

Vocational Rehabilitation: History and Practice

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Like many domains within vocational psychology, vocational rehabilitation is a dynamic enterprise, constantly evolving in response to contemporary issues, the changing demographics of the work force, and to alterations in health and public policy. Although psychologists have been involved in vocational rehabilitation for almost a century, the area is ultimately multidisciplinary, and professional psychology does not claim any unique dominion over any aspect of vocational rehabilitation. Other professions that borrow heavily from the psychological literature have been identified with the area for decades (e.g., rehabilitation counseling and vocational evaluation). Yet the dynamic and evolving nature of vocational rehabilitation and the relevance of psychological principles to the enterprise ensure a recurrent and influential role for many psychological specialties.

In this chapter, we review the various aspects of vocational rehabilitation that contribute to its dynamic nature, including the different professions, policies, and population trends that dictate changes. We provide a brief overview of the history of vocational rehabilitation in the United States that demonstrate the impact of public policy on its evolution. This will also incorporate the emergence of contemporary legislation that influences current changes in research and practice. We provide a concise overview of the theoretical perspectives and empirical research from a psychological perspective that represents major contributions from vocational psychology,

and then culminate with some observations about the present trends in vocational rehabilitation that illuminate new and emerging roles for psychology.

DEFINING VOCATIONAL REHABILITATION

Vocational rehabilitation (VR) traditionally refers to the provision of some type of service to enhance the employability of an individual who has been limited by a disabling physical condition. Physical disabilities, chronic diseases, congenital problems, and psychiatric conditions can adversely affect vocational opportunities and development in many ways. Individuals with these conditions may experience considerable mobility restrictions; have restricted access to certain environments essential for education, work performance, or training; or have limited educational and training opportunities during their childhood and youth that subsequently impair their preparation for work. In addition, persons are affected by whether they are perceived as having a disabling condition. Persons with these conditions often face financial hardship and people who are unemployed and who lack financial resources are at the highest risk for psychosocial problems among the unemployed (Price, 1992). Additionally, individuals with these conditions often have ongoing health care needs that require adherence to self-care regimens or routine monitoring to maximize daily health. They also encounter many stereotypic and negative attitudes from potential employers and peers that limit their vocational opportunities and integration into the workplace. Persons with mobility restrictions may also require job modifications to accommodate their abilities and limitations.

Historically, people with disabling conditions have attracted the attention of social and private agencies as they often face daunting obstacles to full participation in their communities including employment. Federal and state vocational rehabilitation agencies have endeavored to coordinate the provision of services as needed from different professions (e.g., medicine, education, and psychology) on an individual basis to prepare a client for work (Jenkins, Patterson, & Szymanski, 1997). Many professional disciplines may be involved in the rehabilitation process, representing fields in education (e.g., special education and vocational education), medicine (e.g., psychiatry), allied health disciplines (e.g., physical therapy and occupational therapy), and psychology (e.g., rehabilitation psychology and health psychology). Rehabilitation counseling is most often associated with the vocational rehabilitation process, given its association with legislation that created federal and state rehabilitation agencies; however, the case management model adopted by many in this profession has provided new avenues for practice in the private sector (Shrey & Lacerte, 1995).

HISTORY OF VOCATIONAL REHABILITATION IN THE UNITED STATES

Prior to the 20th century, precursors to vocational rehabilitation (VR) services were generally provided in some fashion by charitable organizations (e.g., the Salvation Army and the American Red Cross). Other services were formally provided by institutions that were founded or influenced by reformers of the era such as Thomas Gallaudet, Dorethea Dix, Samuel Gridley Howell, and Washington Gladden (Oberman, 1965; Rubin & Roessler, 2001; for more detailed reviews of the history of VR, see Jenkins et al., 1997; Martin & Gandy, 1999; Peterson & Aguiar, 2004). The focus of these efforts was often to make life easier for individuals with disabilities but often resulted in further isolation and stigmatization. By the end of the 19th century, the industrialization of the American workforce, combined with pressure mounting from immigration, urbanization, and advocacy from the Populist and Progressive political movements prompted a greater recognition of the complexity of social issues germane to the welfare and economy of the United States. This in turn contributed to a greater sense of government involvement in addressing and resolving social issues, particularly those detrimental to the labor force. These issues received federal attention at the turn of the century under the watch of a presidential administration responsive to greater involvement among the federal government, private enterprise, and social welfare.

Vocational Rehabilitation in the Early 20th Century

Social welfare concerns pressed into the federal agenda during the presidency of Theodore Roosevelt. Government involvement occurred at several levels: A presidential committee in 1908 concluded that public health was a responsibility of the federal government, and the responsibility was too great for private charities (Oberman, 1965; it should be noted that private agencies remained prominent; for example, Goodwill Industries and B'nai B'rith were both founded at the turn of the century). Particularly compelling were the high rates of industrial accidents that disabled workers who were often left without recourse to rehabilitation. Thus, worker's compensation legislation was enacted in 1908 in the Federal Employees Compensation Act to assist federal workers in hazardous occupations; this was expanded in subsequent state legislation that typically ruled workers need not assume responsibility for injuries resulting from work. Most states had enacted worker compensation legislation by 1921 to provide disabled workers with some form of compensation, to relieve charities of financial responsibility for these people, and to study causes for accidents to determine means of prevention.

The activity of organized labor and the increased urbanization of the labor force created a need for relevant training and vocation education programs.

Many workers often lacked skills or possessed skills that were rendered obsolete by new technology and industry. The Smith-Hughes Act of 1917 provided matching funds to states to develop vocation education programs, and the Federal Board of Vocation Education was created as a part of the legislation to administer VR programs.

International Conflicts and VR

Federal support for all aspects of rehabilitation—including educational, medical, and vocational—has accompanied the involvement of the United States in times of war (Larson & Sachs, 2000). World War I required the unprecedented infusion of vocational assessment to classify enlisted personnel; an increased need for VR efforts was required for the large number of veterans returning from the front with acquired physical disabilities. The Soldiers Rehabilitation Act (1918) provided funds to rehabilitate disabled veterans, and the Federal Board of Vocational Education was to administer these services. In 1921, the Veteran's Bureau was created; in time, this evolved into the Department of Veteran's Affairs.

The Disabled Veterans Act (1943) was passed during World War II to assist disabled service personnel to return to work. The Serviceman's Readjustment Act (1944) authorized further training and education for those whose education was interrupted by service. This was later expanded in the Veteran's Readjustment Assistance Act in 1952 to accommodate Korean-era veterans.

The Barden-Lafollette Act (1943) ensured services to persons with mental retardation and mental illness to improve their employability. Although this was not related to the provision of VR to service personnel, it was in part influenced by the labor needs to offset the labor shortage during wartime.

VR Legislation and Societal Change in the Mid-20th Century

Beginning with Public Law 236 (the Smith-Fess Act of 1920) the federal government initiated a series of acts that expanded VR services to citizens who were not affiliated with the government and who were not necessarily covered by worker compensation laws. Public Law 236 essentially ensured vocational education to persons with physical disabilities who were unable to work. This legislation was extended several times in later years. The Federal Social Security Act (in 1935) made the federal-state VR program permanent and provided benefits for persons who were incurred disabilities that prevented them from significant employment. Subsequently, the Randolph-Shepard and Wagner-O'Day Acts (in 1936) enhanced job opportunities on federal property for persons with visual impairments and established the National Industries for the Blind.

The period following World War II has been regarded as the “golden age” of VR (Rusalem, 1976). This period was initiated by the passage of the Vocational Rehabilitation Act of 1954, which provided funds to higher education to train rehabilitation professionals. Funds were also provided to expand rehabilitation facilities, to expand services available to persons with mental illness and mental retardation, and provide funds for research and to states to upgrade rehabilitation agencies. This legislation was extended in 1965 to address architectural barriers and to extend the length of services to individual clients. In 1967, legislation was again amended to address the needs of persons who were deaf-blind and to migratory agricultural workers and their families. Amendments in 1973 established a priority of services to eligible persons and required the use of individualized written plans for clients. These amendments also included Section 504 that required institutions or programs receiving federal assistance to be accessible to persons with disabilities, which in part set a stage for a civil rights agenda. This legislation allowed greater consumer input in the rehabilitation process and in 1978 was expanded to support independent living services. Similarly, PL 94-142 mandated individualized written education plans for school children with special needs. Generally, legislation during this period reflected a greater awareness of societal issues and paralleled the Civil Rights movement in its recognition of the rights of persons with disabilities.

Contemporary Legislation and VR

Obvious in this brief overview is the intricate link among VR, public policy, and the professions affiliated with VR. As federal and state support increased, VR grew and expanded. Several professional disciplines owe much of their identity to this support and the events that contributed to the need for these policies. Rehabilitation counseling was one discipline that benefited from this relationship as it was essentially created by the 1954 rehabilitation legislation. The legislation also dictated the model of vocational rehabilitation services in which the rehabilitation counselor was at the core as the primary coordinator. Many rehabilitation counseling programs flourished when federal support was provided to colleges and universities to train rehabilitation service providers and “qualified rehabilitation personnel” to administer and coordinate programs. Rehabilitation counseling has often been considered “synonymous with . . . the State-Federal rehabilitation program” (Jenkins et al., 1997, p. 1).

Federal involvement in VR also contributed to the medical specialization of psychiatry. Complex cases that involved disability, neurological trauma, and long-term medical management necessitated medical expertise in “physical medicine and rehabilitation,” which was recognized in 1947 as a specialty board by the American Medical Association (Allan, 1958). Many of these

physicians served in the medical corps during the world wars and returned to work in hospital settings and advocate for the needs of the individuals they served. The relationship between psychiatry and the federal agencies that support training and research in disability continues.

Professional psychology also benefited from federal sponsorship of VR. Many psychologists were hired as vocational rehabilitation specialists for work in medical facilities operated by the Veterans Administration (Larson & Sachs, 2000). Furthermore, several federal agencies identified with VR—the Department of Health, Education, and Welfare (in 1958) and the Office of Vocation Rehabilitation (in 1959)—financially supported conferences for psychologists who shared interests in rehabilitation. These conferences provided the roots for the Division of Rehabilitation Psychology within the American Psychological Association (Larson & Sachs).

As the 20th century approached its end, the federal government took a new perspective of VR, driven in part by a greater recognition of individual rights and by a greater value on the role of the private sector. This perspective was also influenced by a greater realization of impending costs and financial burdens incurred by earlier legislation. This legislation reflected the changes that occurred with a more fiscally conservative electorate and like-minded presidential administrations. To a certain extent, legislation increased support for programs that enhanced the transition from school to work for students with disabilities, which resulted in increased funding for the Office of Special Education Rehabilitative Services (Hanley-Maxwell, Szymanski, & Owens-Johnson, 1997). The Individuals with Disabilities Education Act (in 1990) and the School-to-Work Opportunities Act (in 1994) increased the linkage between special education and work.

This political climate also fostered the development and passage of the American with Disabilities Act (ADA; 1990). Much of the impetus for passage of the ADA came from a broad coalition of groups made up of persons with disabilities often working together in an unprecedented manner. The ADA granted rights and protections to persons with disabilities previously accorded to women and minorities under the Civil Rights Act of 1964. The ADA is a highly significant act that affirms accommodation, equal opportunity, access, and protections from individuals and public and private institutions. Title II specifically prohibited discrimination based on disability in the employment arena.

A second major series of legislation appeared to simultaneously support individual choice in the rehabilitation process, facilitate reemployment of persons with disabilities, and reconfigure traditional links between public-sponsored VR and the professions created by VR legislation over the previous decades. Specifically, the Workforce Investment Act (WIA, 1998) placed provisions of the Rehabilitation Act into a more “mainstream” labor-oriented legislation. Although it may be too early to understand the full import for the

change, it theoretically fits the model that persons with disabilities are to be served in an inclusive and integral way. WIA operates under a “job fit” model rather than under a “full potential” model that has traditionally characterized the vocational rehabilitation process. The Ticket-to-Work/Work Incentive Improvement Act (TTW/WIIA; 1999) was designed to move individuals off financial support from social security disability programs to the ranks of the employed. This legislation was fueled in part by consumers and critics who argued that the bureaucratic “red tape” of many VR activities had “failed” many persons with disabilities (Cook, 1999; Olkin, 1999); thus, a consumer movement emphasized the need for greater input, direction, and choice in rehabilitative services outside the traditional VR programs (Kosciulek, 1999). Others argued that federally supported disability insurance programs (i.e., Social Security) provided economic incentives to stay unemployed; however, others have noted that the loss of health care coverage—provided by the disability program with SSA—was one of the major disincentives to return to work. Nevertheless, the specter of impending financial collapse of the Social Security Administration prompted legislators and policymakers to streamline their services and provide incentives for beneficiaries to enter the workforce (Growick, 2000). In the process, this legislation appears to signal the end of the ongoing—if not strict—reliance on the public sector to provide rehabilitative services to SSA beneficiaries (Growick, 2000).

VOCATIONAL PSYCHOLOGY AND VR

Less apparent in this overview is the scholarly drift of the “rehabilitation” professions—those that evolved from decades of federal and state sponsorship—from the larger core area of vocational psychology (Hershenson, 1988). In many ways, VR compelled practitioners to scrutinize their traditional scope of practice and understanding and demanded a greater sense of relevance that was not available in the typical study of undergraduates and theory development. Important as assessment is to VR, many psychometric instruments popular in the mid-20th-century were not easily administered to persons with physical, visual, or auditory impairments, and normative data were lacking. The incidence of many disabilities is such that it has been difficult over the years to obtain representative samples for developing norms for most instruments. Other tests useful in rehabilitation such as work samples and vocational evaluation tools were not necessarily of interest to mainstream academic researchers in psychology and education.

Thus, specialty journals devoted to rehabilitation topics were published and maintained, and many rehabilitation researchers found a scholarly home in these journals that were “out of the mainstream” (Shontz & Wright, 1980). Unfortunately, this eventually contributed to sense of isolation from traditional

areas of practice and from many training programs (Jansen & Eisenberg, 1982), and citation patterns in the *Rehabilitation Psychology* journal reflected this concern, as many researchers were relying on work published in medical outlets (Elliott & Byrd, 1986). Rehabilitation counseling, however, arguably had an established literature base (Wright, 1980). Citation patterns of authors contributing to this literature during this same era displayed a clear interest in the roles, functions, and competencies associated with the profession, and maintained an ongoing albeit decreasing interest in scholarly sources of vocational theory and research (e.g., *Journal of Vocational Behavior*; Elliott, Byrd, & Nichols, 1987; Elliott, Byrd, Nichols, & Sanderson, 1987).

During the “golden era” of VR, many mainstream counseling psychology training programs housed faculty who obtained VR funds to generate research germane to theory and practice in vocational psychology. For example, external funds sponsored in part the development and study of the Minnesota Theory of Work Adjustment (Dawis & Lofquist, 1984) at the University of Minnesota. Many of the instruments and initial tests of this model were conducted with VR clientele. Federal funds also supported counseling psychology faculty at the University of Missouri–Columbia in publishing one of the most influential documents defining the VR process and the rehabilitation counseling profession (McGowan & Porter, 1967). These works also supported graduate students who later made other significant scholarly contributions to vocational psychology.

In this formative era, VR brought many psychological disciplines under the rubric of rehabilitation psychology. This division within the APA was a loose confederacy of colleagues representing psychology, rehabilitation counseling, social work, and special education. Prominent among these disciplines was a contingent of social psychologists who shared the conviction that societal attitudes, discrimination, and stigma were believed by field theorists to be major culprits preventing the full integration of persons with disabilities (Wright, 1960). Proponents of this perspective maintained that environmental issues as much impact on personal adjustment as personal traits, and disability characteristics accounted for very little variability in personal and social adjustment (Meyerson, 1988). Subsequent research examined the impact of attitudes toward persons with stigmatizing conditions in interpersonal interactions, relationships in school environments, job interviews and applicant evaluations, and attitudes of employers toward persons with disabilities, generally (Dunn, 1994; Yuker, 1988). This work also culminated in the empirical study of social issues such as misuse of parking spaces reserved for persons with disabilities (White et al., 1988) and attitudes of professional service providers toward persons with stigmatizing conditions (Eberly, Eberly, & Wright, 1981). In this respect, VR influenced research that presaged the social-clinical psychology interface (Snyder & Forsyth, 1991).

Similarly, VR required academicians in training programs to examine sensitive topics of race, ethnicity, and culture long before this area was recognized as a “third force” in psychology. For example, state and federal agencies provided funds to provide VR services on tribal reservations as early as 1947, and subsequent work over the years led to a greater recognition of the psychosocial barriers facing Native Americans, generally (Marshall, Johnson, & Lonetree, 1993). Other legislation mandated VR to consider acculturation in the rehabilitation process in the 1970s. With little available knowledge about this issue, several researchers in the rehabilitation counseling literature began to describe the different mannerisms, values, and interpersonal styles of migrant workers and their families (Hammond, 1971). Attempts were made to determine appropriate interventions for other disenfranchised workers from minority backgrounds (e.g., Smith & Hershenson, 1977). Disparities in racial and ethnic groups in their use of VR programs were identified (Atkins & Wright, 1980). Like many topical areas, these researchers did not attempt to devise some theoretical framework to understand these differences, but their observations and findings laid important groundwork for later theorists and for other influential statements on diversity and ethnicity in VR (Leal, Leung, Martin, & Harrison, 1988). The 1992 amendments to the Rehabilitation Act set aside a small percentage of the total appropriations to address underrepresented populations and to build capacity for ethnic or racial minority groups to develop relevant programs and research.

Many clinical researchers who embraced a field-theory perspective of rehabilitation—namely, that behavior is best understood as a function of the person and the environment—placed a greater premium on the study of personality characteristics in the adjustment process, particularly in the context of vocational adjustment. Pioneering researchers realized important patterns in vocational interest profiles indicative of personality characteristics and behavioral patterns that may have contributed in part to the onset of the disability (“accident proneness,” Kuncze & Worley, 1966). Others found important distinctions between persons with disability who were being “productive” (including work-related activities) and those who were not as a function of goal orientation (Kemp & Vash, 1971). Eventually, some researchers by passed the indirect assessment of personality characteristics to study these matters with measures of psychopathological personality patterns as they related to vocational outcomes (Fordyce, 1976). As we see in subsequent sections, this line of reasoning continues in several research programs in clinical and occupational health psychology.

The involvement of psychologists in medical rehabilitation also foreshadowed the contemporary areas of health psychology and behavioral medicine. Much of this involvement was confined to medical school departments of physical medicine and rehabilitation, and to services provided by medical centers in the Veterans Administration, these psychologists plowed new ground

in the study of acquired disability such as chronic back pain (Fordyce, 1976), spinal cord injury (Trieschman, 1980), and traumatic brain injury (Prigatano, 1986). Yet, for many rehabilitation psychologists the focus shifted away from issues of employability and work status and their research and practice was construed within a biomedical model. The almost exclusive focus on acquired disability apparently occurred at the expense of a broader perspective that embraced chronic disease and illness and primary and secondary prevention. Some observers suspect this in part accounted for the lack of growth in rehabilitation psychology and the rapid ascent of health psychology (Frank, 1999). Ironically, health psychologists have become more interested in vocational issues, and their interests are reflected in recent peer-review journals for their research (*Journal of Occupational Rehabilitation*, *Journal of Occupational Health Psychology*).

Consumer advocates have criticized rehabilitation psychology for its long-standing association with a biomedical perspective of disability and its perceived insensitivity to the culture of disability (Olkin, 1999). In 1982, it became apparent in survey research that rehabilitation psychologists were found most often in medical and independent practice settings, and over half of those surveyed reported few if any referrals from vocational rehabilitation agencies (Jansen & Fulcher, 1982). Unfortunately, it was also apparent that many accredited clinical and counseling psychology programs in this time period did not provide doctoral students with training in disability issues as recommended by Section 504 of the Rehabilitation Act of 1973 (Spear & Schoepke, 1981). The lack of exposure to disability and disability-related clinical experiences has been documented in other research as well (Leung, Sakata, & Ostby, 1990): Vocational rehabilitation was “never” addressed by 62.9% of the respondents from clinical psychology training programs, and 42.9% of the counseling psychology programs “seldom” address VR. Thus, many psychologists trained in accredited programs have little or no exposure to VR.

THE REHABILITATION PROCESS: BALANCING THE IDEAL AND THE REALITY

The concept of “total rehabilitation”—the title of a seminal text in the field (Wright, 1980)—conveys the aspiration of assisting an individual in attaining the highest possible level of function in personal, social, and vocational roles. To manage the VR process, then, the skills were required of “qualified rehabilitation personnel,” who could expertly coordinate and oversee a full array of services as needed, which could be provided by different medical, educational, and vocational specialties, depending on eligibility and the nature of a case. Given the long-standing association between rehabilitation counseling

and state-federal VR agencies, Wright regarded this profession most appropriate and uniquely qualified for coordinating VR services. Recognizing the academic roots of the profession in counseling psychology, Wright (p. 22) asserted that although counseling was an integral part of the VR process, the rehabilitation counselor was uniquely skilled to meet the needs of persons with disability and address the psychosocial issues they encountered.

The rehabilitation process can involve a sequential and interrelated set of activities that have to be initiated and coordinated. Upon referral, a prospective client is screened and evaluated for eligibility and appropriateness for VR. In the format characteristic of many state agencies, a referral may be directed to a rehabilitation counselor from any number of sources. The determination of provision of VR services to increase employability—and the extent of possible services and coverage—may be influenced by the severity of the disability, the prior psychosocial and legal history of the applicant, and the availability of funds remaining in the state VR budget for the fiscal year. Once determination is made for sponsorship, the assigned counselor ideally works with and on the behalf of the client to initiate, arrange, and coordinate services for the client.

Part of this process often requires the counselor to assess the client's occupational interests and specific job skills (e.g., skills operating equipment, general intelligence, range of physical motion, work values, temperament or personality characteristics, and worker traits such as dexterity and motor control). This assessment may be accomplished in part by the rehabilitation counselor; others whose services would be obtained by the rehabilitation counselor may conduct other assessments. Similarly, an evaluation of the client's transferable skills would be conducted (DeVinney, McReynolds, Currier, Mirch, & Chan, 1999). To be useful, this kind of information would best be used in the context of the local job market, and in the event of a prospective employer, with some knowledge of job analysis, work-site accommodation or modification, and job skills training (DeVinney et al.). Finally, rehabilitation counselors are often involved with employers and other job placement activities. In most state agencies, these activities—and the burgeoning caseload—typically left little time or expectation for the counselor to provide adjustment “counseling” (Thomas & Parker, 1981). It appeared that rehabilitation counseling, then, drifted away from the broader area of counseling toward a more distinct and separate profession characterized by administrative and managerial duties (Thomas & Parker, 1984).

In the years following the “golden era,” VR encountered many new challenges during that altered many aspects of rehabilitation counseling as it was once envisioned, and new doors opened in the private sector for rehabilitation counselors. These challenges also ushered in new opportunities for other professions to become more active in the VR process. First, the 1980s witnessed a steady rise in the incidence of disability and work-related injury

and in chronic disease (and these increases continue to pose the greatest single challenge to health care service delivery systems). In part this trend accompanied the aging of the American public, but the rate and severity of chronic disease and illness (e.g., HIV, diabetes, and hypertension) eventually culminate in some disability (e.g., stroke, amputation, and blindness). As emergency medicine improved, more individuals survived trauma and then faced life with a life expectancy that approximated the average life span (e.g., spinal cord injury and traumatic brain injury).

These circumstances forced health care systems to reconfigure their payment systems and reimbursement programs, realized in prospective payment systems and in health maintenance organizations (HMOs). The 1980s saw an unprecedented era of job opportunities for psychologists who were needed in rehabilitation hospitals and facilities to provide direct services to individuals and their families (Frank, Gluck, & Buckelew, 1990). VR also responded, and programs embraced large and complex caseloads that necessitated considerable management expertise. Many rehabilitation counselors spent the bulk of their time in case management activities that did not permit time for counseling in the traditional sense (Shaw, Leahy, & Chan, 1999).

Opportunities flourished in the private sector during this time, as many industries worked with insurance companies to rehabilitate injured workers (Shaw et al., 1999). These roles were well suited for a case management model. The rehabilitation process in the private sector also encompassed vocational assessment and planning and awareness of psychosocial and functional issues and of community resources. It also required a working knowledge of employment- and disability-related legislation and regulations, and it opened new roles in expert witness testimony and life care planning (Shaw et al.).

THEORY AND RESEARCH IN THE VR LITERATURE

Psychological theory takes on many forms in applied psychology, and many influential leaders in VR were well grounded in the use of theoretical perspectives in psychometrics and assessment, personality, counseling, and social psychology (Lofquist, 1960). However, the day-to-day routines of the VR process—reflected in the previous section—gradually eroded practitioner confidence in the “academic” theories associated with psychological research, and many practitioners eschewed “psychologized” coursework in favor of training in labor market issues and job assessment, work evaluation, and placement (Olshanky & Hart, 1967). Research that addressed the practical, everyday concerns became more attractive to individuals in case management positions, or in situations in which face-to-face counseling in the more traditional forms became infrequent. Additionally, the multidisciplinary nature of

VR—which gathered practitioners from counseling, psychology, education, and medicine under one roof—did not tolerate lines of thought that were not easily communicated or understood by other colleagues invested in the VR enterprise. The decreased presence and interest in vocational theory in subsequent training and research was then no accident or oversight. Other than a firm reliance on sound psychometric properties in test development and assessment, much of the VR literature strayed from contemporary theoretical advancements in several areas germane to vocational psychology. Perhaps largely the drift away from its academic roots occurred in response to and dependency on federal legislation and accompanying financial support for VR (Hershenson, 1988).

Career Development

In the early years of the interface between VR and counseling psychology, existing theories of career development were not readily applicable to the study of and service delivery to persons with disabilities (Conte, 1983). The difficulties in translating these models into meaningful research and interventions became readily apparent to practitioners. Adults who acquire disabilities typically have crystallized interest patterns that developed well within the processes described by career development models applicable to people in general. These interests are quite stable over time as a person lives with a disability (Rohe & Athelstan, 1985; Rohe & Krause, 1998). The prevailing career development models do not address the subsequent issue of finding meaningful work and activity to match interest patterns and values after disability onset.

In other conditions, neurological damage may severely limit or obviate preinjury interest patterns and values. Alterations in brain-behavior relationships—common in moderate to severe traumatic brain injury—can adversely affect otherwise established patterns of workplace behavior. People who mature with congenital or childhood-onset disabilities, however, may lack social and educational opportunities that contribute to the development of career interests, values, and skills. These deficits would ideally be circumvented in school-based career education programs (Brolin & Gysbers, 1989; Szymanski, King, Parker, & Jenkins, 1989).

The best available career development model for conceptualizing work and career issues among persons with disabilities takes into account the complex ways characteristics of the person and environment interact with—and influenced by—ongoing processes and activities (Szymanski, 2000). This particular model freely acknowledges the appropriateness of other theories of career development in certain circumstances, and suspects that no model should aspire to be unique to all persons with disabilities (a sentiment echoed by others; Beveridge, Craddock, Liesener, Stapleton, & Hershenson, 2002).

Yet the model appreciates the many ways various public and private entities can impinge or promote career trajectories among these individuals, and it recognizes the beneficial role of work and avocational activities in the well-being of persons with these conditions.

Work-Related Disability

Influential theorists openly found no connection between the type of disability and the preexisting or preinjury personality characteristics (Shontz, 1970; Wright, 1960). These pioneers placed a higher premium on the study and appreciation of the environment in the $B = f(P \times E)$ equation that served as the theoretical lodestar in the psychological branch of VR. However, some researchers held keen interest in the “person” aspect of this equation as it related to and interacted with the environment. Not surprisingly, psychologists in medical settings were among the first to pursue this line of inquiry. For example, Fordyce (1976) relied on an operant conditioning model to appreciate how some individuals may display greater functional impairment and work-related disability—independent of physical findings and objective indicators of physiological damage—as their “disabled” behavior received more attention, support, respite, and occasional financial reward than did nondisabled, functional behavior. This paradigm would explain in part why some individuals would not return to work, or resume routine, everyday tasks of daily living. Moreover, Fordyce maintained that these behavioral patterns were associated with distinct personality profiles detected on the Minnesota Multiphasic Personality Inventory (MMPI).

This line of inquiry grew rapidly with the increase in work-related musculoskeletal disability claims during the 1980s and the corresponding recognition that objective indicators of disability were poor predictors of employability (Fitzgerald, 1992). In contrast, many psychological and social characteristics were associated with disability claims and employability. The National Institute for Occupational Safety and Health (NIOSH) urged the study of risk factors that contribute to the onset of disability and impairment so that effective prevention programs could be implemented (NIOSH, 1986). Several research programs examined the link among personality characteristics, disability, and vocational outcomes.

Relying on pathological measures of personality administered during pre-employment screening, Bigos and colleagues (1991) found Scale 3 of the MMPI significantly characterized employees at Boeing who would incur a back injury and make a disability claim over the duration of a year. This was one of the first studies to demonstrate that certain preemployment personality characteristics may be prospectively predictive of work-related disability. Related studies have shown, too, that high scores on Scale 3 are significantly and prospectively predictive of persons who return to work after participating

in a chronic back pain rehabilitation program, and these relations have been found over 6 months (Gatchel, Polantin, & Kinney, 1995) and 1 year (Gatchel, Polantin, & Mayer, 1995). Persons who have higher scores on this scale were less likely to be employed in these studies. Although the mechanisms through which these personality characteristics contribute to the onset of an injury and return to work are unclear, there is some indication from the Boeing study that the psychological features of naivety and extreme self-centeredness assessed by Scale 3 may be more important than somatic symptoms that are also associated with this scale (Fordyce, Bigos, Battie, & Fisher, 1992). This research program suggests that certain behavioral and personality characteristics may place certain individuals at risk for work-related injuries and subsequent disability claims. Such information may well open new opportunities for vocational psychology in the private sector in anticipating and managing rehabilitative costs.

Job Training and Placement

Many different approaches have been used to guide job training and placement. Few of these have been construed within the framework of testable theoretical models. For example, cognitive-behavioral models have been used to explain environmental contingencies in work environments that might contribute to or prevent addictive behaviors among persons returning to work following alcoholism rehabilitation (Newton, Elliott, & Meyer, 1988). Cognitive-behavioral and operant principles are typically used to conceptualize external contingencies that might reinforce disabled behavior and discourage employability. These have also been used to develop some intervention strategies that motivate individuals to return to work (Franche & Krause, 2002).

Cognitive-behavioral elements have been incorporated into several popular job training and placement programs; although these techniques may not be explicitly described as such, nor are they routinely operationalized into testable propositions. Nevertheless, interventions like job clubs (Amrine & Bullis, 1985; Corrigan, Reedy, Thadani, & Ganet, 1995), job coaches (Cimera, Rusch, & Heal, 1998; Mautz, Storey, & Certo, 2001), and supported employment (Wehman, Bricout, & Targett, 2000) utilize psychoeducational techniques to instruct clients in a fashion common to many cognitive-behavioral treatments. Of these, supported employment has received considerable attention and acceptance among practitioners.

Supported employment entails the use of employment specialists to train individuals in job-related skills on site; thus, arrangements are made with work sites that accommodate staggered and intermittent work schedules for clients to gradually assume work duties (Wehman et al., 2000). This approach permits specialists to observe and correct problematic behaviors that can

compromise work adjustment, and it provides a flexible means of redirecting a client or finding another more suitable placement.

The basic features of supported employment can be labor intensive for individual cases, but they are well suited for use with individuals who have behavioral difficulties due to impairments in brain-behavior relationships (e.g., traumatic brain injuries). Typically, individuals with these conditions experience difficulties with inappropriate and impulsive behaviors, inadequate coping skills, and poor judgement that can be disruptive in interpersonal interactions and social situations. Specialists work individually with clients onsite, and efforts are directed toward immediate interventions for problems as they occur in the naturalistic setting (Wehman et al., 1989).

Supportive employment has also been used to assist persons with borderline to severe mental retardation, long-term mental illness, and physical and sensory disabilities, and this individualized approach to job placement produced employment rates greater than those observed for traditional group approaches (Kregel, Wehman, & Banks, 1989). In one of the more elegant empirical investigations to date, two supported employment approaches were compared among 152 unemployed, inner-city persons with severe mental disorders (Drake et al., 1999). Individualized placement and ongoing support was superior to an enhanced VR program, resulting in significantly more work hours and a higher rate of competitive employment. Generally, the extant literature—including eight randomized clinical trials—indicates supported employment is one of the few evidence-based practices available in VR, and it is generalizable to a wide range of populations and subgroups; but access to these programs and their relative cost-effectiveness is an issue for future research and policy (Bond et al., 2001).

Multidisciplinary programs for rehabilitating persons with chronic pain syndromes have shown considerable promise. Although these programs differ tremendously across clinics, an impressive program with documented success features a rigorous outpatient 3-week experience 57 hours per week, including work-hardening tasks, exercise, education, training in functional abilities, counseling, and skill building in stress management and self-regulation (Mayer, Gatchel, Mayer, Kishino, Keeley, & Mooney, 1987). This program also features follow-up training sessions at 5 weeks and 6 months. One study reported that clients of the program had an 87% success rate in return to work 2 years later, compared to a 41% rate among persons in an untreated group; the untreated group also had a significantly higher rate of reinjury and subsequent surgeries (Mayer et al.). Other intervention research from this group reported a 90% return to work success rate among clients 6 months after discharge (Gatchel et al., 1995). A study examining the generalizability of this program reported an 87% success rate in returning clients to work after 6 months (Vendrig, 1999).

THE SUCCESS OF THE VR ENTERPRISE

Critics of VR often point out that certain groups are inadequately served by state-federal agencies. Although there are many aspects of this argument that need to be explored, it should be noted that state VR agencies are mandated to serve individuals with the most “severe” disabilities, and to do so within the context of shrinking state budgets. Research indicates that the number of referrals to state VR agencies remained constant from 1978 to 1998, and during this time competitive employment outcomes increased from 71% to 88% (Walls, Misra, & Majumder, 2002). This rate is particularly impressive, given the priority to serve persons with severe disabilities; however, these authors also found that during this period the case service cost for clients tripled. Other study of a state VR system suggests further that persons with more severe impairments (among persons with traumatic brain injury) may benefit more from VR than persons with less severe deficits (Johnstone, Schopp, Harper, & Kosciulek, 1999).

The success of VR should not be judged strictly on the placement rates of state VR agencies. Many persons, particularly those with psychiatric disorders, are not served by many state VR agencies due in part to conflicting guidelines that often exist between state VR and state mental health agencies (Cook, 1999). Other individuals are not sponsored by state VR because their conditions do not qualify as “severe disabilities.” The state VR program has documented evidence of success, but there is evidence to indicate that many traditional components—such as prevocational training—may not be necessary or essential in many cases. One study found a supported employment approach that by-passed prevocational training was more effective in placing persons with serious mental illness than a more traditional VR approach (Bond, Dietzen, McGrew, & Miller, 1995). Other research suggests that individualized supported employment is superior to traditional VR approaches in this population (Drake et al., 1999). In addition, there is considerable evidence that other job training and placement programs—often offered in fee-for-service models for injured workers—can be quite effective in returning these people to work (Mayer et al., 1987).

THE DYNAMIC TRAJECTORY OF VR

VR is now changing in response to current legislation and pressing social needs. As state VR agencies are mandated to serve persons with the most severe disabilities while simultaneously facing financial shortages and increased costs, more individuals will probably not qualify for VR services. Current legislation permits individuals who are social security disability recipients in

many states to assume some direction for their rehabilitation under the TTW program, which will undoubtedly open new opportunities for psychologists, nurses, physical therapists, and other health professions to develop and offer rehabilitation services. Largely, private-market forces may fundamentally reconfigure state VR programs over time.

Similarly, rehabilitation counseling—long associated with state VR—has witnessed a steady and fundamental change in its professional identity that emphasizes managerial and administrative duties, and deemphasizes counseling skills. Although this is more apparent in state VR agencies and private rehabilitation services, confusion and ambiguity have also resulted from the success of training programs like supported employment, which relies extensively on “employment specialists.” At alternating times, it might be difficult to distinguish among an employment specialist, a job coach, and the skills and expertise commonly associated with rehabilitation counseling (Szymanski & Parker, 1989).

New opportunities will be available to other professions in the programs that take advantage of TTW legislation. No single profession will have a corner market on the provision of expert VR services; in fact, it appears that in part the purpose of the legislation is to create more opportunities for service providers in rehabilitation. There is emerging evidence, for example, that alternative approaches outside the realm of VR have been successful in returning unemployed individuals to work and promote adjustment and prevent setbacks in the process (Vinokur, Price, & Schul, 1995; Vinokur & Schul, 1997). These alternative models may be well suited for the expanding opportunities for other professions and agencies to participate in the new legislative incentives to return unemployed workers to a “best fit” job.

However, this scenario is occurring within the context of greater consumer involvement, consonant with a “new paradigm of disability” that construes disability as a cultural minority, worthy of rights and free choice (Olkin, 1999). This empowerment movement has already had considerable impact on federal entities like the NIDRR (1999), as it integrated this paradigm into its long-range plan. The degree to which this consumer involvement will alter current state VR practices is unknown; it is difficult to imagine that this empowerment movement would have a substantive effect in poor and rural regions, or in private rehabilitation programs. Nevertheless, individuals who live optimally with a chronic disease or disability exert considerable control in all aspects of their daily life, and in order to better assist and provide strategic services, it is essential that service providers form partnerships that recognize individual choice and address concerns specific to the individual (Elliott, 2002).

Moreover, the current premium consumers place on competitive employment outcomes has additional benefits. Individuals with mental illness who received competitive employment placement in their VR program displayed fewer symptoms and reported more self-esteem and satisfaction with leisure,

finances, and vocational services than did persons in minimum work and no-work categories (Bond et al., 2001). Individuals in sheltered work placements did not have any significant patterns in their nonvocational outcomes.

Work-site accommodation and assistive technologies are two areas that represent the potential yet real conflicts between VR services and consumer empowerment (Scherer, 2002). Many elegant devices are currently available that can bring substantial improvements to quality of life; very few individuals can purchase these expensive items, and there are some health care plans that do not provide coverage for the purchase of wheelchairs. Most state VR budgets lack the funds to purchase expensive assistive technologies for most clients. Similarly, interactive virtual reality technologies can be used to train VR clients in work samples and tasks of daily living (e.g., cooking, driving, and training; Schulteis & Rizzo, 2001). The expense and availability of these technologies will be issues for most VR programs. Although the ADA expects work-site accommodation, it is likely that current and future challenges to this important landmark legislation will be designed to erode some of the financial obligations incurred by the private sector for accommodations, or to alter the definition of "reasonable accommodation." These issues will be negotiated and influenced by the economic health of the nation.

Other contemporary social issues will require ongoing scrutiny in VR. Despite the long history of diversity in VR, evidence suggests that many persons of ethnic and minority status have different vocational outcomes and experience differential treatment in rehabilitation programs (Elliott & Uswatte, 2000). The degree to which rehabilitation programs address these issues will likely depend on the relative sensitivity by frontline service providers and administrators of service delivery programs. The changing demography of the U.S. labor force will necessitate more informed research on acculturation processes in disability, adjustment, and VR, generally (Leung, 1993). Survey research indicates that attempts to meet these changes according to the 1992 amendments to the Rehabilitation Act have been slow (Whitney, Timmons, Gilmore, & Thomas, 1999); there are also data to indicate that VR clients from European American backgrounds have higher rates of competitive employment placement than do African American clients (Olney & Kennedy, 2002). European Americans may be more likely to be accepted for VR services than are persons from ethnic minorities (Wilson, 2002). Other research implies that once education level, gender, work status at application, and primary support at application are taken into consideration, African Americans may be accepted for VR services at a higher rate than would European Americans (in a national sample; Wilson, Alston, Harley, & Mitchell, 2002).

Academic interests in research and in training programs will, in turn, reflect and embrace a greater intellectual diversity. With the emergence of employment specialists more opportunities may result for personnel with basic undergraduate preparation; psychologists and counselors may gravitate

toward more administrative and support roles in resource allocation, program development, and service provision without being frontline service providers. Moreover, it is probable that VR will be influenced by areas other than traditional sources (counseling, special education, and psychology; occupational therapy and nursing) as other professions become interested and invested in the rehabilitation enterprise. Such lines of thinking will likely move beyond biomedical and biopsychosocial models to address issues of labor relations, health service administration, design, and engineering (Ameli & Kumar, 2002; Butler, 2000; Schultz, Crook, Fraser, & Joy, 2000).

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