questions are formulated, and direction is given to modifying the initial interview questions, and content of the prevocational evaluation phase if administered. Information obtained from the prevocational evaluation regarding the evaluatee's personal interests, goals, achievement levels, and functional skills will be used to modify or further develop the evaluation plan. The types of instruments to be used in relation to reading level, reasoning ability, physical capacity, and accommodation needs can be chosen or modified for the more vocationally oriented evaluation phase. In some units, formal evaluation planning does not begin until an initial assessment (or prevocational evaluation) can be completed to determine the appropriate type and direction of the evaluation.

The point of the development of the Individualized Vocational Evaluation Plan (IVEP) is a matter of professional preference. As soon as a file is picked up and reviewed, the evaluator begins the questioning process, and initial planning commences. However, some evaluators do not begin to plan on paper until intake interview and functional assessment are conducted to allow for client input and inclusion of basic evaluation results. A more eclectic approach would permit evaluators to begin the planning process after file review and continue it through the intake and basic evaluation process, resulting in a thoroughly researched and sound initial plan. If a long-term assessment is used that begins with interviews in the client's hospital room and continues for several months throughout the rehabilitation process, then the more eclectic approach would best serve the client's needs.

The individualized vocational evaluation plan is a flexible work in progress, a living document that changes when change is needed. Modification of the plan is a key ingredient in a dynamic evaluation process. Modification occurs when planned directions do not materialize and new ones appear, and when consumers develop or lose interest in various directions. Since all instruments have certain performance prerequisites (e.g., reading ability, measuring skills, dexterity, or color discrimination), instruments must be chosen where there is a reasonable expectation that they can be performed, with or without modification, by the participant.

Length also plays a major role in the continuous modification and development of plans. Since the vocational evaluation process for individuals with severe disabilities is quite long, the plan may need to be frequently modified. Therefore, the evaluator may want to initially develop a basic plan that specifies the questions to be answered and factors to be assessed, and every several days add the instruments and techniques considered most appropriate for use at that time. As a result, frequent changes in the plan would be minimized and more appropriate evaluation

directions chosen, based on the new information being generated. This does not diminish the importance of planning for very brief evaluations that may not require extensive modification and update. In fact, if the evaluator has a short time for evaluation, a tightly designed plan will be needed to ensure that all questions can be answered. This author reviewed short-term evaluations where planning was not used, and essential information was missed or not collected. In longer evaluations, what is missed one day can be planned for another.

McCray (1978) describes the following 10 steps in the individualized evaluation planning (IEP) process.

- Step 1:** Accumulation of referral information
- Step 2:** Examination of referral information
- Step 3:** Identifying referral questions
- Step 4:** Identifying appropriate evaluation techniques
- Step 5:** Listing persons involved and clarifying their roles
- Step 6:** The initial interview
- Step 7:** Modification of plan
- Step 8:** Formal testing begins/reviewing of plan
- Step 9:** Client performance completed/exit interview
- Step 10:** IEP completed

Pruitt (1986) listed seven similar steps in an ongoing planning process. He emphasized the need to identify critical factors (e.g., finger dexterity or measuring ability) in the plan to be used in choosing appropriate instruments. As the evaluation progresses, the evaluator will formulate hypotheses, which are estimates of the probable functional level of the consumer, that need to be addressed in further planning.

For specific disability populations, the IVEP will ensure that the process is sensitive to unique issues and needs. For example, planning for individuals with traumatic brain injury (TBI) will need to address highly specialized approaches to evaluation. D. F. Thomas (1989, p. 59) identifies four important factors in evaluation planning for persons with TBI:

1. Gather all relevant background information prior to the evaluation.
2. Use the background information to profile what is known about acquired deficits and preserved skills.
3. Structure a series of tasks designed to assess how the identified deficits may create work problems.
4. Determine if the work problems represent major barriers to achieving vocational objectives and if they can be corrected, eliminated, compensated for, or in some manner worked around.

The *Standards Manual and Interpretive Guidelines for Employment and Community Support Services* of CARF (1996, p. 56) states that the "individual written evaluation plan is prepared by the person seeking employment and the evaluator" and should be based on:

- referral information;
- referral questions;
- the initial interview;
- the stated overall purpose of the evaluation; and
- personal preferences.

CARF (1996) also specifies what should be included in an evaluation plan.

- Questions to be answered through the evaluation.
- How these questions will be answered.
- Who will answer these questions.
- Assistive technology techniques to be used in the evaluation process.

When creating or revising a planning form, the evaluator will want to make certain the above CARF standards are reflected in its content. Some planning forms are divided into columns or sections that address different elements (e.g., questions, techniques, persons involved). The instruments are usually listed in the order given, and as the plan is modified, new questions, instruments, and techniques are added at the bottom of the list. Other planning forms provide space at the top to write down questions. This is followed by a listing of all of the instruments and techniques in the unit, paired with blanks for marking what is going to be given and by whom. Additional instruments are marked for use as the plan is modified. A final section of the form is available for comments regarding assistive technology techniques utilized and notes on modifications in the plan. The following is an example of the development of an IVEP.

Referral Question: Is the consumer capable of being successfully employed in her expressed interest area of clerical work, and what level of training would be appropriate?

This question must be broken down into several small, more measurable questions. Each question can be converted into job-related factors, which do not need to be entered on the planning form. Instruments and techniques appropriate to the individual's functional skills and needs and that can evaluate the specific factors are then chosen.

Question 1: What consumer's achievement skills are needed for both training and employment? Factors: Reading, math, and spelling.

Question 2: What are her clerical aptitudes? Factors: Typing, word processing, filing, computer use/data entry, telephone answering/communication, and clerical checking.

Table 1
Example of an Individualized Vocational Evaluation Planning Form

Evaluation Questions	Instruments/Techniques	Evaluator	Comments
Achievement skills need for training and	Adult Basic Learning Examination	Morgan	Math also untimed

employment			
What are clerical aptitudes? (modification)	VALAPA Clerical W/S SRA Clerical Coding Computer Situational Assessment	Morgan Morgan Valerie	Used Word 98

In the above plan, Question 1 assessed the achievement skills needed for the job as well as for on-the-job training or possible formal training (e.g., business school or community college). The consumer's timed arithmetic skills were in the slightly below average relative to those required of clerks, but in the average range when the math section was completed untimed. The plan was modified for Question 2 by adding a situational assessment for word processing on a computer in the evaluation unit. The situational assessment offered opportunities for a more realistic hands-on assessment and career exploration for the consumer who stated that she had never used a computer before. The comments section on a planning form can also be used to document what assistive technology will be, or was, provided.

When the planning form is to be filled in, it is recommended that the evaluator sit down with the participant to develop the form jointly, explain what needs to be done and why, and ask for input on direction. When the initial plan is written, the evaluator can review it with the consumer, ask if she is satisfied with her plan (e.g., is there anything else evaluatees want to explore), and provide her with a copy for self-assessment purposes. In some settings, the plan is developed by the evaluator with prior consumer input through the intake interview, and then reviewed with and signed by the evaluatee indicating agreement with its content and direction. Filling out the IVEP should take no more than 10 to 20 minutes.

Guidelines for Planning. There are six important guidelines that, if followed, will result in a successful plan and evaluation.

1. Match instrument prerequisites to the evaluatee's skills when considering what is most appropriate for use. All evaluation tools will have some skill requirement not directly assessed by the work sample (e.g., reading for a computer word processing work sample), which must be formulated into what is chosen. If a consumer does not meet a prerequisite, then what modification or accommodation could make the instrument more accessible?
2. Use a general-to-specifics approach in planning and conducting the evaluation. This will help eliminate the "shotgun (hit or miss) approach" to evaluation, especially when the time is limited. For example, basic skills such as dexterity and eye-hand coordination can be evaluated before moving on to a more technical drafting work sample. In this way, evaluators can also explore simple to more complex skills and comparable job opportunities (Pruitt, 1986).
3. Do not begin the evaluation with an instrument that is too difficult for the consumer and will result in failure. This may affect interest and motivation to continue and to put forth

one's best effort. At the same time, do not begin with an instrument that is too easy for the participant. This may be insulting and degrading to evaluatees who feel the evaluation is not appropriate for them. It is best to begin and end with a successful experience so that consumers leave evaluation more motivated to participate in the rehabilitation or transition process.

4. Vary the instruments and techniques that are given to minimize fatigue and anxiety, and maintain interest and effort in evaluation. Do not give all difficult tests or instruments of the same type at one time. Mix paper-and-pencil and performance instruments and activities to vary the routine. Begin with vocationally related instruments so that participants are fully aware of the purpose and outcome of the evaluation.
5. Always consider emerging consumer interests and unexpected changes in the evaluation performance when modifying the plan.
6. As mentioned earlier, evaluation ends when the plan is completed, and all questions are thoroughly answered.

When tailoring an evaluation to a specific referral source (e.g., vocational rehabilitation or school-to-work transition program), it is recommended that the evaluator use the planning document of that particular agency/setting (e.g., IWRP, IEP) as a guideline in planning and conducting the evaluation, and in writing the final report. This will ensure that information essential to the referring agency will be covered in the evaluation and report.

Prevocational Evaluation

Although prevocational evaluation (sometimes referred to as vocational screening) differs slightly from setting to setting, it will be used here to refer to an initial feasibility assessment. The vocational evaluation plan is designed to provide systematic guidance in conducting a general-to-specifics approach to assessment. This means beginning with assessment instruments and techniques that examine consumers' functioning in the most basic and general pre-work skills, to direct the remaining process into a more specific work-related evaluation. Prevocational evaluation may include general reasoning and learning, basic living skills, achievement, dexterity, behaviors, and interest. This phase determines the feasibility of:

1. continuing with a more vocationally based evaluation;
2. recommending that a person enter a specific job or vocational training; and
3. referring a person to other services prior to continuing with a more comprehensive vocational evaluation or placement.

Various instruments and techniques are available for use in the prevocational phase. They should be used to determine what skills the evaluatee currently possesses that might demonstrate employability skills. If few skills are initially evident, then the assessment can determine if the person can profit from training or instruction. This latter consideration is often the approach

taken when determining if an individual is a good candidate for supported employment placement. Following are examples of instruments and techniques that are useful in prevocational assessment. However, please remember that the use of these instruments and techniques should not be limited solely to prevocational evaluation any more than work samples, situational assessments, and job site evaluations would be restricted to the work-oriented vocational evaluation phase. This distinction between prevocational and vocational evaluation is made primarily to highlight the slightly different purposes and approaches of the two evaluation phases.

1. ***Learning Styles Assessment.*** Refer to the previous chapter, *Instruments of Vocational Evaluation*, for detail.
2. ***Basic Skills Assessment.*** Refer to the previous chapter, *Instruments of Vocational Evaluation*, for detail.
3. ***Interest, Achievement, and Aptitude Assessment.*** These forms of standardized testing can be used as a relatively quick way to determine what a person has both lost and maintained. The evaluator must be cautious when using these instruments, and the modification and administration skills detailed in the forthcoming *Work Sample Evaluation* section should be carefully applied.

When assessing interest, the evaluator must separate a client's true expressed dislikes from feelings of inadequacy or an inability resulting from problems associated with the head injury. Flat interest inventory results can be supplemented with work values and temperament tests, particularly in situations where the client is unsure about returning to work of any kind. When comprehension is in question, the evaluator should ask the client to explain each statement read, or picture, and the reason for the choice. Questionable reasoning skills will require greater evaluator assistance or discontinuation of the test. If the test is discontinued, then more appropriate instruments or techniques can be used. Leisure interest inventories may also be of great benefit, especially in situations where vocational interest inventories fail to yield useful results.

As with all standardized testing, achievement tests of reading, arithmetic, and spelling should be chosen, administered, scored, and interpreted with caution. Word recognition tests may need to be supplemented with comprehension measures. Arithmetic tests should provide both math problem and word problem items. Spelling tests that require the evaluatee to write a dictated word as opposed to respond to a forced-choice list would allow for the assessment of writing problems and legibility. Obtaining timed and untimed scores on timed tests will provide an indication of what the person could do if given sufficient time. However, caution must be used when reporting both scores. The reader should be advised that the untimed score is not an accurate measure since it is based on the timed norms. Therefore, it must be used only as a general indicator of greater potential in the client in untimed situations.

Aptitude and intelligence testing (and to some extent achievement testing) can be used to determine what existing skills individuals possess, as well as what potential they may have for further learning and training. However, this is not always true when used with persons with TBI since these tests are often too abstract to readily generalize their results to work activities. These are relatively quick and efficient instruments that may have value with persons whose academic and processing skills are reasonably intact (i.e., mild head injury). Achievement and aptitude tests will be most beneficial when the content of the tests can be matched to the actual content of previous or targeted work or training activities. These might include identifying and analyzing specific reading and mathematical content, clerical functions and their demands, tasks requiring space relations or form perception, or motor and manual tasks by degree and frequency. These will improve the accuracy, utility, and interpretability of the test results in relation to a particular functional goal.

Although limited standardized testing can be conducted during the prevocational evaluation phase, more extensive use of these instruments is possible throughout the remaining process as long as the initial results do not serve to screen the client out of further evaluation or services. If this appears to be the case, then reliance on more appropriate hands-on, performance-based approaches (i.e., work samples, situational assessments, job site evaluations) would be warranted. The evaluator is cautioned not to give all standardized tests in succession as this may cause undue stress to the client. Mixing tests with hands-on activities and frequent breaks will ensure the best possible performance with the least anxiety.

4. ***Assessment of Critical Vocational Behaviors.*** Refer to the previous chapter, *Techniques of Vocational Evaluation*, for detail.
5. ***Determining Initial Work Feasibility and Need/Direction for Further Evaluation.*** After the prevocational evaluation phase has been completed, the evaluator needs to take time to determine the next step. One option is to continue with a more comprehensive, work-related vocational evaluation. However, if the severity of the head injury prevents the collection of useful or accurate information, even after extensive intervention during the prevocational evaluation phase, then another option should be considered. In this case, a continued evaluation will not render any new information. The evaluator should arrange a staffing to discuss where the client could be referred to overcome some of the problems identified through the prevocational evaluation. Once these issues are addressed, the client can be referred for a reevaluation. For example, a client may be experiencing such anger, depression, fatigue, or disorientation that the evaluation cannot be completed. The results may not accurately reflect what the person could do once these problems were corrected. Therefore, if initial improvements in functioning are achievable, then this should occur before any further evaluation is attempted.

A final option is to consider referring the individual for specific rehabilitation, education, training, or job placement. In some cases, prevocational evaluation may provide

sufficient information to warrant discontinuing any further assessment and begin formulating possible recommendations to be shared in the exit interview, staffing, and final report. This may be particularly true in situations where the head injury is mild and/or the need for information is minimal. However, caution should be exercised not to terminate too quickly since many subtle behavior and performance problems may not surface for some time (e.g., they may not surface until the person is placed in a work-related evaluation situation). The issues of time since the injury and prognosis for change must always be considered within the small window of vocational evaluation.

Prevocational evaluation can determine direction and type of vocational evaluation. This would include whether the focus should be on a general vocational evaluation or a specialized one for services such as supported employment.

Work Samples Evaluation

The use of commercially marketed and locally developed work samples with individuals with head injuries is greatly underrated. This lack of understanding is often the result of limited knowledge concerning the "clinical" use of work samples. Regardless of what an assessment specialist uses, there are several important clinical procedures that should be followed. These procedures are listed below. The list is then followed by a detailed description of each activity.

1. Using work samples as an interactive tool.
2. Assessing learning styles through work sample administration.
3. Exploring modification procedures through work sample performance.
4. Evaluating production improvement and retention and recall through work sample re-administration.
5. Evaluating decision-making and quality control.
6. Observing critical vocational behaviors.
7. Identifying remedial needs, and functional strengths and limitations through content analysis.
8. Matching work sample content to training/job content and prescribing contingencies for successful performance.

Using Work Samples as an Interactive Tool. There are numerous opportunities throughout the work sample process for evaluators and clients to establish rapport and exchange information related to a wide range of personal and vocational issues. In order to create the proper facilitative environment, two activities must be routinely introduced into the work sample evaluation process: a work sample orientation and a post-sample interview.

Work Sample Orientation. Prior to the actual administration of each work sample, the evaluator should take time to orient clients to what they are about to take. Whenever possible, the orientation should briefly cover what the work sample is designed to assess, why it is being given, and how it relates to work in general as well as to specific jobs in the community. Concise questions regarding clients' knowledge of or experience with work that is related to the sample can serve as an excellent means of evaluating their knowledge of the world of work and previous

employment activities if any. Musante (1983) recommends that clients be asked to restate what was covered during the work sample orientation to provide better insight into their thinking and reasoning processes. Stress can be reduced and expectations clarified, and the clients' motivation can potentially improve through the use of orientations.

Post-Sample Interview. At the conclusion of every work sample, the evaluator should routinely obtain feedback from clients regarding their opinion of the experience. Questions should concentrate on (a) how clients liked taking the work sample, (b) how they think they did, (c) if they could have done better and how, and (d) their interest in doing all or parts of jobs that are related to the sample. Such questions help to explore expressed vocational/task interests, modification needs, and basic decision-making skills.

More specifically, when the orientation and post-sample interview are consistently given throughout the work sample administration process, they help evaluatees internalize the reasoning and decision-making process that is critical to effective career exploration. When applied to individuals with traumatic brain injury, the orientation and post-sample interview procedure can be used to further explore pre/post-injury functioning, current decision-making skills, ability to recall pre-injury job information, and level of comfort and/or stress with their perceived work sample performance. In particular, if a person feels that the outcome could have been better had more time been available, had more instruction been given, or a modification been applied, then these accommodations can be considered if re-administration is initiated. Nonverbal communication is often as informative as the statements made by the client and should be explored if it is inconsistent with a verbal response (e.g., a client who grimaces while stating interest in a work sample activity).

Assessing Learning Style(s) Through Work Sample Administration. A critically important outcome of the work sample administration process for individuals with TBI is the identification of the best approach(es) to providing instruction. Since traumatic brain injury often affects learning ability (and retention and recall), learning style should be one of the initial factors assessed. A variety of paper-and-pencil learning style tests is currently available to assess individuals who can read and reason well enough to respond appropriately to the instrument (Blakemore, McCray, & Coker, 1984). However, in cases where reading and reasoning written material (either learning style tests or written instructions) is not feasible, then more performance-based procedures should be used. The two instruments available to assess non-reading learning style are the Perceptual Memory Task (PMT) and Pathfinder.

The PMT evaluates areas such as verbal and visual memory for sequences, color, and shape. Individuals with organic dysfunctions have been included in the norms. Pathfinder, an instrument designed for evaluating preferred learning style associated with more severe mental handicaps, is typically used with individuals who could profit from supported employment services. This battery of simple activities examines subject responses to instruction presented through verbal, modeling, and physical (hands-on) approaches.

Process of Instructional Modification. As mentioned earlier, work samples can also be used and modified, if necessary, to effectively evaluate learning style in individuals with head injuries. The following is a process for systematically modifying administration instructions for

work samples. It is based on the more common administrative procedure of oral instruction and demonstration.

1. Administer instructions following the standardized procedure. If the standard method is not followed, then it will be difficult to determine if the lack of understanding is the result of a client's learning problem or an evaluator's instructional problem (e.g., omitting important information or presenting information out of sequence).
2. Repeat the instructions client did not understand. Often, the individual is momentarily distracted or the instructions are administered faster than the client can process them (a frequent problem for people with TBI). In these situations, simply repeating what was missed will solve the problem.
3. Ask the client what he/she did not understand to help tailor further modifications (e.g., vocabulary too high, unfamiliar with tool names, or instructions were given too quickly). However, some persons with head injuries are better able to tell what they did understand rather than what they did not understand. Therefore, rephrasing the question will provide the evaluator with the information necessary for appropriate instructional accommodation. In some instances, using a slower, more deliberate pace without talking down to the client may help facilitate mastery of the instructions.
4. Provide more visual prompting (e.g., pointing) with oral instructions.
5. Provide visual demonstration (modeling) with verbal prompting (e.g., using only descriptive or keywords). For clients who are unable to understand two instructional modalities at one time, presenting the information in visual form only may improve comprehension.
6. Use a hands-on instructional approach (physically guide individual's hands through the process).
7. Engage in chaining, when necessary, to assess the level of sequencing.
8. Re-administer the instrument at a later date without instructions to assess retention and recall. Provide instructions as needed, using the same process above to determine if the learning style has changed with familiarity.

Once a preferred learning style has been determined, additional work samples can then be chosen that complement the learning approach or that can be appropriately modified to incorporate the preferred style. Please keep in mind that the same learning style does not work in every situation since comprehension and recall may depend on motivation and previous knowledge and experience with a task. Additionally, when an individual's functioning improves, there may also be improvements in learning and memory. Therefore, be sensitive and flexible

when applying the previously identified learning styles so that they enhance rather than retard learning.

Additional information on the process of modifying evaluation instruments can be found in a publication, entitled *Learning Assessment in Vocational Evaluation* (McCray, 1979), available from:

The Rehabilitation Resource
Stout Vocational Rehabilitation Institute
University of Wisconsin–Stout
Menomonie, WI 54751

Using Word/Phrase or Picture Prompt Cards. One highly beneficial modification to the administration process is the development and use of note cards that highlight the work sample steps. Appropriate work samples (situational assessment or job site evaluations) can be chosen and their instructional steps broken down by tasks. Each task can be numbered and illustrated using a keyword, descriptive phrase, picture/drawing/photograph, or a combination of these. When used in conjunction with Steps 1 to 6 above, or as replacements of Steps 7 and 8, the instruction time and accuracy can be improved along with later recall (Step 8). The cards vary in size, depending on the number of steps to be illustrated, but usually should not exceed the size of a standard 8 1/2" by 11" sheet of paper. It is best in job site evaluations or during situational assessments to use smaller cards or a small spiral notepad that would be less conspicuous. The choice of using word/phrase or picture prompts depends on the client's reading and processing abilities. For example, if a work sample requires the assembly of a washer and a nut on a bolt, then a series of numbered pictures can show: (a) holding the nut in the left hand, (b) placing a washer on the bolt with the right hand, (c) screwing the nut on the bolt with a directional arrow showing turning direction and the phrase underneath stating "Turn Three Times," and (d) placing the completed assembly in a box or bin. An arrow can be drawn between each step with one final arrow connecting Step 4 back to Step 1 to indicate that the task should be repeated. Word/phrase or picture prompts for a window cleaning situational assessment can be organized as follows: (a) cleaning materials (spray cleaner and rag) removed from shelf, (b) cleaner sprayed on window (top to bottom), (c) window wiped with rag (top to bottom), (d) cleaning materials returned to shelf. If prompt cards are successful with work sample administration/re-administration, then they (or memory notebooks) can be recommended, during the staffing and in the report, for use in work and non-work activities. Evaluatees should also be given the opportunity take notes during administration when it serves to improve their retention and recall.

One final approach to evaluating and accommodating retention difficulties is the use of audiotaped instructional prompts. Individuals who respond well to verbal instruction or verbal cues may also profit from this technique. Instructions for selected work samples can be condensed and recorded for use on small tape recorders, portable cassette players with headsets, or on the more high-tech audio message reminder devices and used with clients when recalling is a problem. Although costly, similar techniques can be applied to videotaping, and the use of computers for the visual and verbal prompting of instructions. If the audio or video prompts improve recall, then they can be recommended for use in training or employment. The medium

chosen (audio or video tape recorder, or computer) depends on the instructional requirements and technical nature of the activity in question.

Dealing with Stress in the Evaluation Process. Inabilities to deal with stress and overreaction to stimuli are common byproducts of traumatic brain injury and are often problems in the vocational evaluation process, including the use of work samples. Stress and anxiety frequently occur when the evaluatee is having difficulty following an administrative approach or is overloading on too much input (i.e., cannot learn when two different learning approaches— instruction and demonstration—are given simultaneously) or when there are too many distractions. In this case, the evaluator should immediately switch to one instructional approach. If the client still complains that the task is too difficult to learn or perform, then time should be taken to reduce the interfering stress. This can be accomplished through the following steps:

1. Have client lean back in the chair and close eyes.
2. In a soft, calm voice tell the individual to breathe slowly and deeply several times, making sure the person's mouth is open to relax muscles that become tensed when the teeth are clenched. While the eyes are still closed, quietly instruct the client to rock head front-to-back and side-to-side several times. This activity can be concluded with a few more deep breaths.
3. Two more thorough techniques can be used with the client if stress is not relieved using the previously described method. One approach is to have the client clear the mind and go through a progressive relaxation exercise. The other technique is more time consuming and difficult to use and should be considered if the progressive relaxation technique is of limited value. It requires the evaluator to guide the client through a positive visualization exercise. In this case, the person should visualize performing the work sample quickly and accurately. It is recommended that evaluators take the time to learn these two relaxation techniques before attempting them with a client.
4. Explain that you plan to use an entirely different approach in administering/demonstrating the work sample.
5. If the individual still resists taking the work sample, indicate that you will administer something entirely different. Choose another instrument that assesses similar factors as the previous one but permits you to use a different instructional approach altogether.
6. Have the client open eyes and administer work sample.

Once this simple relaxation technique is mastered, the client can be given breaks, and when stress becomes a problem, the client should be encouraged to practice the relaxation technique during this time. Although frequent breaks are highly beneficial and strongly recommended, they alone may not help the evaluatee reduce stress. Since this time-limited technique is designed to temporarily deal with administration related stress, it should not be

considered a comprehensive approach to managing chronic stress. For these situations, report recommendations should be included that address the need for client mastery of more thorough and effective stress management techniques.

Determining Task Mastery. There are a few simple ways of determining if an individual has learned the task in question. They are as follows:

1. With short cycle activities/tasks, require completion of a specified number of consecutively correct trials/assemblies (e.g., three to five).
2. With trials of medium length (several minutes), require the successful completion of one trial.
3. With long-term activities, ask individuals what they are supposed to do. This procedure should be used with caution since some clients can perform activities better than they can explain them and vice versa. As an alternate to this approach, clients can be observed for a few minutes at the beginning of the activity to ensure they know what they are doing. To make them feel at ease with your presence, explain that you will be there for a few minutes to help them with any problems they may have.

The performance phase of a work sample, test, or other assessment situation should not be initiated until you are certain that the client exactly knows what to do or can successfully use the appropriate word/picture prompt technique. As mentioned earlier, if a person can learn how to perform a work sample but does not reach competitive performance levels, then supported employment might be an appropriate employment option. In all cases, instructional techniques and modifications used to insure that the client learned how to take a work sample should be included in the report recommendations section and particularly in recommendations for supported employment placement.

Exploring Modification Procedures through Work Sample Performance. With the enactment of Section 501 of The Rehabilitation Act of 1973, Section 503 in 1976, Section 504 in 1977, and the Americans with Disabilities Act (ADA) in 1990, government offices and private institutions/contractors receiving specified sums of federal dollars cannot discriminate against individuals with handicaps in the education or employment process. These regulations also address accommodation issues related to employment selection criteria. From this criteria, White (1978) identified ". . . three major areas of concern regarding the testing of motor handicapped persons: (a) psychological factors related to the limited opportunity for social interaction frequently imposed by a handicap, (b) physical factors which must be considered when selecting test material and (c) changes in psychometric properties of standardized tests which are modified in some way to accommodate a handicap." The purpose of modifying employment screening instruments is to permit persons with handicaps (in this case, the functional limitations imposed by TBI) to demonstrate their abilities and not their disabilities. In the *Handbook of Reasonable Accommodation*, the Office of Selective Placement Programs (1980) of the United States Office of Personnel Management presents sound justification for "modifying written examinations:"

Although many handicapped persons can demonstrate their qualifications through usual procedures, modifications are sometimes necessary to enable those with certain

disabilities to achieve test results commensurate with their abilities. Special arrangements made to avoid compounding the problems faced by handicapped competitors are equalizing rather than preferential. The objective is to eliminate any artificial barriers, which would prevent such persons from demonstrating their capabilities in the examination process. (p. 4)

Both publications by White and the Office of Selective Placement Programs give examples of appropriate instrument modifications. Accommodations specific to the needs of persons with head injuries have been extracted and listed below for consideration in the modification of work samples and other evaluation devices.

Modifying Administration Methods

1. Reduce anxiety and help evaluatee feel at ease.
2. Match learning and instructional style (written, oral, visual, hands-on, audiovisual, chaining).
3. Provide individual or group administration as necessary.
4. Extend instruction/practice time.
5. Ensure that evaluatee has learned what to do (refer to *Determining Task Mastery* section above).

Modifying Response Methods and Content

1. Fill in answer sheet for evaluatee.
2. Let evaluatee dictate answers into a voice-activated tape recorder.
3. Adjust/eliminate time limits.
4. Give frequent breaks throughout and between each instrument as needed (important in situations where individuals easily fatigue).
5. Rearrange work area (simplify, reduce visual/noise distractions, provide work aids, raise/lower/tilt working surfaces).
6. Simplify language in instruments, reword items to make them clearer, and shorten sentences to make them easier to understand.

Without the enactment of Sections 501 (1973), 503 (1977), and 504 (1977), and the ADA (1991), the issues of test modification would be moot since employers would not be obligated to make reasonable accommodations for people with disabilities. The Office of Selective Placement Programs (1980, p. 2) states that "Regulations on nondiscrimination for handicapped individuals require that agencies make reasonable accommodation to the known physical and mental limitations of a handicapped applicant or employee unless it can show that the accommodation would cause undue hardship on the agency." Prior to 1973, work sample modifications were of limited value within the vocational evaluation process due to a lack of employer support for providing similar job site modifications. Today, however, federal regulations, the success of Projects With Industry and supported employment programs, and employers' desires to return injured workers to the labor force have prompted the modification of jobs to accommodate individuals with disabilities. This means that beneficial work sample modifications can be

recommended for replication at the job or training site. A study conducted by Berkeley Planning Associates (1982) for the U.S. Department of Labor's Employment Standards Administration examined a variety of modifications on 2,006 different jobs with Federal contract employers. Table 1 shows the Top Ten most commonly used accommodations by percent of use:

Table 2
Most Commonly Used Workplace Accommodations

Accommodation	Percentage
Orienting supervisors and coworkers to provide necessary assistance	18.0
Other	8.9
Other modification of work procedure	8.9
Assigning tasks to other workers	8.8
Transferring employee to another job	8.7
Adjusting table, desk, bench, etc.	6.4
Removing architectural barrier for individual	5.7
Providing additional training	5.2
Modifying work hours or schedules	5.2
Providing other special equipment, tools, or devices	4.7

Overall, the study reported that approximately 51% of the accommodations cost nothing. The study also found that no single job modification prevailed (as evidenced by the low percentage assigned to the above modifications and the high percentage of "other" categories); therefore, each case should be handled on an individual basis. Employers were willing to spend greater amounts of money on accommodations for high skill jobs, particularly those where qualified workers were hard to find.

Today, job sites are being modified with greater frequency, and successful work sample modifications can provide the prescriptive guidance necessary to assist with appropriate job redesign when it is required. A final source of test and work sample modification can be found in a book *Tests and Test Use in Vocational Evaluation and Assessment* (Siefker, 1996) available from The Rehabilitation Resource.

Evaluating Production Improvement, and Retention and Recall through Work Sample Re-administration. If an individual's speed and/or accuracy are less than competitive and there is a willingness to retake the sample with the idea of improving the deficient area(s), then re-administration should be considered. Research supports the fact that repeated trials on performance-oriented work samples, even in short practice trials, brings about improvements in productivity (Blakemore & Coker, 1982; Chan, Parker, Carter, & Lam, 1986; Lam, Chan, & Thorpe, 1988; McCray & Blakemore, 1985). Several steps can be followed in the re-administration process to assess improvement potential:

1. Determine the performance problem area (e.g., speed and/or accuracy) and ask if the client is interested in retaking the work sample. If there is no interest, continue the assessment in a different area.

2. Depending on the length of the work sample, all or part of the work sample can be re-administered. Longer work samples can be reduced in length to minimize boredom and fatigue while allowing sufficient time to evaluate improvement. On work samples with fixed time limits, the performance can be plotted over a set of equal time frames (e.g., breaking a 20-minute work sample into four, five-minute time intervals to plot performance within each interval). However, all final administrations should be completed using the full length of the work sample.
3. At the beginning of a re-administration, the evaluatee should be given a thorough explanation of what area needs improvement (speed and/or accuracy). As each trial is completed, the results can be plotted and shared with the client and praise and encouragement generously given for subsequent trials. The re-administration should be discontinued when the criterion is reached, when progress is not obtained after two or more successive trials, or when the evaluatee no longer wants to take the sample. When complaints concerning the reason for re-administration are expressed, helping clients recognize the relationship of this process to the daily routine and repetition of work activities may contribute to their understanding and desire to continue.
4. In order to thoroughly examine retention and recall (memory), a work sample that has been mastered one day can be re-administered without instructions the next and subsequent days, with only instructional prompts being given to supplement confused or forgotten steps/sequences. It may take several days before a work sample can be performed without prompts. In some cases, the word/phrase or picture prompt cards described earlier can be used to assess their effectiveness in improving recall. The use of re-administration permits the replication of the daily routine of job activities not available through the onetime administration of a work sample. When re-administration of several work samples and situational assessments is incorporated into a daily evaluation schedule, a more accurate assessment of issues and improvements related to a similar work schedule can be achieved.
5. Synthesize and interpret the results as they relate to recommending environmental, training, and job accommodations (e.g., extended learning and practice periods on the job).
6. Re-administration and repetition are important in the assessment and instructional processes for individuals with traumatic brain injuries. They are often a key to ensuring long-term success in rehabilitation, training, and employment; therefore, they should be readily incorporated and used throughout the evaluation.

Evaluating Decision Making and Quality Control. As mentioned earlier, it is not enough to know how evaluatees did on a test or work sample; the evaluator should also know what they got right and wrong, and why. In addition, it is equally important to find out if clients can make judgments regarding the quality of their work as well as recognize and correct errors. Without the ability to consistently perform quality work, the chances of maintaining employment

will be seriously jeopardized. Therefore, when mistakes are made, the evaluator must determine if the client is capable of recognizing and correcting them. Client errors can occur during the practice or performance phases, giving clients two different opportunities to determine how well they can learn from their mistakes. The following procedure will assist in identifying problems associated with decision-making and quality control.

1. When performance is evaluated (i.e., an instrument scored), clients should be asked to find and correct any errors. Errors that are missed, or not properly corrected, can be reviewed individually with the evaluator to determine what difficulties the evaluatee might be having. For certain individuals with head injuries who are unable to initially identify and/or correct errors, the evaluator should proceed to the next step.
2. Point out the first mistake and ask if client knows how to correct it. If not, demonstrate how.
3. Follow the procedure in Step 2 until the client can independently identify and correct errors. The evaluator may need to try different approaches to overcome specific client problems associated with error identification or correction. These might include modifying the instructional approach as described earlier in this section, providing extensive practice time with identification and correction exercises, or furnishing correct samples of the work with the instrument or situational assessment.
4. If during the course of a work sample or situational assessment activity an evaluatee routinely makes the same mistakes, then the evaluator should provide immediate assistance. This would include following Steps 1, 2, and 3 and describing what was done on both the score form and in the report. Although this type of assistance will compromise the integrity of the norms, allowing the evaluatee to repeat the same mistake until the activity is completed will serve little if any purpose.

The results of this process must be incorporated into further evaluations and subsequent report recommendations.

Observing Critical Vocational Behaviors. A highly important part of the vocational evaluation process for persons with traumatic brain injury is behavior observation. Because of the significance of behavioral/psychosocial issues with persons with TBI, every opportunity to observe behavior should be pursued. One such opportunity is the work sample evaluation process. Next-to-real employment settings and situational assessments, work samples provide one of the best opportunities to observe critical vocational behaviors. Observations can be noted on the work sample score form and converted into recommendations for behavior management or accommodation. Certain work samples can be chosen and administered because of their particular behavior requirements. They can also be modified (e.g., increasing production conditions or demands) to allow for the observation of preselected environmental factors. Work sample task observations and outcomes can be matched to previous job tasks performed by the client to help establish a profile of pre-injury and post-injury skills and limitations. Specific

behavior observation considerations and procedures are discussed in more detail in other sections of this publication.

Identifying Remedial Needs, and Functional Strengths and Limitations through Content Analysis. As previously mentioned, observation of client performance and analysis of the completed content (what items were answered correctly and incorrectly) will help the evaluator build a remedial and functional profile of a client. The problem with some standardized instruments is that they simply report a score and fail to specifically identify abilities and limitations and how these limitations can be corrected. Functional inventories can guide the systematic identification and administration of appropriate work samples and other evaluation instruments that can answer these essential questions.

To begin this process, evaluators must first analyze and note what remedial and functional factors (e.g., math, change making, measuring, whole body range-of-motion) are present in each work sample, test, and situational assessment activity. These factors can be listed and categorized for comparison to an existing functional inventory or the development of an individually tailored inventory. Each factor can then be assigned corresponding instruments, and specific instruments can be chosen that are appropriate to each client (i.e., if one work sample is not appropriate, then another sample can be chosen that assesses the same factor). If a specific job has not yet been targeted for the client, then a suitable range of work samples and other evaluation instruments can be chosen that cover all of the factors. When a job possibility is available, factors critical to the job can be used to plan and initiate a highly individualized evaluation.

A unique aspect of using work samples to assess basic and functional skills is their performance orientation and relatedness to concrete, job-related tasks. Further, when a clinical approach is applied to the work sample administration process, ways of overcoming deficit skills can be explored and prescriptively reported for remediation and management.

Matching Work Sample Content to Training/Job Content and Prescribing Contingencies for Successful Performance. One of the most essential clinical skills of vocational evaluators is the ability to accurately interpret evaluation results, and work sample outcomes in particular, and formulate effective recommendations. Although the traditional norm-referenced approach has merits, for more severely disabled populations such as individuals with TBI, the criterion-referenced approach would offer far more discrete and functionally relevant information. Although this technique will be discussed in detail in the interpretive section of this book, the concept of criterion-reference as it relates to work samples will be reviewed here.

Norm-referenced interpretation requires the comparison of a client to another group of individuals (i.e., the norm group), which may not be appropriate given the lack of relatedness of the norm group to the individual being evaluated and to the community-based outcome being considered. The problems here are obvious since a single percentile score fails to reveal any functional information about outcomes. For example, a client score at the 80th percentile on a money handling basic skills test means very little regarding functional ability, even if the norm group was known. However, a criterion-referenced interpretive approach would only require a brief review of what content the client got right and wrong. In this case, a criterion review might

reveal that the person "could make change only up to a \$10 bill." In this case, reporting a score at the 80th percentile, along with the criterion achieved, has significant functional utility when recommending remediation, education/training, or employment.

It is strongly recommended that the evaluator take time to evaluate the criterion relevance of available work samples and tests. When establishing cut scores based on norms, the evaluator can equate criterion levels to specific percentile score levels. For example, if a client can correctly answer all questions up to the point of making change for a \$5 bill, a match of the number of correct responses achieved to the corresponding level on the norm table would reveal a score around the 30th percentile. Now, a score within the 30th percentile range has functional meaning but should always be reported in conjunction with its criterion (i.e., level of change-making ability). Unfortunately, not all work samples and tests have criterion relevancy, and norms may be the only available interpretive mechanism.

In conclusion, the uses of work samples in many evaluation programs have been de-emphasized, and their importance in meeting the assessment needs of persons with severe disabilities has been greatly underestimated. When modifications in the instructional or physical aspects of instruments are extensive, work samples quickly become situational tools in that they serve the evaluation process better as an observational opportunity than as a standardized instrument. Meeting the unique evaluation needs of individuals with severe disabilities requires a clinical application of work samples and other assessment instruments. When used with evaluatees with severe head injuries, work samples that have high face value to the world of work, or that have been designed specifically for use with this population, should be given priority. Only practice with these techniques will ensure their proper and successful use.

Situational Assessment and On-the-Job Evaluation

Information on situational assessment and OJE can be found in the previous chapter, *Techniques of Vocational Evaluation*.

Exit Interview

Once the vocational evaluator has collected all necessary assessment information with clients, the process can be concluded with an exit interview. The evaluator should take time to review the complete file and carefully share basic results and possible recommendations with clients for their feedback. Knowing what evaluatees liked and disliked, their feelings about their overall performance, and the evaluation process, in general, will provide important information on expressed interests and personal insights for the report. Potential recommendations can be validated through client responses and prioritized accordingly. At the end of the interview, it is important to ask clients to verbalize what they understand to be the outcomes of the evaluation to assess their perceptions and ensure that the information covered in the upcoming staffing and final report is not a surprise.

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Vocational Evaluation and Assessment: Philosophy and Practice

CHAPTER NINE

Communication and Follow-Up

Data Synthesis and Interpretation

Data synthesis and interpretation are among the most difficult clinical tasks in the vocational evaluation process. The multitude of issues and considerations associated with traumatic brain injuries (TBI) further complicates analysis and decision-making. To begin the process, the evaluator should arrange the working file in chronological order beginning with the referral information and intake interview, continuing through the instruments and activities given, and ending with the exit interview. The file should then be reviewed from beginning to end to identify any behavioral or performance patterns. If any are identified, then the file can be arranged in that order and data analysis and interpretation begun.

Although data synthesis and interpretation are conducted throughout the evaluation process, they should receive special attention prior to the exit interview so that potential recommendations can be formulated and discussed with the client. Interview results are then incorporated into the existing information, which is further refined for presentation in the exit staffing. With the recommendations from the staffing in hand, the evaluator is now ready for final synthesis and interpretation through the vocational evaluation report.

Three approaches will be presented that can be used in data synthesis and interpretation: the functional analysis approach, the content analysis approach, and the construct analysis approach. Regardless of the approach used, a key ingredient to meaningful interpretation is realism. To ensure realism, all instruments used in the assessment process should rely more on criterion-referenced than on norm-referenced methods of analysis. The more traditional norm-referenced approach converts the evaluatee's obtained raw scores (e.g., time, errors, or correct responses) to derived scores (e.g., percentiles, stanine scores, standard scores, grade equivalents, etc.) contained in norm tables for performance comparison purposes. The effectiveness of this process depends on how well matched the client is to the individuals who compose the norm group and how representative the norm group is to the outcome being considered (e.g., training or employment opportunities). Since very few norm groups contain representative numbers of persons with TBI or relate well to local jobs or training criteria, the norm-referenced method may have limited realism and utility.

The criterion-referenced method evaluates performance in relation to the actual content of the task (i.e., what the person was able to do). A criterion-referenced example given earlier in this publication demonstrated how to interpret the results on a change making test or work sample as follows. The norm-referenced score on a money-handling work sample at around the 80th percentile, when compared to general population norms, would not be as functionally descriptive as a criterion-referenced statement of what the evaluatee was able to do (e.g., could

make change up to but not beyond a \$10 bill). Although both the norm-referenced and criterion-referenced approaches have value to the interpretive process, the criterion-referenced method has greater face value in relation to specific training and job content and, therefore, greater utility when matching persons with TBI to appropriate environments. The functional analysis and content analysis approaches rely on the criterion-referenced method, and the construct analysis approach incorporates the norm-referenced method.

The **Functional Analysis Approach** involves the identification of the basic functional skills required to successfully master and perform activities related to independent living, training, and work (e.g., learning ability, stamina, or mobility). The categories (or items) within functional assessment instruments and inventories can serve as models for profiling both a person's skills and job or training requirements. By matching the client's functional profile to the functional criteria of specific jobs or trainings, the evaluator can identify performance-related abilities and needs. Functional needs can then be addressed through rehabilitation, modification, and accommodation strategies.

The **Content Analysis Approach** matches the tasks contained in work samples, situational assessments, and job site evaluations to similar tasks found in vocational classes and jobs. For example, if a past or projected job requires the client to file 3" by 5" index cards by social security number, then evaluation instruments should be chosen that replicate this task. Table 1 gives a more detailed example of how the content analysis approach can be used to choose instruments and interpret results related to possible file clerk training and placement.

Table 1
Example for the Use of the Content Analysis Approach to Choose Instruments and Interpret Results

Task Area	Instruments	Outcome
Type file labels	Typing work sample (or typing class grade)	Slow but accurate
File folders alphabetically	Filing work sample (or Clerical Checking Aptitude Test)	Slow but accurate, needs practice
Retrieve files on request	Filing work sample	Same as above

Note. Placement in an on-the-job training filing position could be considered as long as a client is given sufficient practice time to improve work speed. Alternatively, placement could be considered in an on-the-job training filing position where production speed is not a major performance criterion.

The **Construct Analysis Approach** matches abstract traits and aptitudes with similar traits and aptitudes required in particular job or training situations. In this approach, tasks are

converted to traits (e.g., assembly jobs to dexterity level, or reading and math activities to grade level) so that aptitude and related test results can be compared to trait profiles of different jobs.

The best example of job-related construct information is contained in the *Dictionary of Occupational Titles (DOT)* (U.S. Department of Labor, 1991a) and related documents. The Data, People, Things code (the middle three digits of the DOT code) is a numeric description of the job's activities, as they relate to data, people, and things. For example, the DOT code for File Clerk I (clerical) is 206.362-010, and the Data, People, and Things code is 362, which carries the following descriptors:

Data	3	Compiling
People	6	Speaking-Signaling
Things	2	Operating-Controlling

The following table is an example of how the construct analysis approach can be used to choose instruments and interpret results. For this example, the critical aptitudes for File Clerk I was taken from the *Classification of Jobs* (Field & Field, 1992). In addition, the related aptitudes and ratings for local jobs or training curriculums can be obtained through a job analysis described in *The Revised Handbook for Analyzing Jobs* (U.S. Department of Labor, 1991b), published by the Materials Development Center. The ratings are based on a one-to-five scale with "1" representing the upper 10% of the population, "3" the middle third, and "5" the lower 10%.

Table 2
Example for the Use of the Construct Analysis Approach to Choose Instruments and Interpret Results

Attitude or Requirement for File Clerk I	Instrument	Outcome Level & Percentile
Verbal (V) 3	XYZ Reading Test	Level 3, 42th
Clerical Perception (Q) 2	ABC Clerical Work Sample	Level 3, 45th
Finger Dexterity (F) 3	Purdue Pegboard	Level 3, 55th
Manual Dexterity (M) 3	Minnesota Rate of Manipulation Test	Level 2, 70th

Note. The client is one digit above the required aptitude level in manual dexterity, at the required level in verbal aptitude and finger dexterity, and one digit below the required level in clerical perception (slow but accurate at matching letters and numbers). Placement in an OJT file clerk position could be considered as long as sufficient practice time was given to improve work speed or the work environment did not require high production levels. Table 3 resembles an example of a construct profile for the analysis above.

Table 3
Example of a Construct Profile for Construct Analysis

File Clerk I Profile	Morgan's Assessed Profile	Differences
V3	V3	0
Q2	Q3	-1
F3	F3	0
M3	M2	1

Construct profiles of evaluatees can be entered into a computerized job search systems similar to those described in The Rehabilitation Resource publication *Vocational Evaluation Systems and Software: A Consumer's Guide* (Brown, McDaniel, Couch, & McClanahan, 1994). The resulting job list can be used as a guide to explore employment options. For such a system to be reasonably effective with individuals with head injuries, changes/improvements in the profile structure resulting from rehabilitation and modification should be anticipated. By entering a modified profile resembling anticipated improvements in functioning, a newly expanded job list can guide the detailed formulation of appropriate prescriptive recommendations.

Since not all evaluation instruments and techniques are amenable to one single analysis approach, a combination of the approaches should be incorporated. Parts of a job or training program may lend themselves well to a functional analysis and other parts to a content analysis. Once all tasks have been accounted for, then other environmental factors can be addressed, such as supervision, interaction, behavior, learning style, and recall. For example, other important considerations in the File Clerk I position that were not addressed in the profiles above include the size of file cabinets, weight of files, mobility and range-of-motion requirements of the specific work setting, environmental considerations, behavior and interaction requirements, and supervision needs. These considerations can be listed in functional, content, or construct terms to supplement existing analysis information. It is these seemingly unimportant details that may make the difference between success and failure for someone with TBI.

With some difficult cases (moderate to severe head injury), evaluators may feel uncomfortable with their ability to fully and accurately interpret their findings without additional input. In these situations, it is recommended that staffings be conducted to discuss results, draw conclusions, and formulate recommendations. Some evaluators even like to take additional time, such as an evening or two, to think about a case before staffing it or writing the report. The staffing and report writing phases can also help in interpreting results since they require systematic and thorough organization. The need to clearly and effectively express prescriptive recommendations with supporting documentation often provides new interpretive insights. The remainder of this chapter will present the primary considerations in organizing and staffing cases, writing vocational evaluation reports for persons with TBI, and conducting follow-up.

Staffing

Once all data have been collected, synthesized, and interpreted, the evaluator conducts a staffing. The staffing should be attended by all staff and professionals who have had contact with

the client during the evaluation and who will have contact with this individual in the immediate future. The evaluatee, family members, and employer (when appropriate) should also attend. Staffings should be conducted before the vocational evaluation report is written so that any changes or additions to the information presented can be incorporated into the final report.

Therefore, reports are often considered to be a detailed review of the proceedings of the staffing. It is recommended that the evaluator use the report-writing outline below as organized and efficient means of presenting pertinent information in the staffing. By jotting down key points at appropriate places throughout the outline, and adding new information as it surfaces during the staffing, the evaluator will have created a concise report writing guide that will save writing time and ensure that all essential details are covered in the report.

Report Writing

This section of the manual will highlight those aspects of vocational evaluation report writing that directly relate to the issues associated with traumatic brain injury. For a detailed overview of the general report writing process, the reader is referred to the publication *Report Writing in Assessment and Evaluation* (Thomas, 1986) published by the Materials Development Center.

Above all else, reports and concluding recommendations should be written prescriptively. That is, they should be highly descriptive and spell out all contingencies that would improve the client's chances of success. Environmental issues, supervision needs, instruction and recall requirements, and accommodations are but a few of the contingencies that may need to be detailed in the report. Techniques that worked during the evaluation to bring about improvement or mastery should be thoroughly described so that they can be replicated in other settings.

As mentioned under the Data Synthesis and Interpretation section above, the report-writing outline should be rearranged when necessary to allow for the presentation of information in the most efficient manner. The outline should be changed to accommodate the best presentation of the results, rather than the information being forced to fit the outline. All too often, reports are criticized for not meeting the reader's needs or providing useful information. Often, reorganizing the structure of the report will solve the utilization problem. For example, if a transitional plan is to be developed with a client, then the different sub-headings of the evaluation report could mirror the order and required content of the different sections of the plan. When the transition plan is developed, it will be much easier to find and transfer information from the report to the corresponding sections of the plan. As a result, valuable time is saved, and there is a greater assurance that the report will be effectively used in the planning process. To ensure clients' participation in the transition plan, they should also be given a copy of the report, so they know what is expected.

The body of the evaluation report should be written to document and justify the recommendations. Important client issues that could be addressed in the body of the report include (a) a profile of pre-injury and post-injury functioning, (b) functional strengths and limitations by category of injury (e.g., physical, cognitive, or social/interpersonal), and (c) descriptions of client performance and required accommodations. Without question, the

recommendations section is the most important segment of the evaluation report. Therefore, a variety of key recommendations specific to the needs of persons with traumatic brain injury will be presented. This list is by no means inclusive and can be creatively expanded depending on unique factors associated with the individual, family, referral source, employer, and community. Combinations of recommendations should be considered along with a variety of options, just in case the first option is not considered or does not bring about the expected results. All recommendation contingencies and prescriptions should be described narratively and in step form to ensure that they can be initiated properly.

1. ***Selective Placement.*** Recommendations in this category refer to placement in education, training, employment, or community sites that are not affected by the client's functional limitations. For example, if the individual in question cannot perform basic mathematical functions, then an environment that does not require math could be selected. This could apply to a broad range of issues, such as stress, performance speed, behavior, communication, memory, and physical functioning. No active intervention is needed prior to, during, or following placement.
2. ***Adaptive placement.*** Unlike selective placements, this recommendation is used when active and involved intervention is required prior to, during, or following any form of placement. It can be done in conjunction with selective placement but will require some form of specialized rehabilitation, instruction, accommodation, modification, or assistance. Supervisor orientation to the new worker, modified job training, work area reorganization, job coaching, and follow-along services are examples of adaptive contingencies. Unless the identified contingencies can be met, success with either selective or adaptive placement will be highly questionable.

For example, if someone with no basic mathematical skills is to be considered for a job that requires addition and subtraction in whole numbers, then several adaptive options could be considered. One option is to teach the client the required mathematical operations for the job and follow-along at the job site to ensure that the skills have been mastered and applied correctly. Another option might involve teaching the client how to perform the mathematical operations on a simple calculator or adding machine. A possible job redesign option would be to assign the mathematical tasks to another co-worker in exchange for a non-mathematical activity. A final option could incorporate the use of a work aid that would replace the mathematical operation (e.g., instead of counting out ten bolts into a bag, place them in a 10-hole board, and then dump them into the bag).

Fraser, Clemmons, and McMahan (1990) discussed various placement models available to individuals with mild, moderate, and severe traumatic brain injury. Table 4 shows a modified form of this list, which can be used in tailoring placement recommendations.

Table 4

Placement Strategies and Support Provisions Used in Tailoring Placement Recommendations

Placement Strategy	Support
Direct Placement (full-time or part-time)	Placement Specialist Self-placement
Direct Placement – OJT (full-time or part-time)	Supervisor Co-worker
Selective Placement (full-time or part-time)	Placement Specialist
Selective Placement – OJT (full-time or part-time)	Supervisor Co-worker
Adaptive Placement (full-time or part-time)	Job Coach and Mentor Training Consultant/Mentor
Adaptive Placement – OJT (full-time or part-time)	Job Coach and Mentor Training Consultant/Mentor
Specialized Placement full-time or part-time) <ul style="list-style-type: none"> • Enclave • Sheltered Employment 	Job Coach Facility Staff

The more severe the brain injury, the greater the need for adaptive or specialized placement with job coach interventions (Fraser, 1988). The use of volunteer work has also been advocated as an option to transitioning clients into work roles, especially when individual or family concerns/fears about employability restrict job placement efforts.

From a functional perspective, Corthell and Tooman (1985) indicate that the vocational evaluation should have been able to:

1. Identify specific deficits,
2. Determine how the deficit will interfere with functioning, and
3. Determine how and by whom the deficit could be remediated. The body of the report can address Items 1 and 2, the summary section can outline functional strengths (assets) and limitations related to Item 2, and the recommendations section can outline options associated with Item 3.

Of equal importance is the enumeration of functional assets that can be relied upon in training and job placement and when remediating functional limitations. The remaining recommendation considerations relate to the rehabilitation strategies that will lead to an overall improved functioning of individuals with traumatic brain injuries. Many of these recommendations can be combined, and services offered will concurrently improve efficiency and cost effectiveness.

Environmental Issues. Many education, training, or job placements require special conditions to enhance success. Some of these include recommending settings that are low in stress, de-emphasize speed, and/or provide supportive supervision. Small businesses or classes (with individualized instruction) may be preferred over larger, more impersonal ones. Specific modifications and accommodations in the client, environment, or both can also be described in detail. Any motor, sensory, or cognitive deficits that may create safety concerns should be highlighted, and recommendations for overcoming and monitoring these concerns should be carefully noted. Special considerations in family, living, and social environments may also require attention in the report.

Learning and Memory Issues. Specific intervention needs by teachers/trainers, supervisors, co-workers, and mentors should be prescribed. Techniques identified in evaluation that improve learning and recall should also be explained. Johnson (1989) and Parente and Anderson-Parente (1990) describe vocational memory training strategies and memory cueing and prompting approaches (electronic cueing devices, computers, tape recorders, checklists, memory notebooks, etc.) designed to help workers overcome memory problems. Regular follow-up should be recommended to ensure continued progress and success in this area.

Cognitive Retraining. "Cognitive retraining (or remediation) . . . refers to a set of strategies intended to improve intellectual, perceptual, psychomotor, and behavioral skills of persons with brain dysfunctions" (Kreutzer, Gordon, & Wehman, 1989, p. 118). Fryer and Fralish (1989) state, "Cognitive rehabilitation is aimed at eliminating the barriers that prevent a person with a head injury from accomplishing goal-directed activities. It is an attempt to provide the individual with the skills needed to function successfully in everyday surroundings" (pp. 7–3). It involves systematic remediation and retraining through computer-based and therapeutic techniques to deal with instrumental skills (e.g., attending, concentrating, shifting attention, perceiving and integrating information, self-monitoring behavior, storing and retrieving information, planning and organizing, decision making) and "functional" skills (e.g., driving, activities of daily living, recreation and leisure, consumer skills, cooking, grooming and dress). Specifically stating the deficits that need to be addressed through cognitive remediation/retraining and how they would impact on performance in education, vocational training, or work will provide important justification and guidance to the planning process (Corthell & Tooman, 1985). Although much of this training is conducted on an individual basis, group situations can also be used with the additional advantage of providing social skills training at the same time.

Behavior Management. Successful reentry into the community, labor market, and family is often impeded by problem behaviors associated with TBI. Corthell and Tooman (1985) define behavior management as "... a systematic process of identifying specific maladaptive behaviors, modifying them, or replacing them with more adaptive behaviors" (p. 90). When making recommendations for behavior management the report should: (a) identify the target behavior (Wesolowski & Burke, 1989); (b) note its frequency, duration, magnitude, and precipitating events, if any; and (c) indicate what interventions were attempted in evaluation and their impact on client behavior.

Psychosocial Rehabilitation. Recommendations for this service should be considered when the individual has difficulty developing and maintaining satisfying interpersonal relationships at home, at work, or in the community as a whole. This procedure is frequently combined with behavior management and cognitive retraining (Corthell & Tooman, 1985). Counseling and support systems are also incorporated in this approach (Cole, 1989). The specific problems noted during evaluation, any reinforcers successfully used, and the reasons for providing the service should be stated in the recommendation.

Counseling and Therapy. There is some controversy over the effectiveness of counseling and therapy with individuals who are head-injured. The severity of the injury may restrict the use of certain counseling strategies as well as limit overall success. Counseling and therapy can be recommended in part to:

1. Support the provision and maintenance of the above service recommendations;
2. Help clients better understand and deal with their injury and the resulting problems; and,
3. Help clients make decisions and commitments regarding family, personal and living situations, training, and work (Cicerone, 1989).

Individual, family, and group counseling can be recommended to help reduce stress and develop coping skills (Moore & Plovnick, 1989; Vander Kolk & Stewart, 1988) and deal with substance abuse problems. The use of individual and family support groups should also be considered as a viable option.

Physical Improvement. Poor stamina, fatigue, weakness, coordination, and balance problems are associated with some forms of head injury, as are the deconditioning effects resulting from prolonged periods of recovery. In these situations, evaluators may recommend work hardening, exercise, and daily activities that can improve balance, coordination, and dexterity. Occupational therapists, physical therapists, and recreation therapists are often recommended to provide specialized evaluations as well as rehabilitation services in this area.

Transitional Services. Since traumatic brain injuries can affect all aspects of a person's life, transitional issues must be addressed. Even if appropriate jobs can be obtained, clients may have difficulty maintaining employment if they cannot deal effectively with non-work issues. The evaluator must first have a thorough understanding of what kind of services exist in the community (e.g., transitional living centers, supervised living arrangements, day treatment programs, and outpatient rehabilitation programs) for recommendation purposes (Uomoto & McLean, 1989). In addition, transportation needs and availability (e.g., car, cab, bus, carpool) must be detailed with regard to training, job, and community access. The *Transition Analysis Matrix* contained in the *Appendix* section provides an overview of the participants and environments that constitute the transitional process. The matrix can be used as a systematic guide in collecting transitional services information from the community and matching appropriate services to client needs. Environments addressed on the form include vocational, personal/social/family, residential/domestic/consumer, community access, and recreation/leisure. Succinct information is given on how each of these environments relates to client objectives/outcomes and the major participants to be enlisted in the transition process (i.e., in-

house staff/programs, family, other agencies). The matrix should provide the evaluator with ideas for a wide variety of transitionally focused recommendations. Transportation is not specifically identified on the form since it is considered a critical access issue for all of the environments.

As mentioned earlier, recommendations should be numbered for easy reference and listed in order of priority. Any placement contingencies should be described within the given recommendation. It would be beneficial to have fellow evaluators or other staff who are familiar with traumatic brain injuries read and critique the report and recommendations for accuracy and utility.

Consumer Follow-Up

One final and extremely critical activity of the vocational evaluator is to conduct a follow-up of the completed report. The best way to determine if the report meets the needs of the client and referral source is to initiate a personal contact with the case manager. In cases where the contact is initiated soon after the report is sent (60 days or less), the evaluator may wish to find out specifically how the report was used in developing the rehabilitation or transition plan. In long-term follow-up, the type of placement and level of success can be determined. As data are collected, desired changes in the evaluation process and report writing can be instituted. It is important that evaluators take the time to discuss with the referral agent what they liked and disliked about the report, the accuracy and utility of the recommendations, what they used and did not use, and what they would like to have in future reports.

When properly rendered, vocational evaluation can identify opportunities and directions for individuals with traumatic brain injury not otherwise considered. As long as the evaluator remains flexible, creative, sensitive to the needs and abilities of the client, and aware of appropriate community resources and services, then vocational evaluation will continue to be an integral part of the rehabilitation process.

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Transition Analysis Matrix
Participants

	Client Objectives/ Outcomes	In-House Staff/ Programs	Family	Other Agencies (What Done and By Whom)
Vocational	Obtain full or part-time employment (time-limited or supported) including training, modification and accommodation.	Vocational evaluator (VE; to identify), counselor, job development/placement specialist, job coach, vocational instructor/teacher, adjustment specialist, rehabilitation engineer, occupational therapist.	Support (encourage, help, praise) (give examples of support activities).	What: Training, modification, adjustment, job development/placement, follow-along. Who: Voc. Rehab., Voc/Tech schools, community colleges, JTPA, local employment service, rehab. facilities and workshops, supported employment programs.
Personal/ Social/ Family	Engage in appropriate communication, interaction, and behavior. Realize future growth needs.	VE (to identify), counselor, adjustment specialist, instructor/teacher, occupational therapist, social worker, job coach, psychologist, nurse.	Support (encourage, help, praise), give instruction and assistance, help with practice (give examples of support activities).	What: Counseling, instruction, adjustment, behavior management Who: Voc. Rehab., family planning, mental health, social services, support groups, hospitals, rehab. facilities and workshops.
Residential/ Domestic Consumer	Live and function in non-work situations as independently as possible.	VE (to identify), counselor, rehab. engineer, instructor/teacher, adjustment specialist, occupational therapist, home economist, job coach.	Support (encourage, help, praise), give instruction and assistance, help with practice, assign and monitor household duties/chores (give examples of support activities).	What: Shopping, ADL, independent living arrangements, modifications, financial planning/management, insurance. Who: Dept. of Agriculture (domestic/financial), independent living centers, support groups, JTPA, mental health, group homes, halfway houses, voc. rehab. engineering centers/programs.
Community Access	Access and use community services, programs, and agencies as needed.	VE (to identify), counselor, social workers, instructor/teacher, occupational therapist, job coach, travel training specialist.	Support (encourage, help, praise), give instruction and assistance, accompany individual to community sites, provide transportation (give examples of support activities).	What/Who: Social service agencies, community centers, religious organizations, transportation offices, hospitals/doctors/health service, educational institutions, libraries, advocacy programs, government offices, Voc. Rehab., legal aide, support groups, voting.
Recreation/ Leisure	Access and regularly use recreation programs consistent with leisure interests and activities.	VE (to identify), counselor, social worker, recreation specialist, instructor/teacher (to help develop recreation/leisure skills).	Support (encourage, help, praise), provide/plan opportunities and participate, instruct/assist in development of interests/activities (give examples of support activities).	What/Who: City parks and recreation departments, community centers, religious organizations, clubs/leagues, support groups, educational institutions, fine arts/cultural centers, museums.

Note: Above are examples of persons/programs/activities that need to be identified with regard to specific availability in your community. Use this information to develop your own community-based Transition Resource Chart. Although transportation is included under Community Access, it should be specifically addressed within all of the environments (Thomas, 1991).

Environments

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Job Site Evaluation Rating Form

Client: _____, Site/Location: _____ 2) _____, Evaluator: _____
 Rating Dates: 1) _____ 2) _____ 3) _____

Job Tasks/Critical Vocational Behaviors	Supervision		Quality		Quantity		Others:		Comments
	Avail	Rating	Goal	Rating	Goal	Rating	Goal	Rating	
1.									
2.									
3.									
4.									
5.									
6.									

Appendix B

Supervision Required (Availability)	Quality (Employer Goal)	Quantity (Employer Goal)	Other-Learning, memory, communication, behavior, etc. (Employer Goal)
1. Not able to perform even with constant supervision (employer unable/unwilling to supervise)	1. Poor - must repeat task more than 50% of the time (employer will always allow worker to repeat task to maintain quality)	1. Poor - task performed much slower than other workers (speed is not important to the employer)	1. Far below expectations of other workers (will cause worker to lose job)
2. Able to perform with constant supervision (supervisor is always near worker)	2. Fair - must repeat task more than 25% of the time (employer will usually allow worker to repeat task to maintain quality)	2. Fair - task performed somewhat slower than other workers (employer willing to accept performance slightly below production standards)	2. Slightly below expectations of other workers (employer will tolerate)
3. Able to perform with periodic supervision (supervisor is usually available to worker)	3. Good - repeats a task less than 25% of the time (employer prefers worker keep task repetition to a minimum in maintaining quality)	3. Good - task performed as fast as other workers (employer will not accept performance below production standards)	3. Meets same expectations of other workers (employer considers this a requirement)
4. Able to perform with no supervision (supervisor is rarely available to worker)	4. Excellent - never repeats task (employer will not tolerate task repetition to maintain quality)	4. Excellent - task performed much faster than other workers (same as #3)	4. Exceeds expectations of other workers (employer considers this an asset)

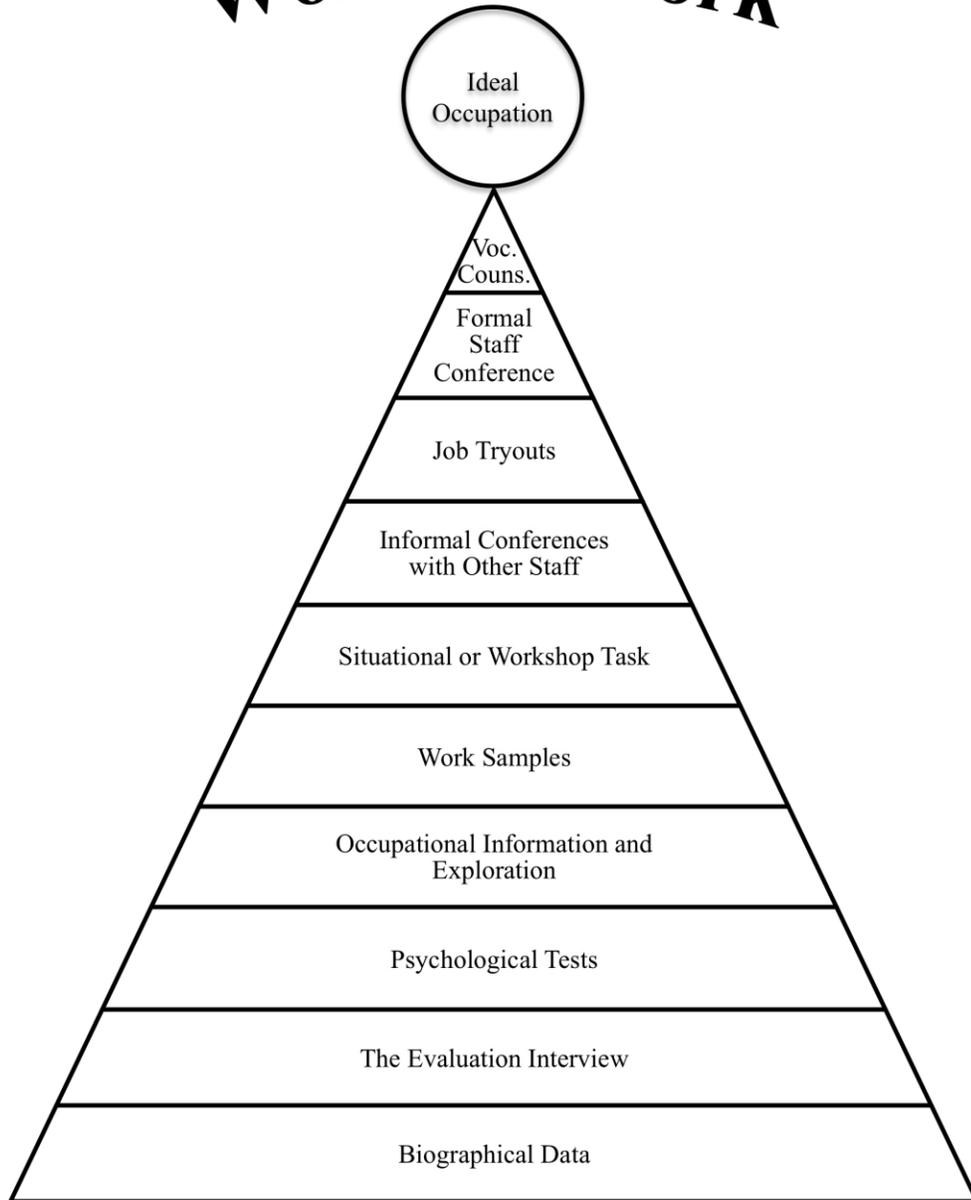
Note: These percentages can be modified

Adapted from K. Botterbusch (1978) by S. Thomas (1991)

Appendix C

The Vocational Evaluation Process

World of Work



Adapted from J. M. Nadolsky (1971) by S. Thomas (1991)

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Appendix D

Vocational Evaluation Process: Basic Steps

Intake

Orientation

Initial Interview

Preliminary Testing - Prevocational Evaluation

Evaluation Planning

Identifying Tentative Direction Of Evaluation

- | | |
|---|--------------------------|
| 1. Hypotheses/Questions | 3. Assessment Techniques |
| 2. Critical Factors/
Information Needs | 4. Persons Involved |

Vocational Assessment/Exploration/Experience

Standardized Testing	Observation
Work Samples	Career Exploration
Situational Assessment	Client Information
Community Based Assessment	Feedback Sessions
Special Projects	Interviewing
Occupational Information	

Client Involvement - Feedback

Staffing

Final Report

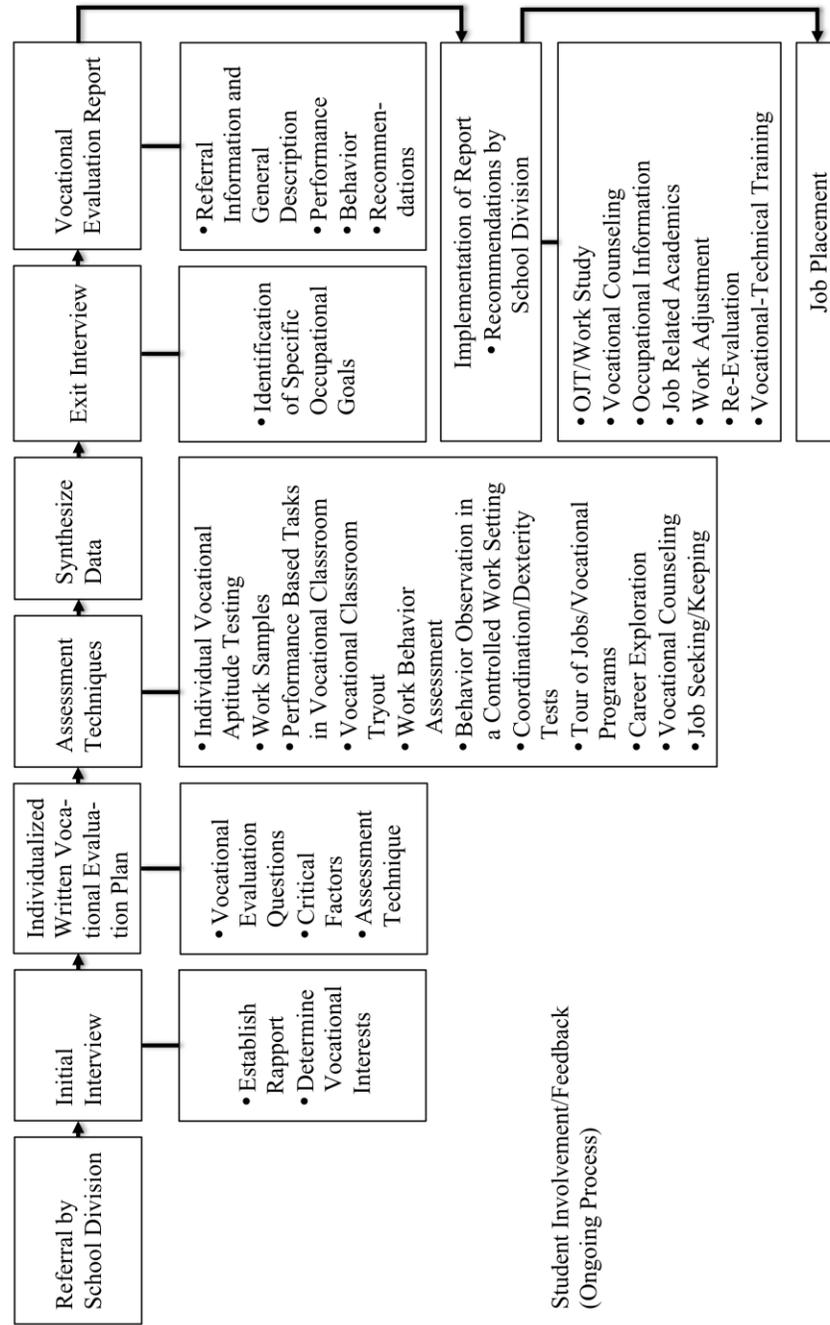
Follow-Up

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Appendix E

Vocational Evaluation Process

Career Assessment Process



Student Involvement/Feedback (Ongoing Process)

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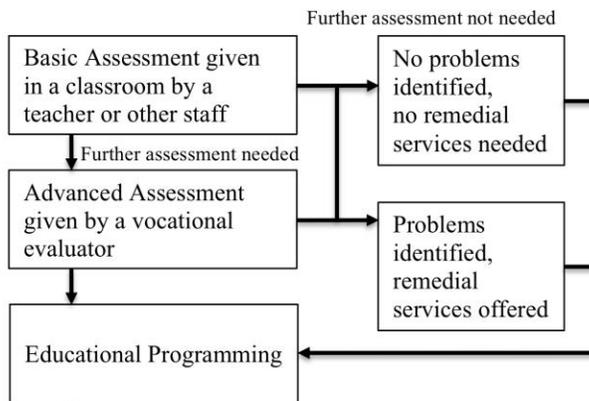
Appendix G

The Three Phase Vocational Evaluation/Assessment Process

Phase I: Prevocational Evaluation

Identification of:

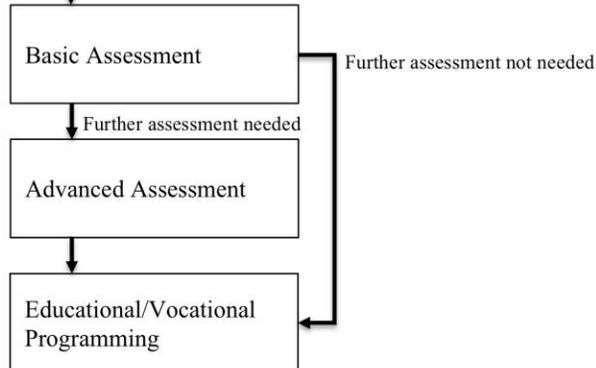
1. Activities of daily living
2. Job seeking skills
3. Job survival skills
4. IEP development needs



Phase II: Vocational Assessment

Identification of:

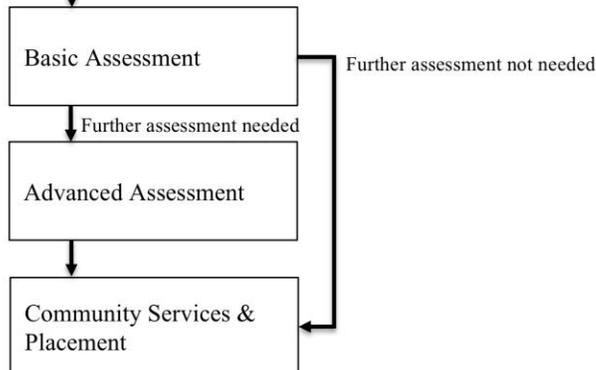
1. Work interests & values
2. Vocational strengths & weaknesses
3. Curriculum needs & modification
4. Vocational programming
5. IEP development needs



Phase III: Vocational Evaluation

Identification of:

1. Work interests & values
2. Vocational strengths & weaknesses
3. Further education/training
4. Job placement or supported work
5. Vocational rehabilitation service needs



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Appendix H

Selected Resources For Standardized Tests

Contact the following companies and request a copy of their catalog.

Academic Therapy Publications
20 Commercial Boulevard
Novato, CA 94949-6191
1-800-422-7249

*Jastak Associates
P.O. Box 3410
Wilmington, DE 19804-0250
1-800-221-9728

American Guidance Service (AGS)
4201 Woodland Road
P.O. Box 99
Circle Pines, MN 55014-1796
1-800-328-2560

pro-ed
8700 Shoal Creek Blvd.
Austin, TX 78757-6897
512-451-3246

CASAS
2725 Congress Street, #1-M
San Diego, CA 92110-2747
(619) 298-4681

Psychological Assessment Resources, Inc.
(PAR)
P.O. Box 998
Odessa, FL 33556
1-800-331-8378

Consulting Psychologists Press, Inc. (CPP)
3803 East Bayshore Road
P.O. Box 10096
Palo Alto, CA 94303
1-800-624-1765

*Psychological Corporation
555 Academic Court
San Antonio, TX 78204-2498
1-800-228-0752
(Ask for their Human Resource
Assessment Catalog)

CTB Macmillan/McGraw-Hill
20 Ryan Ranch Road
Monterey, CA 93940-5703
1-800-538-9547

*SRA/London House
9701 West Higgins Road
Rosemont, IL 60018
1-800-237-7685

EBSCO Curriculum Materials
Box 486
Birmingham, AL 35201-0486
1-800-633-8623

(Ask for their Test Catalog for Business)

Educational and Industrial Testing Service
(EDITS)
P.O. Box 7234
San Diego, CA 92167
1-800-416-1666

Western Psychological Services (WPS)
12031 Wilshire Blvd.
Los Angeles, CA 90025-1251
1-800-648-8857

E.F. Wonderlic Personnel Test, Inc.
820 Frontage Rd.
Northfield, IL 60093-8007
1-800-323-3742

*Site no longer available.

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Appendix I
Selected Resources For Assessment Instruments And Processes,
And Publications And Training Materials For Occupational
Information, Career Exploration, And Job Seeking And Job
Survival Skills

Contact the following companies and request a copy of their catalog.

Arkansas R & T Center
Hot Springs Rehabilitation Center
Media and Publications Section
P.O. Box 1358
Hot Springs, AR 71902
(501) 624-4411 Ext. 316

The following two publications are available from the Arkansas R & T Center.

1. Employability Assessment & Planning in Rehabilitation & Educational Settings
2. Know Thyself: An Empowering Strategy for Involving Consumers in the Vocation Evaluation and Planning Process

Cambridge Educational
P.O. Box 2153, Dept. JO2
Charleston, WV 25328-2153
(800) 468-4227

*Career Aids
20417 Nordhoff St., Dept. T E 6
Chatsworth, CA 91311
(818) 341-2535

Center on Education & Work
Publications Unit, Department A
University of Wisconsin - Madison
964 Educational Sciences Building
Madison, WI 53706
(800) 446-0399

Educational and Industrial Testing Service (EDITS)
P.O. Box 7234
San Diego, CA 92167
(619) 222-1666

*Educational & Assessment Systems
P.O. Box 3414
Lynchburg, VA 24503
(800) 572-7972

JIST Works, Inc.
720 North Park Avenue
Indianapolis, IN 46202-3431
(800) 648-5478

The Rehabilitation Resource
Stout Vocational Rehabilitation Institute
University of Wisconsin - Stout
Menomonie, WI 54751
(715) 232-1342

The following publication and inventory are available from the Materials Development Center.

1. Vocational Evaluation Systems and Software: A Consumer's Guide
2. Functional Assessment Inventory

Rehabilitation Research and Training Center
Virginia Commonwealth University
VCU Box 2011
Richmond, VA 23284-0001
(804) 257-1851

Research and Training Center
Stout Vocational Rehabilitation Institute
University of Wisconsin - Stout
Menomonie, WI 54751
(715) 232-2236

*Site no longer available.

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The *Vocational Evaluation and Career Assessment Professionals Journal (Journal)* is an official publication of VECAP. The purpose of the *Journal* is to advance knowledge and practices in the fields of vocational evaluation, career assessment, and work adjustment. The *Journal* has three target audiences: practitioners and other professionals, educators, and consumers. The *Journal* provides readers with critical information to inform their practice in assessment or evaluation and therapeutic adjustment services, all with a vocational perspective. Practitioners, educators, researchers, and consumers may submit a manuscript for review. You do not have to be a member of VECAP to submit.

The *Journal* seeks the following types of manuscripts: research; theory building; perspectives on vocational evaluation or career assessment; reviews of books, tests, work samples; or other related topics of interest.

Manuscript Submission

1. Use the Manuscript Review Form (see VECAP.org) to determine if the manuscript is ready for submission.
2. Submit the manuscript as an email attachment to <mailto:journal@vecap.org>.
3. Receive a confirmation email (within 1 to 2 days) with manuscript review number.
4. Manuscript is blind reviewed by the Editorial Board or invited reviewers who have expertise in a specific topic (typically requires 3 to 4 weeks).
5. Receive status email with one of the following conditions: accepted, accepted with revisions, or rejected.

Submission Guidelines

Each manuscript must be prepared according to the current edition of the *Publication Manual of the American Psychological Association*. All manuscripts except book reviews and brief reports require a 150–250 word abstract with three keywords. An additional *Journal* requirement is to include an author bio(s), which is a single page that contains the author's name(s), credentials, and short (100 words) biographical information that will appear in the *Journal* if the article is published. Reviews of books, work samples or work sample systems, or other related topics of interest to the readers follow a guideline of 800 to 1400 words and no abstract.

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