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Change is associated with progress. Accordingly, I am excited to announce that my time as editor has come to an end. It is now time to pass the torch on to a new group of leaders. The May/June 2007 issue of VECAP marks my last issue as journal editor. The success of my tenure can be attributed to the many instances of collaboration and partnerships among professionals in the field that came together to make every issue possible. I hope that the topics addressed in the journal over the last three years have provided a creative environment which contributed to expanding the discipline, provoked ideas, and stimulated "out-of-the-box thinking". I have received many communications from people in the field about the quality and depth of the articles which, in my opinion, served to create a true learning community and to enhance "best practices".

This opportunity, although challenging, has also provided me with the chance to meet many colleagues from around the country, and has helped me to gain a greater appreciation of the value and importance of what we do as professionals. I look forward to passing the torch to the capable hands of our new leadership team. Please join me in welcoming our new editors Dr. Debra Homa of The University of Wisconsin at Stout, and Dr. Mike O'Brien of New Mexico Highland University. I look forward to supporting Deb and Mike in their journey as co-editors.

This current edition contains several well-developed articles that focus on resources for the evaluator of assistive technology for people with disabilities. The first article, submitted by Cox, discusses useful resources for the evaluation professional. In a rapidly changing society it is imperative that the vocational evaluation and career assessment professional remain knowledgeable of new developments in the field. This paper describes print and non-print resources useful for identifying, selecting, and evaluating assessment measures. Considerations important in reviewing and evaluating potential instruments for use in vocational evaluation and assessment practice are also discussed.

The next two featured articles highlight the importance of assistive technology (AT) and the role of technology in expanding opportunities for consumers. In the first of the two AT articles, Sligar and Toriello discuss a new paradigm for vocational evaluation practice designed to improve services to consumers with addiction issues. This article integrates new paradigms of vocational evaluation practice with an empirically-derived model of addiction rehabilitation. Four vocational evaluation paradigms (i.e., Empowerment, Individualization, Culture, and Universal Design/Assistive Technology) are operationally defined and applied to the four stages of Simpson's (2004) addiction rehabilitation model. In the next article, Pierson, Annis, James, Lubinsky and Peterson, discuss the synthesis of vocational evaluation and assistive technology. The authors report that the intensive evaluation effectively combines vocational evaluation and assistive technology practices with a certified vocational evaluation specialist (CVE) and an assistive technology practitioner (ATP) in a collaborative five-day evaluation. This method of evaluation is most effective when used with consumers who have severe and multiple disabilities. Traditional vocational evaluation tools such as interviewing, psychometric-testing, career exploration, work samples, and situational assessment are utilized in this process. A key attribute of this model is the emphasis on observation of work performance and behavior rather than reliance on normative data. A multidisciplinary team approach is emphasized before, during, and at the conclusion of the intensive evaluation. The three goals of the intensive evaluation are to increase participants' performance, independence, and quality of life while emphasizing the "Four P's" (purpose, passion, patience, and professionalism) and making the evaluation fun.

The fourth article focuses on universal design for learning. The authors document how adoption and implementation of universal design for learning (UDL) within vocational evaluation advances practice towards the possibility of achieving social justice for people with disabilities. Leconte, Smith, and Johnson discuss components of UDL and how it is grounded in theories of cognitive development and learning. Three tenets guiding UDL are discussed. The belief is that every aspect of learning and assess-

ment must have multiple means of representation, multiple means of expression, and multiple means of engagement. These tenets translate into actual operation with vocational evaluators' long-held principle that practices should use a variety of assessment techniques and approaches for individuals to realize their vocational potential. VECAP and the Commission on Certification of Work Adjustment and Vocational Evaluation Specialists (CCWAVES) also endorse this principle. The primary mission of this document is to expand the meaning of this principle by endorsing the use of UDL in assessment.

The final article, written by Diana K. Wade, a graduate student from The George Washington University, was the winner of VECAP's 2007 Student Literary Award. Wade put forward the idea that students are likely to be actively and positively engaged in their career development choices when given the opportunity to participate in a career development program. This article illustrates the significance of career development programs used in middle schools in the United States. Contained in the article is an examination of the interventions used with each target group, type of data collected, and reported findings. Career development phases are used as guidelines to emphasize the concept that exposure to each career phases is the key to preparation for successful transition. According to Wade, the more developed programs utilized assessment as a key component of the career exploration, which was integrated into the core of the programs and laid the foundation for interventions.

Finally, the articles included in this journal offer an indication of exceptional growth in the field and position the profession for continued prosperity. I take this concluding opportunity to thank all who have contributed to the journal. Publication of past issues would not have been possible without the hard work of contributing authors, the managing editor, Latha Bhavnani, and the consultant reviewers. Thank you all for your hard work and continued support of VECAP.

Sincerely,

Vivian M. Larkin
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e-mail: wlxg@srskansas.org

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2011 I Street, NW, Suite 300
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Gunter 1250
Greeley, CO 80639
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fax: (970) 351-1255
e-mail: juliet.fried@unco.edu

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 Counseling University of Wisconsin-Stout
Menomonie, WI 54751
work: (715) 232-1895
fax: (715) 232-2356
e-mail: hamiltonmi@uwstout.edu

Member Services Coordinator
Christine Johnson, M. A., CRC
Staff Specialist for Community
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D.O.R.S.
2301 Argonne DriveBaltimore, MD 21218
410.554.9440 voice
410.554.9412 fax
888-554-0334 toll free
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e-mail: cjohnson@dors.state.md.us

Member Services Co-Coordinator
Ron Edwards M.A. CVE
Hope Network- West Michigan
755-795 36th Street S.E.
P.O. Box 141
Grand Rapids, MI 49501-0141
work: 616-248-5150
redwards@hopenetwork.org

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Assistant Professor
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work: (334) 844-5943
fax: (334) 844-2080;
e-mail: larkivm@auburn.edu

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e-mail: crumphe@auburn.edu

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Department of Rehabilitation and
        Counseling
University of Wisconsin-Stout
Menomonie, WI 54751
work: (715) 232-1895
fax: (715) 232-2356
e-mail: hamiltonmi@uwstout.edu

Ron Edwards, M.A., CVE
Hope Network- West Michigan
755-795 36th Street S.E.
P.O. Box 141
Grand Rapids, MI 49501-0141
work: 616-248-5150
redwards@hopenetwork.org

Nancy Scott, M.S., CVE
AC/CESS Voc. Assessment Center
4169 Pruden Blvd.
Suffolk, VA 23434
Work: (757) 925-5651
e-mail: nanscott@prudencenter.net

Lisa Rahman Smith, CVE
4565 Rincon Place
Montclair, VA 22026
lisa.r.smith@fcps.edu

SELECTING AND EVALUATING VOCATIONAL EVALUATION AND ASSESSMENT MEASURES: USEFUL RESOURCES FOR THE EVALUATION PROFESSIONAL

ANDREW A. COX
Troy University

ABSTRACT

Tests and other assessment instruments serve an integral role in vocational evaluation and assessment. With the development of new instruments and revision of existing measures, it is imperative that the vocational evaluation and career assessment professional remain knowledgeable of new developments in this dynamic area. This paper describes print and non-print resources useful for identifying, selecting, and evaluating assessment measures. Considerations important in reviewing and evaluating potential instruments for use in vocational evaluation and assessment practice are described.

INTRODUCTION

Test based assessment measures serve an integral role in the work of the vocational and career assessment professional. The scope, nature, and availability of such instruments are an ever-changing area. New measures are developed and marketed, while existing instruments are being revised continuously. The professional using such measures must remain knowledgeable of these new developments within the assessment area in order to function as a competent practitioner.

Materials and resources are available to assist the assessment professional in keeping abreast of the wide range of assessment resources available for client use. This paper describes a variety of such resources. Resources available in traditional print format as well as those available through on-line, Internet based sources will be described.

PRINT-BASED RESOURCES

The Buros Institute of Mental Measurements publishes a series of publications that critically review assessment measures in the 16-volume Mental Measurements Yearbook. Published from 1938 through 2005, the 12th (Conoley & Impara, 1995), 13th (Impara & Plake, 1998), 14th (Plake & Impara, 2001), 15th (Plake & Impara, 2003) and 16th (Spies & Plake, 2005) volumes are the latest editions. Assessment instruments, their strengths, weaknesses, and recommendations for their use are typically provided within each test review. The vocational assessment professional can survey the volumes for measures that may serve their assessment purposes. Other materials published by the institute of interest to the assessment professional include: Tests in Print (Murphy, Conoley, & Impara, 1994; Murphy, Impara, & Plake, 1999; Murphy, Plake, Impara, & Spies, 2002; Murphy, Spies, & Plake, 2006) and the Buros Desk Reference Series (Murphy, & Impara, 1994; Impara & Murphy, 1996).

Test Critiques (Sweetland & Keyser, 1984-1993) is a 10-volume set providing comprehensive test reviews. Though somewhat dated, these volumes continue to be a useful resource for selecting and reviewing assessment measures. Instruments can be selected from these volumes and reviewed in more detail within other more recent resources.

The eight-volume Directory of Unpublished Experimental Mental Measures (Goldman, Saunders, & Busch, 1996; Goldman, Osbome, & Mitchell, 1996; Goldman & Mitchell, 1995; Goldman, Mitchell, & Egelson, 1997; Goldman, & Mitchell, 2003) provides reviews of measures typically not found within other resources. Instruments described here are usually assessments developed for psychological, educational, or social research purposes. Technical characteristics

and additional materials providing information regarding each measure are included within these volumes.

The Measures for Clinical Practice (Corcoran & Fischer, 1987, 2000; Fischer & Corcoran, 1994) describe a variety of assessment measures. Information relative to the test's nature, normative data, technical characteristics, and test availability are described. Many times a copy of the instrument is included for review. This is a useful resource to the vocational assessment professional for identifying lifestyle, personal-social, and temperament based measures. The second and third editions are two-volume sets that separately describe instruments for use with adults, children and families.

Brief, non-critical test reviews are provided in Tests: A Comprehensive Reference for Assessment in Psychology, Education, and Business (Maddox, 2003) and the ETS Test Collection Catalogs (1986-1991). Potential test titles, and their availability, nature, and purposes can be identified through these references. Selected measures can then be reviewed in the more comprehensive resources cited elsewhere within this article.

There are several other written resources that describe instruments for use with specialty populations or within specific practice settings. These resources may assist the vocational and career assessment professional in identifying assessment measures to serve specific assessment goals. These reference materials include Measures for Psychological Assessment: A Guide to 3000 Original Sources and Applications (Chun, Cobb, & French, 1975), Measuring Health: A Guide to Rating Scales and Questionnaires (McDowell & Newell, 1987), Measures of Personality and Social Psychological Attitudes (Robinson, Shaver, & Wrightsman, 1991), Communication Research Measures: A Sourcebook (Rubin, Palmgreen, & Sypher, 1994), International Assessment of Health-Related Quality of Life (Schumaker & Berzon, 1995), Family Assessment: Resiliency, Coping, and Adaptation (McCubbin, Thompson, & McCubbin, 1996), Instruments for Clinical Health Care Research (Frank-Stromborg & Olson, 1997), Handbook of Psychiatric Measures (American Psychiatric Association, 2000), Handbook of Family Measurement Techniques (Touliatos,

Perlmutter, Straus, & Holden, 2000), Quality of Life: Assessment, Analysis and Interpretation (Fayers & Machin, 2000), A Counselor's Guide to Vocational Guidance Instruments (Kapes & Whitfield, 2001), and Evidence-based Practice Manual: Research and Outome Measures in Health and Human Services (Roberts & Yeager, 2004).

Reference materials designed to assist practitioners in developing outcome assessment or program evaluation procedures should not be overlooked by the assessment professional. Though primarily used by practitioners contemplating implementation of program evaluation and outcome assessment procedures within mental health or social service settings, these resources can be used to identify general adjustment, social and personal functioning, and temperament measures for use in the vocational evaluation process. Sample resources in this category include Ogles, Lambert, and Masters (1996), Sederer and Dickey (1996), and Cone (2001).

INTERNET-BASED RESOURCES

The Internet can be another source of assessment information. Professionals should carefully evaluate the quality and purposes of such assessment information. Links to possible assessment resources can be identified through the use of general search engines.

The Internet contains a wealth of on-line testing sources and career aides. Some reviewed by this author that provide on-line career related assessment resources include AdvisorTeam.com (2007), Career Toolbox (2007), Job Hunters Bible (2007), Human Metrics (2007), and Authentic Happiness (2007).

Three on-line resources that support test title searches are available for test users. The ETS Test Collection (Educational Testing Service, 2007b) provides the title, brief description, and availability for numerous tests. The Buros Institute for Mental Measures (2007) website contains Test Reviews On-Line with brief summaries of a wide range of commercially produced tests. This can serve as an adjunct to the more comprehensive print versions of the Mental Measurements Yearbooks. The Health and Psychosocial Instruments (HAPI) (Ovid Tech-

nologies, 2007) is a computerized database of mostly non-commercial test measures used in psychosocial and health related research.

The various O*NET based career exploration tools are described on O*Net Consortium (2007). Though not a formal test measure, America's Career Information Network (2007) has various checklists, and rating scales to assist job seekers in their job search efforts. These job-seeking aides can serve an adjunct role in career development assessment.

Test publishers' websites are a useful source of information. Such sites typically include on-line catalogs listing descriptive information for tests published by respective companies. This information can be supplemented with evaluative information provided within the previously cited critical evaluative resources. Anastasi and Urbina (1996), Drummond and Jones (2006), and Educational Testing Service (2007a) provide listings of test publishers.

CONSIDERATIONS IN REVIEWING POTENTIAL ASSESSMENT MEASURES

The assessment professional should consider a variety of information relative to a decision to use a particular instrument in the assessment process. The professional can consider the following types of information:

1. Test item coverage of domain to be assessed.

2. Appropriateness of test content, items, applicability, and readability to the intended population.

3. Freedom of test item bias relative to cultural and gender issues.

4. Technical characteristics to include validity, reliability, and normative characteristics.

5. Test administration, scoring, and interpretation considerations.

6. Test administration aides and materials available to both test administrators and test takers.

7. Usability factors to include cost of the test, ease in scoring, durability of materials, consumable vs. non-consumable materials, use of scoring services, time factors, and test format.

8. Test appropriateness to the testing professional's competence level and scope of practice.

Selected assessment resources provide additional information regarding test use and purchase considerations. Some resources provide checklists to assist in test review. The reader is referred to Erford (2007) and Drummond and Jones (2006) for considerations in reviewing potential test measures for use in assessment practice.

SUMMARY

This paper has described various print and non-print resources to assist the assessment professional in identifying assessment measures for use in career and vocational related practice. Use of such resources will assist the professional in refining and updating one's repertoire of measures used in client assessment. The assessment area is dynamic with an explosion of new and revised measures. Hopefully, review of such resources as described within this paper will assist the professional in remaining abreast of such developments.

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BIOGRAPHICAL SKETCH

ANDREW A. COX, MSW, Ed.D., LPC, LMFT, LCSW, CVE, is professor of counseling and psychology, and director of clinical training at Troy University, Phenix City, Alabama. In addition to his academic appointment, he maintains a mental health consultation practice in Columbus, Georgia. Aspects of this practice include vocational evaluation services, mental health assessment and consultation, and clinical supervision for several state and private mental health and social service-related agencies in Alabama and Georgia. He has over 30 years of experience in education, mental health, and human services. His experiences include public school teacher, school counseling, school psychology, rehabilitation psychology, counselor with a university counseling and career development center, community mental health center clinician, psychiatric hospital psychotherapist and case manager, and private practitioner.

Cox is a licensed professional counselor, licensed marriage and family therapist, licensed clinical social worker, and certified vocational evaluation specialist. He holds certification in school counseling, school psychology, school social work, and American Board of Disability Analysts Senior Disability Analyst and Diplomate. He holds an Ed.D. from Mississippi State University; a MSW from University of Alabama; an M.Ed. from West Georgia College; and a B.A. from LaGrange College. His professional publications, presentations, and professional interests are in the areas of depression management, career development, professional ethics and issues, adolescent substance abuse, mental health practice with potentially dangerous clients, and testing and assessment.

IMPROVING SERVICES TO CLIENTS WITH ADDICTION ISSUES: NEW PARADIGMS FOR VOCATIONAL EVALUATION PRACTICE

STEVEN R. SLIGAR
PAUL J. TORIELLO
East Carolina University

ABSTRACT

This paper integrates new paradigms of vocational evaluation practice with an empirically derived model of addiction rehabilitation. Four vocational evaluation paradigms (i.e., Empowerment, Individualization, Culture, and Universal Design/Assistive Technology) are operationally defined and applied to the four stages of Simpson's (2004) addiction rehabilitation model. Using Simpson's model with these paradigms will provide a heuristic to guide the implementation and research of state-of-the-art vocational evaluation practices.

INTRODUCTION

The connection between employment and addiction is unfortunately, a significant social issue. Zhang and Snizek (2003) found that in a sample of 7,477 full-time workers, 63% reported current alcohol use, 7.8% reported current *heavy* alcohol use (five or more drinks on the same occasion on each of at least five days in the previous 30), and 7.7% reported current use of illicit drugs. Of the $130 billion average annual cost of addiction to society, $100 million is due to productivity losses (Office of Drug Control Policy, 2003). For example, the Substance Abuse and Mental Health Services Administration (SAMHSA, 2002) found that individuals who reported past month drug use were more likely to have had multiple employers in that past year, missed more work in the past month due to injury or illness, and skipped more work days in the past month than those who did not report past month drug use. Additionally, individuals in active addiction are three times less likely to be employed than the general population (Center for Substance Abuse Treatment [CSAT], 2000). Clearly, the negative employment experiences associated with addiction present a significant challenge to rehabilitation professionals serving these individuals.

One critical issue is timing; addressing vocational issues during addiction counseling is one of the best predictor of success for clients with addiction. Vocational counseling during addiction rehabilitation increases treatment participation and continuation (McCaul, Svikis, & Moore, 2001; Reif, Horgan, Ritter, & Tompkins, 2004; Veach, Remley, Kippers, & Sorg, 2000). Client employment during addiction rehabilitation predicts successful treatment completion (Lang & Belenko, 2000). Being employed has been found to be one of the strongest predictors of sustained addiction recovery (CSAT, 2000; Kashner et al., 2002; Salyers, Becker, Drake, Torrey, & Wyzik, 2004; Silverman, Svikis, Stitzer, & Bigelow, 2001). Employment is also correlated with improved client self-esteem, hope, and relationships (Salyers et al., 2004) as well as decreased client illegal activity, arrests, physical problems, and homelessness (Hubbard, Craddock, & Anderson, 2003; Messina, Nemes, Wish, & Wraight, 2001). Lastly, providing vocational counseling during addiction rehabilitation has also been demonstrated to be cost-effective (Shepard & Reif, 2004).

Regrettably, research has also shown that vocational counseling is typically left out of the addiction rehabilitation process (Hitchen, 2001) or is only minimally addressed (CSAT, 2000). Even though the importance of addressing employment issues during addiction rehabilitation has been known for some time (Schwab & DiNitto, 1993), Friedman, Lemon, Durkin, and D'Aunno (2003) found that the lack of vocational counseling during addiction rehabilitation continues. Vocational rehabilitation professionals felt that knowledge about addictions is highly

important and at the same time felt they had limited preparedness (Lee, Chronister, Tsang, Ingraham, & Oulvey, 2005). In essence, there is a need for comprehensive integration of vocational counseling into addiction treatment (Magura, Staines, Blankertz, & Madison, 2004).

In 2000, the federal government supported this integration by publishing "Treatment Improvement Protocol (TIP) 38: *Integrating Substance Abuse Treatment and Vocational Services*" (CSAT, 2000). The purpose of TIP 38 was to provide best practice guidelines for merging vocational counseling and addiction rehabilitation. This TIP represents an amalgamation of the experience and knowledge of clinical, research, and administrative experts. A Resource Panel, comprised of staff from pertinent Federal agencies and national organizations, recommended specific areas this TIP should address. A Consensus Panel who, through a series of discussions, reached a consensus that formed the foundation of TIP 38 then reviewed these recommendations. Finally, a large and diverse group of experts closely reviewed drafts of TIP 38 before dissemination.

Vocational assessment was identified in TIP 38 as a method to ascertain client strengths and needs, develop intervention strategies, and identify needed services. The described assessment process begins with a holistic assessment of a client's employment issues, collected via various instruments, which are then translated into a plan that identifies a path to successful employment. Such an assessment process however, is too broad in scope, lacks a clear protocol and does not account for a comprehensive vocational evaluation (VE) component, which is time limited and specifically focused on careers and employment. The Thirtieth Institute on Rehabilitation Issues (Thirtieth IRI) (2003) posits that VE increases the efficiency and effectiveness of the client's vocational rehabilitation process. Efficiency is improved through timely identification of intervention and employment outcomes. Effectiveness is enhanced for clients because they are able to acquire information to "make informed choices about job opportunities and career direction" (p. 6). Similarly, vocational rehabilitation counselors receive just in time information for planning purposes and research has shown that the more VE recommen-

dations are followed, then the greater the likelihood of success (Thirtieth IRI, 2003). Lastly, VE is a service to employers because clients present as job matched with identified job accommodations if needed.

In essence, VE may also be a critical component of the addiction rehabilitation process. While TIP 38 leaves the addiction counselor or vocational rehabilitation professional with a clear sense of the importance of vocational assessment, a detailed model to guide practitioners' implementation and researchers' appraisal of a vocational evaluation component is not provided. The purpose of this paper is to integrate conceptually state-of-the-art vocational evaluation paradigms with an empirically derived model of addiction rehabilitation. Specifically, four vocational evaluation paradigms (i.e., Empowerment, Individualization, Culture, and Universal Design/Assistive Technology) are operationally defined and applied across the four stages of Simpson's (2004) addiction rehabilitation model. The value of this integrated model is discussed within the parameters of four criteria used by Simpson to judge the value of the addiction treatment model. This integrated model could guide addiction rehabilitation practice and research that would result in improved efficiency in the identification of vocationally relevant information and improved effectiveness in terms of career selection, employability and placeability of rehabilitation clients with addiction issues.

THE SIMPSON MODEL OF ADDICTION REHABILITATION

Using large-scale natural studies of addiction rehabilitation effectiveness, Simpson (2004) conceptualized an addiction rehabilitation model for practical and research purposes. The model contains four distinct and successive stages: early engagement, early recovery, stabilized recovery, and aftercare. Each stage consists of a distinct set of therapeutic tasks that need to be completed during that stage, options for empirically supported interventions to accomplish the therapeutic tasks, and the client outcomes expected upon completion of each stage. Simpson did not specify time frames for each stage. Fol-

lowing is a description of each stage that includes the therapeutic tasks and outcomes.

EARLY ENGAGEMENT: Simpson (2004) defined early engagement as the task of motivating individuals to enter rehabilitation and participate via their role as "client". Participation refers to attendance and psychological engagement in individual and group counseling sessions. As consistent predictors of addiction rehabilitation success, Simpson identified several interventions to increase client participation (e.g., voucher-based incentives) and therapeutic engagement (e.g., cognitive mapping). A major outcome of this stage is the development of a therapeutic relationship between the client and therapist. Such a relationship generally consists of a rapport as well as an agreement between client and therapist on addiction rehabilitation goals and the means for accomplishing those goals.

EARLY RECOVERY: This stage is defined by Simpson as the time when clients move from contemplating change to making initial changes in their thinking and behavior. Building on the success in developing a therapeutic relationship, therapeutic tasks during early recovery include enhancing self-control of using alcohol/drugs as well as social skills that are associated with social support systems. For the former task, Simpson recommended relapse prevention interventions that are designed to increase the client's vigilance of situations and events that triggered use of alcohol/drugs. For the latter task, strategies geared toward strengthening social adjustment and coping skills (e.g., Community Reinforcement and Family Training Approach, Multisystemic Family Therapy) were recommended. Upon engagement in these interventions, the client exhibits a change in thinking about and actions toward his/her addiction. Outcomes are evidenced by negative drug tests, self-reported decrease in substance use, and participation in new social activities.

STABILIZED RECOVERY: During this stage of Simpson's model, the client should be transitioning thoughts and behaviors identified during the early recovery stage into an alcohol/drug free lifestyle. Simpson recommended that such a transition could be facilitated by the same inter-

ventions as those utilized during early engagement. Yet, the task moves from identification and skill introduction to the stabilization of preferred habits of recovery. Similar to early recovery outcomes, a client in stabilized recovery over time will maintain a record of negative drug tests, deepening involvement in social groups like 12-Step programs, and expanded efforts to improve family relationships.

AFTER CARE: The therapeutic task during the after care stage is to transition successfully out of addiction rehabilitation and back into the community without significant relapse of old behaviors. At this stage, Simpson recommended that clients participate in some level of ancillary or "wrap-around" services (e.g., case management) to support such a successful transition. Outcomes obtained from these services may include improved medical and/or psychiatric functioning as well as relationships with significant others.

NEW PARADIGMS OF VOCATIONAL EVALUATION

The Thirtieth IRI (2003) describes VE as an "employment outcome service" (p. 6) that applies specific tools and follows an identified process. Power (2006) emphasized the importance of determining the client's employability and placeability by utilizing VE services. Employability refers to the skills needed to find and keep a job (e.g., job-seeking, interviewing, on-the-job social and other skills), and placeability refers to the skills necessary to find employment with a specific employer or personnel director. Thomas (1997) described three different groups of VE tools as instruments (e.g., tests and work samples), strategies (e.g., situational assessment, on-the-job tryouts, community-based evaluations) and techniques for modification (e.g., test accommodations) that enable collection of accurate data. The process of VE has been described as having three distinctly different levels, i.e., Level I screening, Level II clinical and Level III comprehensive VE (Nadolsky, 1984). The purpose of each level was to make quick decisions (I), diagnose problems (II), and identify vocational assets and areas for improvement (III). The process has changed over time, and evolved into a continuum of assessment options that are

delivered at a time and place that will have the most relevance for the client (Thirtieth IRI, 2003). Specifically, the Thirtieth IRI (2003) identified three phases of evaluation that included referral and planning, assessment and career exploration, and follow-up and quality assurance. These phases were intended to encompass the earlier three levels and allow for greater adaptability and periodic re-evaluations to measure progress or to reassess in light of new circumstances. There was no prescription or assignment of specific tools at any point along the continuum.

The Thirtieth IRI (2003) identified VE as being effective in helping clients become successfully employed and efficient in identifying employment options, while ensuring the best use of limited resources. When recommendations from VE were followed, successful outcomes of vocational rehabilitation were found for a broad spectrum of vocational rehabilitation clients, (Williams, 1975), including service recipients from a community vocational rehabilitation program or hospital settings (Ward-Ross, 1985), clients who are deaf (Marut & Bullis, 1985), traumatic brain injury survivors (Kosciuleck, 1991), and chronically mentally ill (Montgomery, 1996; Anthony & Janson, 1984).

Even though studies have shown that over 80% of clients in vocational rehabilitation present with addiction issues (Drebing et al., 2002), the literature provides scant information about the use of VE with these clients. Two studies, Harpster and Wadsworth (2005) and Greer, Roberts, May and Jenkins (1988) reported that persons who received state vocational rehabilitation services, including VE, had a lower documented co-occurrence of substance abuse than rates found in the literature. Anecdotal evidence exists that VE has been useful during addiction rehabilitation in Missouri and North Carolina (J. Lotterhos, personal communication, November 17, 2005), Florida and North Carolina (L. Goodwin, personal communication, November 17, 2005) and the authors' professional experiences in Georgia, Illinois, Ohio, and Texas. Clearly, persons with substance abuse history are currently receiving VE services, though the specific approach and tools used to provide these services are not clear.

Four state-of-the-art paradigms influencing the delivery of VE were identified by the Thirtieth IRI (2003):

Empowerment, which is the foundational paradigm, includes active involvement of the client throughout the process from explanations of the tools and activities to open-ended recommendations that incorporate employment and training options leading to a career path. The purpose of VE becomes one of providing information to facilitate self-awareness and enable the client to make informed choice(s);

Individualization recognizes the uniqueness of the client and the importance of a customized, dynamic VE plan of service. Individualization is achieved through the use of different instruments and techniques within a variable time frame to answer specific referral questions or other questions that may arise during the course of evaluation. The same tool(s) may be used during different points in the process as determined by the needs of the client;

Culture acknowledges the client's background and how it interacts with the professional and the VE tools. Present during all phases of VE, culture influences and guides the entire process from behavioral observations to test selection and interpretation to recommendations. The importance of cultural recognition is to enable the client to function successfully within a chosen employment setting; and

Universal design and assistive technology applies technology in the VE process for persons with disabilities. This combination enhances the client's independence and increases opportunities for self-sufficiency and career development.

While the IRI provided these initial definitions, the next step is to operationalize the paradigms within a clearly articulated model for practice and research evaluation.

AN INTEGRATION OF VE PARADIGMS WITH SIMPSON'S MODEL

What follows is a conceptual integration of the four VE paradigms across Simpson's four stages. For each stage in Simpson's model, the integration consists of potential VE tasks and outcomes described with regard to VE empowerment, individualization, and culture. TABLE 1 (Appendix) provides a summary of these com-

ponents. Because universal design/assistive technology operationalizes the same across all four stages of Simpson's model, this paradigm is addressed as a special consideration.

Early Engagement:
Evaluation Tasks: Vocationally, the client needs to develop a plan that includes an identified goal of employment. During early engagement, clients with addiction issues can present with varied vocational backgrounds ranging from none to a series of menial jobs to a professional career. Each presents interests that may lead to employment. Thus, the VE tasks at this stage are to orient the client and collect background information while building upon participation and engagement. With regard to VE paradigms, empowerment occurs when a vocational evaluator educates the client to an informed level of understanding about the different tools and processes that may be used during the evaluation and engages the client as an active partner in the process. Individualization occurs as the evaluator begins to uncover the unique aspects of the client based upon an initial interview and collection and analysis of background information. Using this information in combination with medical, psychological and other professional reports, the evaluator recognizes the client's cultural and linguistic background. Combining this knowledge of culture with other background records, the evaluator needs to analyze the data for gaps or contradictions and suggest other sources for additional information. Of particular importance is the need for the evaluator to recognize how the client's cultural background can influence the evaluator/client relationship and data interpretation (Power, 2006). A Transferable Skills Analysis (TSA) may be completed for those clients with a work history. Throughout, the client is presented with information as well as the evaluator's opinion for verification or clarification, building on the partnership.
Evaluation Outcomes: The expected outcome of the above is the development of a work profile and VE plan. The work profile includes a client's work history, hobbies, values and manifest interests. In addition, factors that predict job success and challenges are identified in the profile. These elements frame the hypotheses for further evaluation tasks as identified in the VE

plan. Simultaneously, achieving these outcomes via the VE paradigms supports the accomplishment of the general therapeutic tasks during this stage. Specifically, operating from paradigms of empowerment, individualization, and culture have shown to increase client participation and engagement (Simpson, 2004).

Early Recovery
Evaluation Tasks: Vocationally, at this stage, the client expresses desire to return to work and willingness to participate in VE at a higher level than that expressed during the Early Engagement stage. Thus, the primary VE task for early recovery is to determine the client's level of employability. One objective is that the client is able to practice and explore options and new behaviors in a safe, semi-structured environment that facilitates success. With regard to VE paradigms, individualization is evident when the VE plan is formalized, which includes tool selection, and interest(s) verification. The latter is accomplished through triangulation of data sources, e.g., formal and informal interviews, behavioral observation and test results. To address culture, the influence of how linguistic and social differences affect the selection, administration, interpretation, and scoring of instruments, especially norm referenced tests, is recognized and factored into the process. Once interest areas are identified or verified, other tools are applied. Tests of aptitude, intelligence, dexterity, achievement, values, or specific skills may be used to determine current functioning. Additional information may be gleaned from work samples, which may evaluate for a specific job, a cluster of jobs or traits across job categories (Thomas, 1997; Vocational Evaluation and Work Adjustment Association [VEWAA], 1975), in-house work sites and/or external on-the-job evaluations (the latter may be used more frequently in the next stage). The collected behavioral data will show how the client responds to supervision and peers, manages stress, complies with work rules, and displays other traits that affect employability. Progress is reviewed jointly by the evaluator and the client along the way, e.g., after each instrument or at the end of the day. This review facilitates self-evaluation and empowers the client to see different options. These range from immediate employment possibilities, the need to

plan and prepare for a new or different career or potential to benefit from training. Other support services may be needed to help the client prepare (e.g., emotionally, psychologically, socially, and medically) for employment.

Evaluation Outcomes: An outcome during this stage of VE is for the client to specify work interests and values, which can then be translated into skills that will maximize employability. Additionally, VE should identify other factors affecting employability, such as work habits, work behaviors, stamina and/or the development of strategies to cope with work-related stress. From these factors, other services to enhance employability may be suggested.

Stabilized Recovery

Evaluation Tasks: Vocationally, during this stage the client wants either to seek employment or find a specific training site. Thus, the VE task is to finalize employability needs, establish a clear vocational objective, and either identify a training site or transition to an emphasis on placeability. In order to ensure individualization, the VE plan may require modification to reflect a specific personal focus. There may be more reliance on strategies to use the work situation outside of the program walls as the evaluative tool. This strategy generates rich descriptions of the client's work behaviors, displayed interests, ability to perform specific jobs, possible problem behaviors, and potential triggers for relapse on drugs. Strategies may include structured work tasks in the VE setting or in the community such as on-the-job evaluation or tryout, job shadowing, or the contextually broader community-based or ecological assessment (Brodwin, Swett, Lane & Star, 2005; Parker & Schaller, 1996; Rubin & Roessler, 1995). If the client demonstrates employability skills, then the evaluation may screen or test for specific jobs or employers in the local market. For clients who have selected a training option, evaluation may need to focus on screening to ensure the client meets entry requirements, which may range from further testing to aptitude appraisal. Sensitivity to issues of culture is critical during the interaction of the client with the community and at the job or training site. Lastly, empowerment is evidenced by the client's self awareness of needs and selection of options for employment or training.

Evaluation Outcomes: The VE outcome during this stage represents a transition from evaluation of generic employability skills to specific placeability. Here, the client will identify a path to employment with options ranging from immediate job placement to participation in a training program. Additionally, as the client's recovery lifestyle stabilizes, there is an increased interaction with the mainstream community and a stronger focus on developing a career.

After Care

Evaluation Tasks: Vocationally, the client wants to be employed and is actively involved in the job search process or has made an application for training. Thus, the VE task is to *assist* the client obtain appropriate employment. This is where the rehabilitation team expands to include a job placement specialist while the evaluator role changes to resource or member of the support services team. To ensure individualization, the client is educated about job related information and is motivated to assume more responsibility for career obtainment. Cultural immersion is supported through increasing the client's interaction with the local community as a means to identify cultural similarities and differences as well as develop strategies to function within the mainstream. For empowerment, the evaluator may assist or conduct job analysis, provide specific occupational information or use any of the tools to further placement efforts and empower the client with additional information to enable a more informed choice.

Evaluation Outcomes: The client is in an active job search; seeking appropriate placement on the job or in training with a clear career direction. The final outcome is sustained gainful employment with the resulting feelings of empowerment, self-determination, and improved self-esteem.

SPECIAL CONSIDERATIONS

During practical and research applications of the above model, there are at least three special considerations of which vocational evaluators need to be aware: client relapse, universal design/assistive technology, and accommodations. First, even though Simpson's original model and the VE paradigms integrate as relatively linear

processes, there is no certainty that clients will progress through the model in a linear fashion. In fact, relapse or a return to alcohol and/or drug using behaviors after a period of abstinence is a common occurrence during addiction rehabilitation and recovery (American Psychiatric Association, 2000). With regard to VE, a relapse does not necessitate the VE process restart from the beginning; however, at a minimum, a rehabilitation team meeting that includes the client to discuss the relapse and what action to take is warranted.

Universal design (UD) and assistive technology (AT) are inextricably woven throughout the processes of addiction rehabilitation and the VE process. Universal design includes those features of an environment that enhance access for all persons regardless of the presence of a disability or not (The Center for Universal Design, 1997), such as drug/alcohol monitoring devices used to monitor substance-free behavior, e.g., breathalyzer. Many persons with a history of substance abuse also have a co-existing disability (Rehabilitation Research and Training Center on Drugs and Disability, 1996), which may require the use of UD and/or AT products. Assistive technology consists of customized products (Brodwin et al., 2005; Rubin & Roessler, 1995; Assistive Technology Industry Association, n.d.) such as a breathalyzer modified with a speech output for a person who is blind. When either UD or AT are used in VE, the evaluator has a dual role to ensure access to the program and tools and to evaluate the client's ability to use UD or AT (Thirtieth IRI, 2003).

Another consideration is accommodations needed to access VE or to enter employment or postsecondary education. An accommodation may include UD or AT, or an adaptation made in the administration of an evaluation tool. For example, if a client requires an accommodation during the administration of a test or change in the routine way a task is performed on the job, then the evaluator considers such accommodation's impact on the interpretation of the score or performance rating. Quite frequently for standardized tests, the performance (score) is interpreted in the context of the actual tasks done and refers to specific criteria as opposed to a comparison of the client's score with a norm group (Thomas, 1997). A different type of accommo-

dation may involve an iterative application of VE. For example, test results obtained during the early recovery stage may differ as recovery progresses. Subsequent assessments may be considered as the client progresses through the stages, which is in agreement with the dynamic aspect of VE (Thirtieth IRI, 2003).

DISCUSSION

The above combination of Simpson's model with the VE paradigms results in a valuable model to guide future vocational evaluation practice and research within addiction rehabilitation. The value is accomplished through the coupling of paradigm-based, practical guidelines for vocational interventions with behavioral anchors for therapeutic interventions along Simpson's four stages (see TABLE 1). Additionally, Simpson (2004) defined four criteria by which to judge the value of a rehabilitation, addiction or vocational, process and outcome model. First, the model should identify process indicators or benchmarks that serve as paths to successful intervention planning and outcome. Second, the model should be oriented to the stages of change, with the identified therapeutic tasks accompanied by potential interventions to accomplish the tasks. Third, data generated across the stages of the model should be useful for program evaluation and management. Finally, the model provides a means to identify and study service gaps.

The Thirtieth IRI (2003) calls for research that examines "best practice models and efficacy of evaluation and assessment services" (p. 242) through an examination of four broad factors. First is a study of VE in toto and not specific research on individual tools. The second uses outcome information to determine whether the VE recommendations were or were not followed. The third examines the effectiveness of the VE recommendations on planning with confounding variables of referral source ability or desire to use the results and availability of resources for implementation. Lastly, is research into the impact of VE on the quality of life of consumers and other stakeholders?

Simpson's four criteria joined with the IRI's four factors provide a framework for a discussion on the value of the integrated model for VE

of clients with addiction issues. Specifically, the first, third and forth criteria have direct application to research conducted about VE and the second criteria specifically targets clients with addiction issues.

PATHS TO SUCCESSFUL PLANNING AND OUTCOME

To increase the efficiency and effectiveness of addiction rehabilitation, Simpson (2004) advocated for practitioners to focus on therapeutic tasks predictive of successful outcomes. For example, client attendance and early engagement are predictive of continuing and completing the latter stages of his model. Thus, treatment planning toward successful outcomes should be based on completing therapeutic tasks that hold such predictive power. Within these general therapeutic tasks, practitioners empower clients to identify individualized and diversified goals to guide their treatment course, specify objectives to measure their progress along the way, and know when the services are no longer needed (Commission on Accreditation of Rehabilitation Facilities [CARF], 2005; Rubin & Roessler, 1995; Thomas, 1997). The concepts are equally valuable when merging VE paradigms with Simpson's model. The overall objective of VE is to identify a career path and employment options with specific measurable behaviors or tasks that serve as markers of progress and that are predictive of outcome (CARF, 2005; Thomas, 1997). VE planning dovetails with and should be an integral part of the corresponding treatment planning that occurs during the client's recovery process. Research should include the points in time when VE was provided and the value of the recommendations in the planning process.

Stage of Change Orientation

At a client's given stage of change within the addiction rehabilitation process, it is important to match interventions that maximize potential for accomplishing the therapeutic tasks of a stage (Simpson, 2004; Littell and Girvin, 2002; Prochaska and DiClemente, 1984). In the integrated model for VE of clients with addiction issues, VE tools (instruments, techniques and strategies) appropriate to each of the stages

originally defined by Simpson addresses specific employability and placeability needs of the client. These tasks and tools are dynamic and iterative; they apply during the progression from unemployed and using to working as part of an alcohol/drug free lifestyle. While outside the call of the Thirtieth IRI, research into a VE protocol for the diverse population of clients with addiction issues is certainly warranted. We have suggested VE tools to correspond with specific stages of addiction rehabilitation and a next step is to verify the efficacy, utility and validity of this protocol.

Program Evaluation & Management

All rehabilitation professionals and the programs in which they work must use individual case records and aggregate client data to provide feedback on individual performance and to measure the agencies' overall efficiency, effectiveness and outcomes (Thirtieth IRI, 2003; Lewis, Lewis, Packard, & Souflee, 2001). Efficiency may be assessed individually, through measures like completion of therapeutic and VE tasks, and programmatically to determine results similar to characteristics of the client population or the total number who were admitted and completed the program. Effectiveness or outcomes research may examine the value of VE recommendations at two levels. First is the impact of recommendations on the client and other stakeholders when questions are posed and answered like *how did the client perceive the results of VE or how useful were the recommendations for vocational planning?* Programmatically, research may assess the number of clients who were able to chart their progress with interim goals, the number employed one-year post service completion or how many VE recommendations were or were not implemented. Data can be collected via feedback from questionnaires or focus groups from persons who have received VE services or counselors who made referrals.

Analysis of aggregate data can point to a variety of needs. Examples may include employment or demographic trends with the result of a need for new approaches or increased use of foreign language interpreters during the design and delivery of VE services. Aggregate data may

also show the overall value of the VE recommendations.

Service Gaps

Examining what was provided or not provided, what was used or not available, and what was effective and ineffective in the provision of any service is important (Brody, 2005; Lewis et al., 2001). A useful process and outcome model will facilitate the identification of these types of gaps. This process guides organizations in their strategic planning for quality improvement as well as researchers in developing studies relevant to the model. Regarding VE, service effectiveness may be viewed from two perspectives. First is at the individual service level such as tool selection or availability: for example, what VE resources are available and selected to work with individuals who present a history of addiction issues, a co-occurring physical disability and are of Spanish speaking origin? Gaps may be found in the relevance of VE strategies to cultural norms and local labor market options. Also, methods that empower clients may be shortcut to meet efficiency demands (too short evaluations to allow for full exploration and deliberation prior to client choice). The utility of VE may also be affected by the decision of the referral source whether to implement the recommendations and the availability and quality of additional services recommended such as physical therapy for a client who acquired a head injury as a result of an accident while impaired.

The integrated model for VE of clients with addiction issues opens the door for numerous areas of quality improvement and research. Questions that may serve as a starting point include: Do practical applications of the model improve service efficiency and effectiveness? Does the model improve client empowerment, individualization of service, and sensitivity to the client's culture? Do the outcomes (e.g., recommendations) of VE make a difference in planning, and/or job retention and satisfaction? How are clients screened to determine how and when to use VE? What factors affected the implementation of the VE recommendations?

SUMMARY

The integrated model for VE of clients with addiction issues has the potential to help rehabilitation professionals (e.g., addiction or vocational rehabilitation counselors and vocational evaluators), researchers, administrators and most importantly, the client. These rehabilitation professionals have a means to apply the tools and processes of VE during the stages of addiction rehabilitation. Given the behavioral anchors from the addiction rehabilitation model, the practitioners can match the appropriate VE tool with the client's readiness to engage in a specific part of the VE process. The researcher has a lens with which to view and study the phenomenon of VE of substance abusers. Administrators will have a way to capture evidence-based interventions because the VE process has identified outcomes at each stage of recovery, which lends itself to a quality feedback loop. The results should be improved efficiency in the identification of vocationally relevant information, effectiveness in terms of career selection, employability and placeability and empowerment in terms of client choice. These are all factors of importance to the client and the global rehabilitation community.

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TABLE 1: An Integrated Model for Vocational Evaluation (VE) of Clients with Simpson's Stages of Addiction Rehabilitation

Simpson Stage	Therapeutic Task(s)	Therapeutic Intervention(s)	VE Task(s)	VE Intervention(s)
Early Engagement	Increase attendance Form therapeutic relationship	Contingency management Motivational Interviewing	Increase motivation for work Establish VE plan and employment goal	Analyze background information and TSA
Early Recovery	Enhance self-control Increase social skills	Relapse Prevention Techniques Community Reinforcement Approach	Identify skills to maximize employability	Instruments (Tests, work samples, in house work tasks)
Stabilized Recovery	Stabilize new recovery habits	12-step groups, family counseling	Transition to placeability or training	Strategies (Situational Assessment, community-based assessment)
After Care	Transition out of rehabilitation	Wrap-around case-management services	Active job search and sustained employability or training	Job analysis, occupational information, identification of local labor market options, resources for job search or training

BIOGRAPHICAL SKETCH

STEVEN R. SLIGAR, Ed.D. serves as an assistant professor and director of the Graduate Program in Vocational Evaluation at East Carolina University. He has over 34 years experience in the field of vocational rehabilitation and this includes work as a vocational evaluator, administrator, advocate, author, researcher, and educator of consumers and professionals in rehabilitation. He has worked with special populations including persons who were deaf and/or blind, many of who experienced a co-occurring substance use disorder. He has incorporated substance use screenings in his practice for many years. He has a master's degree in Rehabilitation and Special Education with a specialization in vocational evaluation from Auburn University, and a doctoral degree in Adult Education and Human Resource Development from Northern Illinois University. He has published 25 articles or book chapters in the areas of evaluation, program development and diversity and presented over 150 national, regional and local workshops on vocational assessment, management and disability issues.

PAUL J. TORIELLO, Rh.D., is an assistant professor with the Ph.D. Program in the Department of Rehabilitation Studies. Dr. Toriello earned his Rh.D. in Rehabilitation, specializing in Substance Use Disabilities from the Rehabilitation Institute, Southern Illinois University at Carbondale. He received a bachelor's degree in psychology, and a master's degree in rehabilitation counseling from Wright State University. In the role of Principal Investigator or Research Consultant, Dr. Toriello has participated in grant projects funded by the Center for Substance Abuse Treatment, National Institute on Alcohol Abuse and Alcoholism, and other national funding organizations. Since entering the substance abuse treatment field in 1991, he has worked as a paraprofessional technician, counselor, case manager, clinical supervisor, trainer, and clinical director. Dr. Toriello is a trained Motivational Interviewing trainer, clinical supervision trainer,

and addiction severity index trainer. Dr. Toriello is a Certified Rehabilitation Counselor, a Licensed Clinical Addictions Specialist, and a Certified Clinical Supervisor. He has also been in recovery from addiction since 1989.

Intensive Evaluation: The Fusion of Vocational Evaluation and Assistive Technology

April Pierson
Jeffrey Annis
Kara James
Casey Lubinsky
Erika Peterson
University of Wisconsin – Stout

Abstract

The intensive evaluation effectively combines vocational evaluation and assistive technology practices with a certified vocational evaluation specialist (CVE) and an assistive technology practitioner (ATP) collaborating on a five-day evaluation, usually for participants who have severe and multiple disabilities. The CVE leads evaluation procedures and the ATP analyzes assistive technology and accommodation needs. Traditional vocational evaluation tools such as interviewing, psychometric testing, career exploration, work samples, and situational assessment are utilized. Observation of work performance and behavior is emphasized more than normative data. The provision of two professional staff is necessary to allow for concentration on each discipline as well as collaborative brainstorming. A multidisciplinary team approach is emphasized before, during, and at the conclusion of the intensive evaluation. The three goals of the intensive evaluation are to increase participants' performance, independence, and quality of life while emphasizing the "Four P's" (purpose, passion, patience, and professionalism) and making the evaluation fun.

Introduction

Assistive technology is frequently essential to accurately identify the capabilities of individuals with disabilities (VECAP, 1997). This need has been addressed by the development of the intensive evaluation, which incorporates comprehensive vocational evaluation procedures with technology and creative problem solving. The intensive evaluation involves a Certified Vocational Evaluation Specialist (CVE) and Assistive Technology Practitioner (ATP) collaborating on an evaluation of one participant for five days in an attempt to thoroughly examine all of the vocational options available to the person with the use of assistive technology. Often, the participants have multiple and severe disabilities.

An intensive evaluation involves traditional aspects of vocational evaluation such as interviewing, psychometric testing, work sample assessment, situational assessment, and career exploration which are utilized to various extents. Observation of work activities is a primary focus and assistive technology interventions and accommodations are provided throughout the process. Through testing and hands-on activities, the individual's highest skill sets, limitations/barriers, and assets emerge. Although it can be difficult to focus on the negative, limitations and barriers need to be identified so recommendations counteracting them can be developed. The information gathered throughout the week is presented in a comprehensive staffing and a detailed final report is written.

A significant distinction between a standard vocational evaluation and an intensive evaluation is that two professional staff from different but complementary disciplines, a CVE and ATP, both concentrate on one participant for five days. This allows for a team-oriented approach involving extensive collaboration, brainstorming, and creative thinking, resulting in a comprehensive and thorough evaluation.

Focus on Observation of Work Performance and Behavior

The intensive evaluation focuses on observation of simulated or real work. Simulated work activities, referred to as work samples, can be particularly useful in evaluations of clients who have significant disabilities (Power, 2000). Frequently, work samples are manipulated or accommodated, which is sometimes necessary to enable participants with severe disabilities to complete tasks at all. The intensive evaluation identifies reasonable accommodations and job modifications which make it possible to explore vocational options. A variety of accommodations can be made including (a) flexible scheduling to accommodate personal care needs; (b) adaptive writing equipment; (c) adjustable-height work stations; (d) computer work stations with specialized mice, monitors, keyboards, etc.; (e) office chairs adjusted to individual specifications; (f) powered tools rather than manual tools (i.e., an electric knife); (g) ambulation aids or mobility devices; (h) communication or sensory accommodations; (i) independent living aids; and (j) jigs and fixtures.

A more unique accommodation frequently provided in the intensive evaluation involves the participant instructing an assistant to complete a task he or she is unable to do physically. For example, some individuals may lack dexterity to put chips into slots on a sorting board, but are cognitively capable of making decisions in sorting. In this case, an assistant may hold up a chip while the participant uses a long-handled pointer to indicate the slot the assistant should put the chip in. Another option is to use a letter-number grid on the columns and rows of the sorting board, allowing the participant to state the location (i.e., B8) the assistant should place the chip.

Work samples also may be modified from their original purpose to assess different capabilities. An example would be a simulated assembly work sample that was designed to determine a participant's ability to assemble under time constraints (before the rotating table moves out of reach). For the intensive evaluation, this work sample is frequently used with individuals who are not capable of the standardized assembly task. They may do the first part of the assembly with a staff member completing the second and third parts. This requires the participant to complete the first part in enough time so that the other person can finish the second and third parts, demonstrating teamwork and planning abilities. Another modification involves controlling the rotating table with a variety of switches. To evaluate reaction time, a participant is instructed to push the switch to stop the rotating table at different marked points. The speed may vary, requiring the participant to adjust accordingly. This work sample has also been turned into an inspection task. Staff put various assemblies on the table and the participant inspects them and stops the table when one is incorrect, cuing another staff member to remove the incorrect assembly. Participants usually enjoy the interaction, immediate feedback, and problem solving involved in these tasks.

Work samples can be manipulated to accommodate physical limitations and learning and communication styles. Whether an individual learns and understands instructions presented verbally, in written English, in sign language, through demonstration, in pictures, or any combination of modalities is determined as early as possible. Once the preferred learning style has been identified, the CVE and ATP administer or modify the work samples and activities to accommodate this learning style. Examples of common work sample modifications include (a) providing instructions for a task pictorially rather than in written English, (b) allowing an individual with a vision impairment to use tactile methods when completing hands-on work samples, (c) cueing participants to continue to the next step of the task, (d) demonstrating how to do a work sample that is usually administered with a diagram, (e) reading instructions out loud, (f) providing a screen reader for a reading comprehension test, and (g) giving participants a completed end product or "model" to duplicate.

Sometimes the best communication or learning styles identified in the intensive evaluation contradict information given by referral sources or were completely unknown. For instance, one individual with CHARGE syndrome was reported to communicate best in sign language. However, her knowledge of sign language was found to be questionable and it was determined that teaching her new tasks through demonstration and gestures was more effective than signing the instructions, particularly since she often

did not pay attention to the interpreter. In addition, demonstrating what she was trying to communicate was more effective than discussing it.

With individuals who have severe disabilities, the intensive evaluation can also determine what type of reinforcement motivates them or how to engage them when they do not respond. One participant became engaged by operating various switches to demonstrate cause and effect. The participant was given a switch that operated a fan and learned that activating the switch resulted in feeling the air on her face. This was an enjoyable sensation to her and it caused her to engage in the situation and feel a sense of control over her surroundings. Once engaged, a number of different switches can be used to operate an endless amount of equipment. The staff motto is, "If you can wiggle it, we can switch it; if you can switch it, you can operate it."

Since traditional evaluation tools were not intended to be used with accommodations or assistive technology interventions (Langton, 1993), concerns with standardization and normative data arise in the situation of the intensive evaluation. However, the 30th IRI study (2003) identified the dependence on standardized instruments as part of the weakening of the field of vocational evaluation. Using standardized assessment tools on individuals who have disabilities without the use of assistive technology can provide inaccurate views of individuals' skills (Langton). The goal of a vocational evaluation should be to determine what individuals could do in the future rather than focus on their current skills (30th IRI). The use of assistive technology in vocational evaluation of people with disabilities is becoming more common, "eliminating any barriers that would compromise demonstration of their real potential and skills" (p. 76). Qualitative measures or criterion-based norms are used more frequently in the intensive evaluation. Normative data are utilized to the extent possible, but are always evaluated critically to determine appropriateness. Accommodations and technology provided, which deviate from standardization, are described in the staffing and final report and any possible concerns with validity are expressed.

Behavioral observation has been identified as a critical role and function of a vocational evaluator (Hamilton & Shumate, 2005). Observations are more important than normative data in the intensive evaluation. The CVE and ATP closely observe the individual's performance and behavior. While participants are completing tasks, observations are recorded and ways to maximize the individual's performance on the task are explored. Sometimes participants are stopped and an alternative approach is used to determine if it improves their performance. This information is compared to critical factors of job tasks and problem solving is required to determine reasonable accommodations and best job matches. Sometimes job crafting is recommended in which a job is designed around the skill set of the person.

Brief situational assessments are also sometimes used to evaluate appropriate accommodations. For instance, some participants have worked with a janitor to perform custodial duties such as cleaning, vacuuming, mopping, or washing windows. Other participants interested in culinary arts or food service occupations have made lunch or baked cookies. Additional situational assessments such as machine operation, welding, woodworking, and mechanical work have been completed in the fabrication lab. Throughout these types of activities, observation and recording of performance and behavior is particularly important since there is no standardization or guiding normative data.

Although accommodations are provided frequently, it may not be possible for the participant to utilize the ideal technology during the evaluation due to the time involved in learning to use it or non-availability of the device. In addition, the goal of the evaluation is to determine participants' skills, which may be affected by using new, complex devices. However, being able to experiment with devices has been found to correlate positively with the length of time for which they are used after purchase (Rogers, 1995). Consider an individual who has limited computer access and requires an alternate form of input. Since training on voice input is time consuming and rescheduling is usually not an option, the participant may briefly try it out. Then, the participant may dictate a letter using a tape recorder. It may be typed word-for-word by

an administrative assistant, giving the participant an opportunity to demonstrate editing skills necessary for use of voice input. The recommendation may be to pursue training on voice input or go through an in-depth computer access assessment. The short timeframe of the intensive evaluation limits use of the specific technologies, but the need can be determined and appropriate services recommended. In addition, the assistive technologist is able to continue working with the participant after the evaluation to determine specific necessary equipment or the participant may be referred to other specialists for various technology assessments.

The Necessity of Two Professional Staff

Accommodating individuals during an evaluation is not an easy task and there are no universal accommodations (Langton, 1993). This difficulty is addressed in the intensive evaluation by having two qualified, experienced staff – a Certified Vocational Evaluator (CVE) and an Assistive Technology Practitioner (ATP) – focus on one participant for five days.

Assistive technology and VE [vocational evaluation] are complimentary services and an excellent match for comprehensive service delivery. . . . A team approach combining the expertise of a vocational evaluator and an assistive technology professional . . . as now practiced in a few isolated settings would maximize the effectiveness of both services and enhance consumer satisfaction and success. (30th IRI, 2003, p. 39)

The CVE leads the evaluation procedures such as test and work sample administration and career exploration while the ATP is present for all activities and facilitates accommodations and assistive technology interventions. It is important for the CVE to be familiar with assistive technology (Langton, Smith, Lown & Chatham, 1998) as well as for the ATP to have at least a basic understanding of vocational evaluation. At times, the two roles overlap, with the ATP suggesting evaluation tools and the CVE inquiring about the appropriateness of different types of technology. It is necessary for both professionals to be present for and involved with the evaluation to allow for adequate concentration on each discipline; if an evaluator conducting a standard evaluation focuses on considering assistive tech-

nology, observations may suffer as a result (Brodwin, Star, & Slutsky, 2004). Most importantly, the collaboration and brainstorming between the CVE and ATP are necessary components to the thoroughness of the intensive evaluation.

When participants are completing work samples and testing, they have two sets of eyes watching them nearly all the time. This is sometimes hard for participants to get used to, but the fact that two professionals are observing is extremely important. The ATP and CVE frequently sit down together at the end of the day and discuss what they observed. This can be interesting at times if they perceived things differently, but usually a consensus is developed and the next day's agenda is decided upon. It is important to be flexible in planning to accommodate each day's findings.

Some intensive evaluation participants have minimal assistive technology needs, but benefit from teamwork, collaboration, and creative thinking between the ATP and CVE to develop the most appropriate and comprehensive recommendations, including behavioral modification strategies and low-tech accommodations. For example, one participant, Mark, had a traumatic brain injury with no physical limitations, but significant memory problems and off-task behaviors. When Mark became frustrated or bored with a task, he often walked out of the evaluation lab. The CVE and ATP determined strategies to use when he decided to leave, such as stepping in front of him and starting a conversation to distract him from his purpose. Also, a compromise was made that when Mark needed a break, he could walk around the building but not go outside. Signs were put up for him to get to the bathroom and back to the evaluation lab by himself (with staff following from a distance to ensure safety). He seemed to benefit from having some time alone and a sense of control over his situation. After becoming more familiar with Mark, staff were able to observe early signs of disengagement and frustration and developed strategies which helped him persist, such as working alongside him, engaging him in a conversation, or just moving on to a new task. The CVE found that asking Mark to help was an effective way to engage him when he stopped working or refused to start a task; Mark enjoyed

helping people. It was beneficial for the CVE and ATP to take turns interacting with and instructing him while the other observed.

An additional advantage to the provision of two professional staff is being able to manipulate the environment while still observing. For instance, one behavior always assessed is distractibility. One of the staff may chat with the participant while working or make a noise in the background to see if the participant is distracted and if work speed and quality are affected. While this occurs, the other staff person takes detailed notes on the participant's behavior and performance.

The CVE and ATP may also take turns simulating different supervisory styles and environmental demands. For example, the CVE may give positive feedback while the ATP is blunt with the participant in pointing out errors and the two may switch roles the next day. The goal of this type of activity is to create an environment similar to a real work setting. The awareness of work performance and behavior in multiple environments can help participants learn more about themselves and increase staff confidence in recommending particular work settings.

Multidisciplinary Team Approach

The nature of vocational evaluation lends itself to participation in a multidisciplinary team (30th IRI, 2003) that is emphasized in the intensive evaluation. The team approach begins with the collaboration between the CVE, ATP, and participant in an active partnership. The CVE and ATP are resources for the participant who facilitate career exploration and increase self-knowledge, improving the participant's ability to make informed choices.

Referral information is sought from all individuals and service providers involved with the participant such as doctors; physical, occupational, and speech therapists; schools; vocational rehabilitation counselors; family; and any others relevant to the individual. This is beneficial to see different perspectives on the individual, determine current services received, and avoid duplication of services. At times, referral information is very different from what is seen during the evaluation and this discrepancy is explored.

During the intensive evaluation, a multidisciplinary team approach may also be used with other practitioners. When appropriate and available, participants may consult with seating and mobility specialists, design/fabrication staff, computer access specialists, or placement specialists. Their particular expertise may have a significant effect on the evaluation. For instance, an individual who used a power wheelchair and demonstrated significantly below average work quality and speed met with a seating and mobility specialist during the intensive evaluation. The participant was repositioned in his chair for *function* and a dramatic change was immediately apparent. After the seating assessment, the participant's performance improved significantly, putting him in the average to above average range for work quality and speed. With minimal assistance, he was then able to complete tasks that he was unable to complete earlier in the evaluation because of inappropriate positioning.

Often during an intensive evaluation the participant stays in a dormitory supervised by staff members who can provide various levels of support including attendant care, recreational assistance, and nursing services. Many times, staying in the dorm can be an experience in itself as some participants have never been away from home alone or have not been away since their injury. Others may never have had their personal cares provided by someone outside of their family. Because it is important to identify how participants interact with others and handle their activities of daily living away from the evaluation site, the dorm staff report on observations in the area of independent living needs, activities of daily living, and social skills. The dorm staff is typically not involved directly in the evaluation, and gets to know the participants on a different, more casual level. Observations from dorm staff are essential in providing information from an objective viewpoint, rounding out the multidisciplinary approach.

A collaborative approach is continued throughout the week into the staffing. With the individual's consent, any and all service providers and support people involved with the individual are invited to the staffing at the end of the evaluation. Such supports could include family; social workers; teachers and other school staff; psychologists/counselors; speech, physical, and

occupational therapists; advocates; personal care workers; employers; and vocational rehabilitation counselors. Gathering as many stakeholders as possible from the participant's support system is extremely important, as they are the team that will facilitate and possibly fund the recommendations. The recommendations and outcomes from the intensive evaluation are not always vocational because in some situations there are many issues to resolve before the individual is ready for work. It is important that this team understands the recommendations, hears the rationale for them, and is able to provide feedback and ask questions to increase their inclination to assist in implementation since participants have higher success rates when their evaluation recommendations are followed closely (30th IRI, 2003).

Frequently, an evaluator's working relationship with participants ends after the evaluation is completed. It is rare to know what happens to the participant and if the recommendations are followed. The 30th IRI study (2003) identified the need for vocational evaluators to continue their involvement in the participant's rehabilitation plan after the evaluation. A benefit to the intensive evaluation is that the ATP is available to implement assistive technology and often continues working with the participant after the evaluation. When the vocational recommendations involve job crafting, the ATP may collaborate with the vocational rehabilitation counselor, placement specialist/job developer, employer, and participant to ensure vocational success. The ATP can informally update the CVE on the participant's progress during implementation. This can help the CVE learn what worked and what did not and adjust accordingly, if necessary.

Three Major Goals of Intensive Evaluations

The intensive evaluation strives to be comprehensive which requires evaluating individuals and their environment as a whole. Vocational aspects are an emphasis, but for many intensive evaluation participants, there are a myriad of issues to resolve before they will be successful in work. Goals of the intensive evaluation are to address performance enhancement, independence, and quality of life to increase overall success.

Performance enhancement refers to identifying ways to improve abilities and increase overall speed. This requires flexibility and creative thinking on the part of the CVE and ATP to focus the evaluation on the participant's learning style and abilities while determining alternative methods to complete tasks. It is important to determine critical factors of job tasks and then ascertain how individuals can accomplish these tasks or how their performance can be improved.

A notable example of effective performance enhancement was with a participant who had cerebral palsy with significant spasticity. Other practitioners had recommended various workstations which had not worked well for her. During the intensive evaluation, it was determined that her most effective position was out of her wheelchair, on the floor. In this position, she was able to communicate more effectively and her performance on many tasks and computer usage improved. The evaluation was conducted primarily with her on the floor and recommendations included working on mats at ground level as much as possible and reorganizing her living area to be accessible from the floor.

The second goal of the intensive evaluation is to increase independence. Individuals with severe disabilities frequently have independent living needs upon which their vocational potential is contingent (30th IRI, 2003). The overall intention of the intensive evaluation is to lessen the individual's reliance on others for assistance. Transportation options and self-help aids that allow people to complete tasks on their own are identified for vocational activities and activities of daily living.

Sometimes participants are not independent because they have not had a chance to demonstrate that they can be. Parents, caregivers, and aides are discouraged from attending the evaluation each day with the participant. This may be one of the first times the participant has worked with service providers independently. Frequently, parents and caregivers are amazed at the participant's capabilities. An example was Jake, a 16-year-old who had a rare, progressive disorder resulting in limitations in mobility, sight, speech, dexterity, cognitive abilities, and work tolerance. Jake's parents had good intentions but did many activities for him. Jake was very passive and admitted that he was used to others do-

ing things for him, including talking for him. The ATP and CVE determined that there were many activities that Jake could do on his own and encouraged greater independence. Jake's mother was very emotional when she realized that her son could do many things that she had been doing for him. In addition, Jake was considering back surgery for scoliosis. After being referred to a specialized health care center by the evaluation staff for a customized seating assessment, it was determined that he no longer needed the surgery. A year later, the assistive technologist continues to work with Jake on implementation. Jake now has a height-adjustable work station; a ramp providing better access to his house; environmental controls to turn on lights, signal his parents for assistance, etc; and a lift system that brings him from his bed to the bathroom and to his wheelchair in the living room. Jake is now much more independent and his self-advocacy skills have increased considerably.

The third goal of the intensive evaluation is to increase quality of life. Positive quality of life can have different meanings for different people, but generally involves a meaningful job or volunteer activity, experiencing close relationships, feeling self-confident, having fun, being safe, and living life according to one's personal values and beliefs (Brown & Brown, 2003). The intensive evaluation specifically addresses socialization, recreational activities, and community involvement in addition to anything else relevant to the participant. Frequently, participants who have incurred injuries do not believe that they can enjoy their past hobbies. A common leisure activity in Wisconsin is hunting. The ATP can give examples of different adaptive devices which may make it possible to hunt. Although a participant with a spinal cord injury may not be able to access a tree stand, he or she may still be able to enjoy being in the woods and hunting from a ground blind. Other common recommendations are to become involved with peer support groups to meet others with similar disabilities or pursue adaptive sports.

An Eye-Opening Experience

Due to the fusion of assistive technology into the vocational evaluation process, many individuals find that they can accomplish things that they had no idea they were capable of. During a standard evaluation, the evaluator can tell participants about assistive technology and they may receive a brief technology assessment, but the ability to really see what they are capable of during the intensive evaluation brings it to a different level. A lot of successes happen during the week.

One individual who found hope during the intensive evaluation was Alicia, a 23-year-old who had quadriplegia as a result of a motor vehicle accident in high school. Referral information alluded to lack of motivation and personality issues. As the week progressed, Alicia expressed significant frustration with her situation. She had not received any adjustment counseling and said she felt as if her postsecondary dreams were shattered. Being a trendy young woman, she found it very difficult to rely on her mother to dress her and do her hair. As she was recovering, she only received a brief introduction to assistive technology with no training that lead to technology abandonment.

As the evaluation progressed Alicia began to shed the walls of frustration, helplessness, and hopelessness. At one point, she broke down crying at the realization she could continue to pursue her hopes and dreams. By the end of the evaluation Alicia was a different person. She commented that the evaluation had given her hope and a sense of independence. During this short week, Alicia increased her self-knowledge, was able to explore careers with a different perspective, learned that she could be more independent, and, as a result, her overall quality of life improved. She and the ATP followed through with assistive technology recommendations including computer and telephone access and a workstation.

Sarah is another person who found the intensive evaluation to be a significant experience. She was in a car accident at age 24, incurring a traumatic brain injury with limited dexterity, right side weakness, and visual deficits. At the time of the evaluation, Sarah lived with her mother, had constant personal care assistance, and thought her situation was hopeless.

Previous to her injury, Sarah was a welder. Although she was reluctant, she tried welding during the evaluation and welded a perfect bead with assistance balancing. After she was done,

staff removed her welding helmet and saw that there were tears streaming down her face. This experience gave her hope and opened up a world of possibilities for her. With the help of a supportive vocational rehabilitation counselor and continued assistance from the ATP, Sarah now has a driver's license, lives independently, and has a full-time job and a part-time job.

The "Four P's"

Intensive evaluations have been conducted for over 12 years and the process continues to evolve every time one is completed. For instance, one staffing involved showing pictures of key parts of the evaluation on a computer screen rather than presenting a typical written staffing report to emphasize certain aspects and ensure the participant's understanding. As staff gains experience, technology changes, and new methods of assessment are developed, the intensive evaluation improves. However, one thing that has stayed constant is the necessity of the "Four P's."

The first P is purpose, which relates to having an understanding of what is going to be accomplished during the five-day evaluation. Everyone has positive skills, behaviors, and traits and the goal of the evaluation is to uncover these positive attributes and relate them to the world of work. The week is planned with focus on a positive outcome. The purpose of the intensive evaluation is to determine what participants can do, rather than emphasize what they are not able to do. It is necessary to identify limitations, but the goal is to determine how to overcome or minimize them.

The second P is passion. The intensive evaluation requires staff to dig a lot deeper than they can in standard evaluations or regular technology assessments. To do an intensive evaluation well, the staff needs to care about what they are doing and feel that they can make a difference. This is not the type of job in which you clock out at the end of the day and forget about work. Professionals who excel at conducting intensive evaluations find intrinsic value in their jobs. This kind of passion is required to better identify skill sets, observations, and little nuances that could otherwise be missed.

The third P is patience and is probably the hardest one to obtain. Sometimes it just seems easier to discontinue tasks when participants struggle because they probably cannot do them or give them accommodations before they even try on their own. Patience is necessary to be able to sit, listen, and wait for individuals to demonstrate their skills. Some participants begin the week as passive observers but are encouraged to actively participate in the intensive evaluation. With some participants, everything takes a little longer and staff needs to be flexible and adjust to the participant's speed.

The last P is professionalism. It is important to focus on treating each participant as an individual, realizing that disabilities come in numbers of one. Intensive evaluations should be a person-centered, collaborative process. Actively involving the participant in the selection of assistive devices can reduce technology abandonment (Riemer-Reiss & Wacker, 2000) and collaborating on recommendations increases acceptance.

Finally, an intensive evaluation should be fun. It can be intense for participants to be critically examined all week by two people, so it is necessary to have some fun with them too and let them know that they are working with them are "regular people." There can be a lot of frustration, but the goal for the end of the week is to be able to say, "That was fun - we did a good job and we're looking forward to the next one."

The teamwork and brainstorming between the CVE and ATP is critical for the effectiveness of the intensive evaluation. Assistive technology is considered to improve the participants' independence, quality of life, and vocational options. Follow-up indicates that over 300 participants and counselors have been satisfied with this comprehensive service driven by dedicated staff.

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BIOGRAPHICAL SKETCHES

APRIL PIERSON, MS, CVE, CRC, is a vocational evaluator and benefits counselor at the Stout Vocational Rehabilitation Institute in Menomonie, WI. She also manages and creates online continuing education courses in rehabilitation. Ms. Pierson has a master's degree in vocational rehabilitation with concentrations in rehabilitation counseling and vocational evaluation from the University of Wisconsin – Stout.

JEFF ANNIS, MS, CVE, ATP is a senior rehabilitation specialist at the Stout Vocational Rehabilitation Institute (SVRI) in Menomonie, WI. He has a bachelor's degree in vocational rehabilitation, and a master's degree in vocational evaluation. Mr. Annis' extensive background in both vocational evaluation and assistive technology led to the development of the intensive evaluation. He has been involved with numerous presentations and publications, most recently as a contributor to the 30th IRI study. In addition, Mr. Annis is experienced in assistive technology fabrication and has collaborated with other practitioners and industry to develop a patented elevating cooktop and preparation table. Mr. Annis currently provides assistive technology services and works in the ATP role for intensive evaluations.

KARA JAMES, MS, CVE, CRC is the vocational evaluation services manager at the Stout Vocational Rehabilitation Institute in Menomonie, WI. She provides vocational services to diverse populations of individuals and also supervises graduate and undergraduate students in the vocational rehabilitation program at the University of Wisconsin-Stout. Ms. James received her master's degree in vocational rehabilitation and special education certification from the University of Wisconsin – Stout.

CASEY LUBINSKY, MS, CRC, CVE is a vocational evaluator at the Stout Vocational Rehabilitation Institute in Menomonie, WI. She received her bachelor's degree in communication sciences and disorders – teaching from the University of Wisconsin-Eau Claire. She then pursued her master's degree at the University of Wisconsin-Stout in vocational rehabilitation with concentrations in rehabilitation counseling and vocational evaluation.

ERIKA PETERSON, MS, CVE, ATP, CRC is a vocational evaluator and assistive technologist for the Stout Vocational Rehabilitation Institute in Menomonie, WI. She provides both vocational services as well as assistive technology services to individuals with a variety of disabilities and works in the role of both the CVE and ATP for the intensive evaluation. Her prior work experience involved providing seating and mobility services. She received her master's degree in vocational rehabilitation from the University of Wisconsin-Stout.

The VECAP Position Paper on Universal Design for Learning: Another Step toward Social Justice

Pamela J. Leconte
The George Washington University

Frances G. Smith
Virginia Commonwealth University

Christine Johnson
Maryland State Department of Education

Abstract

Adoption and implementation of universal design for learning (UDL) within vocational evaluation moves our practice closer to achieving social justice. UDL is grounded in theories of cognitive development and learning. Add to this the contemporary research on brain-based learning combined with the growing use of digital media, and participants in vocational evaluation have more opportunities to gain access to all facets of the process, all methods (e.g., work samples, written instructions, psychometrics), and, thus, improved outcomes. Three tenets guide UDL: every aspect of learning and assessment must have multiple means of representation, multiple means of expression, and multiple means of engagement. These tenets translate into actual operation with vocational evaluators' long-held principle that practices should use a variety of assessment techniques and approaches for individuals to realize their vocational potential. VECAP and the Commission on Certification of Work Adjustment and Vocational Evaluation Specialists (CCWAVES) endorse this principle. VECAP is expanding the meaning of this principle by endorsing the use of UDL in assessment and by proffering *The National VECAP Position Paper on Universal Design for Learning and Assessment*. That paper is contained in this article.

Introduction

Recent articles in this journal have addressed the need for vocational evaluators to eliminate barriers to fair and equitable assessment (Quinn, 2006), and to achieve social justice for vocational evaluation participants (LeBlanc, 2005). Indeed, our profession emerged to provide fairness and equity in vocational assessment (Nadolsky, 1983) with the goal of facilitating successful futures, societal integration, and vocational achievements by participants. Primarily, vocational evaluation participants represent people who face the greatest challenges in learning and barriers in work. Use of work samples and various community-based practices (situational assessment, on-the-job evaluations, job trials or try-outs) allow people who do not or cannot perform well on paper and pencil (and, now, computer-based assessments) opportunities to demonstrate what they can do to learn their vocational interests, preferences, and clarify their potential (by smelling, feeling, and emotionally relating to various vocations and real work). While equality is the ideal or the goal for all vocational evaluation participants, it has been difficult to achieve. This is particularly true today because participants are more diverse with more differences than ever before. Universal design for learning provides evaluators and participants a means to move closer to equality and social justice.

Vocational Evaluation as a Learning Intervention

If one accepts the premise that vocational evaluation is a learning process, and an *intervention* that fosters participant *learning* in the contexts of vocation and work, then universal design for learning (UDL) affords the opportunity for *all* participants to access, fully engage

in, and benefit from the service—meaning they can experience optimal learning. Bransford, Brown, and Cocking (2000) write that learners have predispositions to learn in specific domains. In vocational evaluation with its hands-on methods in real or simulated work environments, participants learn to which career or occupational domains they are predisposed. Such learning helps them develop new interests and build knowledge about particular careers, occupations, or jobs, including their potential roles in the same. In this way, learning fosters, even produces, career development within the individual (Bransford, et al, 2000). By observing participants' behavior and performances on particular types of work, evaluators witness participants' predispositions, which are called temperaments, and interests.

Vygotsky (1978), a cognitive learning theorist, notes that human beings are the only species that use tools to alter their minds (i.e., learn in their inner worlds). Certainly vocational evaluation is an example of this. He writes that learning does not occur in isolation, but occurs by being connected to one's surroundings or environments. Learning of this type that builds on social interactions, heightens one's attention, memory, perception, language and other cognitive development—which helps to explain why vocational evaluation participants often become motivated and enthusiastic during the process. Supporting this phenomenon of vocational evaluation is Vygotsky's (1978) theory that individuals' learning is awakened when they interact with certain environments and the people who populate those environments. His theory helps explain why some people who perform poorly in school academics, begin to achieve when academics are couched in vocational or career contexts, especially through hands-on, experiential engagement.

The reality of the work context in vocational evaluation can be viewed as encouraging learning and stimulating optimal performances, leading to development. Often, reports from referral sources state that participants are not motivated, interested in learning, or do not perform well. Evaluators frequently see these contrary results and transformations. Evidence of internal (new interests, belief in themselves, visualizing themselves in a certain work environment) and exter-

nal learning (actual performances of ability and potential and work behaviors) demonstrates the complexity of what we interpret in our vocational profiles and reports. These are the benefits and outcomes of what Lave and Wenger call "situated learning" (1993).

Bransford, et al (2000) state that depending on the learner and the content of what is to be learned, different approaches, design of learning environments, and flexibility in strategies can facilitate learning, transfer of knowledge, and competence in performance. This statement, while reminiscent of the role assistive technology has played in vocational evaluation, captures the essence of UDL. UDL is a concept that necessarily precedes the use of assistive technology (AT) and in fact, could reduce the need for AT. However, vocational evaluation participants will gain maximum benefit when AT services are used in conjunction with a vocational evaluation process that is universally designed for learning. The more avenues (ways of learning) and options vocational evaluation participants have to learn, the greater their career, vocational, and employability outcomes will be. Methods (work samples, job analyses, community-based assessments) and environments (real or simulated work) used in vocational evaluation partially contribute to effective learning and development. Implementation of three UDL tenets within vocational evaluation will enhance effective learning also.

Three UDL Tenets Guide Practice

Three tenets guide UDL:

a) having multiple means of representation that require providing multiple flexible methods of presentation to maximize understanding,

b) having multiple means of expression that require multiple flexible methods by which individuals can demonstrate understanding, and

c) providing multiple means of engagement that require having multiple flexible ways to keep individuals engaged in learning (The Center for Applied Special Technology (CAST) 2006; Rose & Meyer, 2000).

These tenets are based upon contemporary brain-based learning studies (CAST, 2006) and

are aligned with Vygotsky's (1978) theory of cognitive development. Vygotsky believes three conditions are necessary for learning to take place: a) learners must recognize patterns (in content), b) they must possess strategies to act on the patterns, and, c) they must be engaged in the strategies and content as they apply them to their learning situations. Vocational evaluation that is designed with these UDL tenets would provide improved access for participants, thereby moving our practice closer to achieving social justice.

Universally designed vocational evaluation settings provide first for engagement due to the use of work samples with high face validity (if it looks, feels, smells, and sounds like work, it must be work), and real or simulated work situations. Vocational evaluation provides multiple ways of engaging in the environment, content, and process via hands-on activity, virtual reality techniques, or more traditional avenues (reading, web searching). Next, multiple ways of accessing information via different representations (e.g., digital text that allows computers to read instructions, captions on video directions, ASL interpreters) allows participants to select from a variety of strategies to engage in the content. Finally, multiple ways of expressing their preferences and abilities (computerized speech-to-text to record responses or opinions, demonstrating skills by completing work tasks and exhibiting ability to follow sequenced procedures, constructing a graphic organizer on a computer) are either naturally available, or could be at low cost, in experience-based vocational evaluation. Using a variety of these assessment methods, environments, and activities permits participants with the most severe disabilities, with few skills in English, and those with a history of learning failure, to succeed in learning and, therefore, in developing.

Another Step toward Equality and Social Justice

Making vocational evaluation available as an alternative for traditional paper and pencil, or making psychometrically based vocational assessment, represent the first step toward equality and social justice. The second step is characterized by guiding principles described in an earlier interdisciplinary position paper that outlined the need for fairness and equity in vocational assessment regardless of who offers the service. This paper was one outgrowth of a 1990's consensus-building initiative by vocational evaluators that brought together several national associations that either provided, or worked in relationship to, vocational assessment and evaluation. This initiative produced two documents, one of which received considerable press: *The Position Statement of the Interdisciplinary Council on Vocational Evaluation and Assessment* (Smith, Lombard, Neubert, Leconte, Rothenbacher, & Sitlington, 1994). The paper seemed necessary to underscore the concept of creating fairness and equity in any type of vocational assessment, regardless of who provided it.

The third step occurred when vocational evaluators developed and disseminated the *VECAP* (then Vocational Evaluation and Work Adjustment Association) *Position Paper on the Role of Assistive Technology in Assessment and Vocational Evaluation* (1997), stating that if services are offered without assistive technology, they are unfair and discriminate against certain people. Assessing and providing assistive technology both prior to and while participants are involved in both the learning and development processes of assessment and evaluation afford participants the best opportunity to demonstrate their capabilities, talents, and skills. This concept was deemed essential to equity and fairness. Universal design for learning serves as a fourth step in seeking equity for people in need of career, vocational, and employment guidance and assistance and brings us closer to the ideal of equality for all.

Practice Driving Policy

Historically, practices conceived and implemented by vocational evaluators have helped shaped policies that eventually set the standard for our profession. Because the profession lacks so few formal education programs and even fewer textbooks, practitioners have defined practices that are compiled in training documents issued by government-funded programs. The recent 30th Institute on Rehabilitation Issues training document is a good example. *A New Paradigm for Vocational Evaluation: Empowering VR Consumers through Vocational Evalua-*

tion (Ahlers, et al, 2003) highlights universal design as one of four major philosophies or themes driving paradigm shifts in vocational evaluation. Adopting the UDL philosophy and approach automatically empowers participants as they need less attention and accommodations and increases the opportunity to self-direct their assessment and subsequent outcomes. Notably, the Rehabilitation Services Administration of the U.S. Department of Education vetted the document as they provided the funding to write it.

The UDL Revolution

The idea of universally designing for access originated in the field of architecture and now, increasingly, educational literature is encouraging that universally-designed education is the most effective way to include all learners (Dolan, Hall, Banerjee, Chun, & Strangman, 2005; Hitchcock & Stahl, 2003). The UDL concept is stimulating changes in how learners are participating and achieving in education (Rose, 2005; Rose and Meyer, 2002), and is becoming recognized as essential and beneficial for all, including people with disabilities, language or cultural differences, or other learning challenges.

Universal Design Principles Inform UDL

Universal design (UD) has proven that initial architectural design of buildings, products, and structures, *is helpful to all users, is cost effective, as well as socially just*. When ramps are integrated into a new building from the onset, later modifications—with added costs—are not needed. UDL builds upon that thinking and extends the UD concept to access and participation in instruction, curricula, and assessment that is fair and as equitable as possible for all learners. For vocational evaluators, professionals who have long advocated doing "whatever it takes" to identify potential, reveal positives in abilities and skills, and facilitate human growth and career development for people who face major life challenges, UDL provides promising strategies and opportunities. By creating vocational evaluation environments, methods, techniques, and activities that are accessible from the start and that provide flexibility in application, participants' learning, decision-making, and planning will be enhanced.

The seven principles that have guided the design of products, structures, and environments within a universally designed context, also inform UDL. The principles serve as criteria by which access and participation can be evaluated. They are (1) design is equitable in use, (2) flexible in use, (3) simple and intuitive to use, (4) provides perceptible information (the design communicates necessary information effectively), (5) allows tolerance for error (while minimizing hazards and adverse consequences), (6) requires low physical effort, and (7) provides size and space for approach and use (The Center on Universal Design, 2005). In using these principles to guide and frame vocational evaluation, we can design assessments that allow increased access and therefore participation, moving us toward a more authentic stance of equity for all.

Eliminating the Need to Adapt and Modify

Frequently, vocational evaluators redesign or modify assessment instruments, activities, and procedures to improve access and participation that leads to successful outcomes and more opportunities for growth. Preparing instruction and assessment with access points that eliminate potential barriers provides access for all. For instance, if an interest inventory is available digitally or uses pictures, videos, or sound, more people can use it without adaptations. With digital formats written language can be automatically translated into one's native language, thus increasing the likelihood that one understands the concepts and intent of the inventory.

A primary goal of vocational assessment, especially vocational evaluation, is to discover what works for individuals in their quest for education, training, and employment. These discovery efforts are enhanced because both UDL and vocational evaluation methodologies cater to differences in learning and working styles, various multiple intelligences (Gardner, 1999), and varying instructional and work approaches. For example, someone with limited English skills benefits from reading text on a computer while listening to accompanying speech to practice hearing the sounds of the language as well as pronunciations. Digital text makes this possible, and digitizing text is becoming available exponentially. The same individual can watch a video or live demonstration of how to repair drywall

and exhibit ability to learn and perform. Other participants might express their preferences or thoughts by drawing pictures rather than speaking or writing.

Fads and bandwagon approaches are touted often in education. However, when a new concept makes sense, is supported by research evidence, and is founded on sound theories that form a solid conceptual framework, the new concept is here to stay. UDL meets all of these criteria.

CONCEPTUAL FRAMEWORK FOR UDL

Universal design for learning formed around the emergence of flexible applications of technology that, in turn, rest upon research on brain-based learning differences, learning theories, brain networks, and digital content. These four topic areas form the conceptual framework for UDL in instruction and assessment. Underlying principles for UDL align with the guiding principle endorsed by vocational evaluators (and others who supported the Interdisciplinary Council's Position Paper): vocational assessment should use a variety of techniques and approaches for participants to realize their vocational potential (Smith, et al, 1994). In other words, all individuals benefit from different approaches and varieties of options for instruction and assessment. A new corollary to this asks that evaluators rely less on printed media and use digital formats, thus increasing the malleability of the material and the assurance that more individuals can use it.

Learner Differences and Brain-based Research

Through advances in neuro-imaging tools such as positron emission tomography (PET) scans and evoked response potentials (ERP), researchers can now understand how learning is distributed through neural networks in the brain. For example, views of the brain during learning show that certain areas light up for recognition networks when viewing patterns and highlight the strategic networks when individuals coordinate and plan steps for solving problems (Rose, 2005; Rose & Meyer, 2002). Research in neuroscience (Bransford et al., 1999, 2000; CAST, 2006; Rose & Meyer, 2002) highlights the value in understanding how the brain receives and as-

similates information through multiple hierarchical and parallel processes. PET scans and ERPs allow researchers to observe the processes of learning, to the point of noticing differences between how novices and experts learn, and which regions of the brain light up while learning is taking place (Bransford et al., 2000, 2002; CAST, 2006; Rose & Meyer, 2002; Rose, Meyer, & Hitchcock, 2005). UDL incorporates this brain-based research and promotes strategies that align with an individual's unique learning preferences and needs (Bransford, Brown, & Cocking, 1999, 2000; Bransford, Vye, & Bateman, 2002; CAST, 2006; Rose & Meyer, 2002, 2005). Once vocational evaluators embrace the UDL strategies, they too will be able to address participants' unique learning preferences and needs and foster growth and development in multiple ways through multiple means.

Learning Theory—How People Learn

Conceptualizing vocational evaluation as a learning intervention and process means research about learning is relevant to our practices. Evaluators assess learning in equal parts of performances and behaviors. Typically, evaluators observe and assess how people learn to assist in future education, training, and employment; learning theories support this particular assessment purpose. Researchers have determined three factors that promote learning (Bransford, Brown, & Cocking, 2000). First, learners come to a learning situation (assessment) with preconceived ideas about how knowledge works. In vocational evaluation their initial understanding should be identified before effective learning can occur. For instance, if participants are not oriented properly about why they have been referred to vocational evaluation, misunderstandings such as thinking they will be tested with medical instruments can inhibit learning and performances—if they show up at all.

Second, to perform or develop competence in an area, learners need a deep understanding of the context and facts (Bransford, et al. 2000). For instance, experts are able to notice, organize, and interpret information more successfully than novices. Over time, experts develop skills to quickly recognize patterns in information and organize knowledge around key concepts. Thus, Bransford et al. (2000) stresses the importance

of providing learning experiences that can enhance novice learners' abilities to recognize patterns. Arguably, most vocational evaluation participants are novices within most occupational contexts, but given the opportunity to try real or simulated work, many demonstrate aptitude or potential to learn beyond the novice stage.

Finally, the third factor supporting learning states that learners need to develop a metacognitive approach to learning so that they can self-assess, understand, and appreciate their strengths and differences. This aligns with the empowerment goal of vocational evaluation. Instructional and assessment situations that offer frequent feedback, assist participants in self-discovery of their strengths, and encourage their ownership in their learning process encourage metacognition (Bransford, et al. 2000). Bransford et al (in press) underscore the importance of learners' comprehending the value of self-understanding, to capitalize on metacognition in learning in order to become life-long learners. Vocational evaluation addresses this factor as a matter of routine.

Neural Learning Networks

According to the research at The Center for Applied Special Technology (CAST, 2006), individuals receive and interpret information through three primary neural networks—recognition, strategic and affective networks (Rose & Meyer, 2002). Learning through these neural pathways is differentiated by the recognition network that involves the *what* of learning, the strategic network that emphasizes the *how* of learning, and the affective network that engages the *why* of learning. Instructional approaches that apply these multiple representation practices support a UDL approach. For example, factors that target recognition network learning include providing multiple examples of content, highlighting critical features, and offering multiple media formats (e.g., video presentation, audio recording, or interactive web site). Strategies that support strategic networks include utilizing models of performance, opportunities to practice with supports, ongoing feedback, and opportunities for demonstrating skill (e.g., developmental steps in completing an electronic portfolio instead of a paper, or a completed work sample).

Finally, affective networks are taken advantage of by offering instructional choices, adjustable levels of challenge, varied rewards, and choices of learning context (e.g., including individual's opinions and ideas to select approaches or design of final products) (CAST, 2006; Rose, Harbour, Johnston, Daley, & Abarbanell, 2006; Rose & Meyer, 2002; Rose, Meyer, & Hitchcock, 2005). Vocational evaluators, through their work to improve access and participation that leads to successful outcomes and more opportunities for growth, need to include the *what*, *how*, and *why* that neural network research and UDL support.

Digital Formats

The most prominent advocates for UDL, who also coined the term, are researchers at CAST associated with Harvard University. They encourage a shift from reliance upon a single, printed text medium to digital media—increasing its transformable and flexible qualities (CAST, 2006; Rose & Meyer, 2002; Rose, Meyer, & Hitchcock, 2005). For example, when instructional and assessment materials are in digital formats they can be easily enlarged, color-coded or restyled, read aloud by a speech synthesizer, and hyperlinked to supporting materials. Researchers note that expanding the assistive features of digital technologies can provide new access to standardized assessment approaches (Thompson, Johnstone, Anderson, & Miller, 2005). Working from the National Center for Educational Outcomes at the University of Minnesota, these investigators primarily evaluate large, high-stakes assessments such as high school exit examinations or state competency tests that monitor students' progress in reading, mathematics, science, etc. Fortunately, vocational evaluators have more latitude and can create more authentic, performance-based assessment that can complement, supplement, or even supplant, standardized instruments.

Bransford, Brown, and Cocking (1999) believe that because many new technologies are interactive "it is now easier to create environments in which students can learn by doing, receive feedback, and continually refine their understanding and build new knowledge" (1999, p.1). Bransford, Vye, and Bateman (2002) express that the interactivity functions of new technolo-

gies help learning by allowing learners to revisit parts, test their ideas, and explore instructional material more fully. This fits perfectly with the methods and approaches used in vocational evaluation. The availability of technologies that enhance interactions, creates more opportunities for participants to guide their evaluation processes, to give feedback to evaluators and others, and to add to their vocational knowledge.

Instituting flexible use of digital media may seem an insurmountable undertaking for many vocational evaluators who work with inadequate budgets, technology infrastructures, and technology training; but not to seems ethically unacceptable. VECAP hopes that the UDL Position Paper will help provide rationale that evaluators can share with administrators, colleagues, and accrediting bodies, such as the Commission on Accreditation of Rehabilitation Facilities. It is intended that the Position Paper be used to persuade federal and local policymakers that UDL is essential, practical, and cost effective.

In the previous sections, the authors try to set the stage for why UDL is essential to vocational evaluation and to provide rationale for implementing it in vocational assessment practices. The authors' aim is to convince vocational evaluators and others who assess people that instituting UDL in assessment and evaluation provides more equity and fairness to participants. The following VECAP Position Paper is offered as a mechanism to underscore the importance of UDL and to advocate for its use in vocational evaluation and career assessment.

VECAP POSITION PAPER ON UNIVERSAL DESIGN FOR CAREER ASSESSMENT AND VOCATIONAL EVALUATION

Vocational Evaluation and Career Assessment Professionals (VECAP) endorse the incorporation of universal design for learning (UDL) tenets, principles, and practices in career assessment and vocational evaluation. VECAP advocates for the application of universal design principles in vocational evaluation and career assessment to expand and enhance best practices and to seek social justice for consumers and participants.

Universal design for learning (UDL) is defined by the Center for Applied Special Technology (CAST) (Rose & Meyer, 2002) as an approach that embodies the principles of universal design and applies them to instruction and assessment. This requires that all assessments "be designed from the beginning to be accessible and valid with respect to the widest possible range" of individuals (National Center on Educational Outcomes, 2005). A UDL approach encourages the use of multiple techniques and tools that are accessible and appropriate for individuals from varied backgrounds, learner styles, and abilities—and eliminates barriers to full engagement, learning and discovery in vocational evaluation and career assessment. Three UDL tenets guide effective practices that advance fairness and equity (Rose & Meyer, 2002):

Provide multiple means of representation to give learners various ways of acquiring information and knowledge (e.g., instructions for work performances and methods, such as work samples, standardized inventories, situational assessments are available in a variety of formats).

Provide multiple means of expression, to provide learners alternatives for demonstrating what they know (e.g., individuals may use hands-on performances, oral, written, graphic, video, or computer-generated communication as well as American Sign Language).

Provide multiple means of engagement, to tap into learner's interests, offer appropriate challenges, and increase motivation (e.g., individuals may watch, listen, use their hands and bodies as well as digital platforms in the assessment process and shall help guide the process by selecting areas of interest or curiosity).

By following these tenets, UDL facilitates access to and participation by all who wish to engage in vocational evaluation and career assessment services. Engagement indicates that they will help guide, plan, and participate fully.

Vocational evaluation and career assessment processes that include universal design and UDL support equity and inclusive practices and improve individual success. Integrating an array of techniques, a variety of tools, and multiple representations of material in digital formats represents a universally designed approach. Applying UDL principles to assessment enables practitio-

ners to offer processes that are flexible, accessible and appropriate. Research of brain-based learning CAST, 2006; Rose & Meyer, 2000, 2003) multiple intelligences (Gardner, 1999), varied learning style preferences, and diverse learner approaches supports the need to reach out to assessment participants using UDL approaches. As a result, subsequent career planning and programming can be individualized and customized to gain maximum benefit for participants.

Previously, VECAP endorsed the definition of vocational evaluation and assessment as articulated by The Interdisciplinary Council on Vocational Evaluation and Assessment (Smith, Lombard, Neubert, Leconte, Rothenbacher, & Sitlington, 1994), which follows. Integration of UDL in evaluation and assessment processes is compatible with and guided by this definition.

Vocational evaluation and assessment is a professional discipline that 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 and assessment professional provides services to measure, observe, and document an individual's interests, values, temperaments, work-related behaviors, aptitudes, skills, and physical capacities, learning style and training needs. The foundation of vocational evaluation and assessment is that all human assessment should be holistic and humanistic. A holistic approach encompasses issues of diversity, all relevant attributes of the individual, his/her existing or potential environments (ecologies), and the interactions between the individual and the environments. A humanistic approach to vocational evaluation and assessment requires consumer involvement, and processes that are designed and implemented to benefit the individual served, with an emphasis on individual capabilities rather than disability. Further, the environment should fit the individual rather than the individual adjusting to

fit the vocational environment (1994, p.1)

Efforts to provide holistic and humanistic assessment services require the integration of UDL from the onset of any assessment process. By doing so, professionals facilitate a third principle of career assessment and vocational evaluation (Smith, et al, 1994)—that services foster human growth (i.e., enhanced maturity, improved self-esteem, advanced self-determination, and enhanced personal responsibility) and career development.

Benefits of Including UDL in Career Assessment and Vocational Evaluation Practices

Benefits of UDL will be realized by participants in services as well as by professionals. Including UDL in vocational evaluation and career assessment can

- Provide common language and definitions regarding universal design as applied to career assessment practices that might also extend to education, training, and/or employment endeavors.
- Promote the necessity of universally designed assessment practices that value inclusion and diversity.
- Encourage the creation of quality assurance in practice and outcome that embraces the principles of universal design for instruction, learning, and performance.
- Promote education and advocacy for vocational evaluation and career assessment as practices that use opportunities for multiple opportunities to express, explore, and demonstrate career preferences, needs, strengths, capabilities, and goals.
- Allow participants opportunities to demonstrate optimal learning, discovery, and performance preferences and needs during assessment processes.
- Offer opportunities to try out various methods and techniques of representation, expression, and engagement to determine which are most effective.
- Equip individuals with knowledge about themselves—how they learn, what

works to support learning, and how to engage in life-long learning.

- Reduce barriers to achieving desired education, training, and employment.
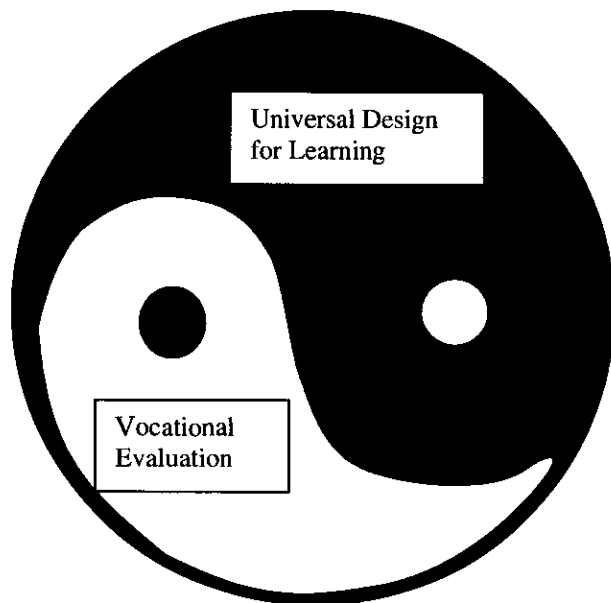
FIGURE: 1. Interpretation of UDL with Vocational Evaluation: A perfect match.

Guiding Principles for Including UDL in Career Assessment and Vocational Evaluation

- To provide equity and fairness, career assessment and vocational evaluation processes that integrate universal design for learning and assessment are aligned with the following principles. Vocational evaluation and career assessment should be

- designed to be useful and accessible for all. Programs use accessible web-based assessments, digital media, and other mechanisms to assess, including dexterity tests, work samples, and community-based methods.

- fashioned to accommodate a wide range of abilities and offer a choice of methods and techniques. Practitioners use a variety of instructional methods and assessment approaches delivered within a variety of settings.

- created to be straightforward and predictable. Practitioners utilize actual arti-

facts and samples that illustrate expectations. Consumers are encouraged to follow their own style of learning and performing while satisfying criteria for success.

- communicated effectively regardless of the individual's sensory abilities. Multiple representations are provided that include digital materials, models, and hands-on demonstrations.

- designed to anticipate variation in student learning—and if repeated enough—performance. Approaches include structured directions, work sampling, community-based assessment in finite steps, adjustable spans of time, and use a multiple formats (e.g., text to speech, captioning) and a variety of methods to achieve results.

- designed to minimize physical effort for maximum learning. Technologies such as word processors, hand-held computers, audio and video players, or IPODS are readily available for use.

- designed for appropriate reach and approach. UDL should reduce the need for modifications, accommodations and assistive technologies (AT), although they are considered throughout the process and can be applied if interaction between the person and environments require that.

- customized to promote interaction and a participation in a community of learners with the participant being the primary learner. Practitioners continuously ask questions and provide feedback—ask what works and what does not, co-plan individualized evaluation plans, daily activities and co-develop recommendations.

- designed to be welcoming and inclusive. Practitioners begin by explaining what will happen, communicate in a medium comfortable to the individual, and provide safe environments.

- designed to provide results that are communicated in multiple ways that can be accessed and understood by the indi-

vidual and others who need to be informed.

- designed to include recommendations in results about future universally-designed learning, assessment, and employment that will promote success in educational, career, vocational, and employment endeavors.

Career assessment and vocational evaluation must be tailored to accommodate and meet anyone's needs. To provide anything less than universally-designed assessment and evaluation processes undermines equity, fairness, and success for individuals who seek to realize dreams and achieve educational, vocational, and employment success.

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BIOGRAPHICAL SKETCHES

PAMELA J. LECONTE, Ed.D. CVE is an assistant research professor at The George Washington University and directs the Collaborative Vocational Evaluation Training program, which is an RSA funded Master's and Education Specialist degree program under Transition Special Education. She currently serves as the Education Coordinator for VECAP.

FRANCES G. SMITH, CVE, is technology coordinator for the Virginia Department of Education's Training and Technical Assistance Center at Virginia Commonwealth University. She also serves as the director of the INFUSIO Technology Lab within VCU's School of Education. She has served as past president and currently serves on VECAP's Strategic Planning Task Force. One of her primary areas of expertise is in the use of universal design for learning.

CHRISTINE JOHNSON, CRC, is the staff specialist for Community Rehabilitation Programs for the Maryland State Department of Education, Division of Rehabilitation Services (DORS). As chair of the DORS statewide CAS monitoring committee, Christine has been responsible for the implementation, training, and quality assurance of the Maryland Career Assessment Services (CAS) service delivery model of vocational assessment. She provides training, technical assistance, and stimulates change within vocational rehabilitation programs, recently was nominated and served on the Institute of Rehabilitation Issues as a Primary Study Group Member regarding Evidence-based Practices. She serves as a Co-Coordinator for VECAP Member Services.

Johnson obtained her master's degree in rehabilitation counseling from The George Washington University. Having worked at several local community rehabilitation programs in various capacities, including the state VR program, Christine has over 20 years experience in the field of vocational rehabilitation. Her areas of interest include career counseling, vocational assessment, universal design for learning, job development, CRP staff competencies, and disability law and policy.

VECAP LITERARY CONTEST WINNER
REVIEW OF CAREER DEVELOPMENT PROGRAMS IMPLEMENTED IN MIDDLE SCHOOL

DIANA K. WADE
The George Washington University

ABSTRACT

This review aims to describe career development programs used in United States middle schools identified by a review of literature. The review examines the interventions used with each target group, type of data collected, and reported findings. Career development phases as defined by Sitlington, Neubert, Begun, Lombard, and Leconte (1996) are used as guidelines to emphasize that exposure to each of the career phases is the key to preparation for successful transition. No programs were found that pertained to specific disability categories in middle school. There are many differences and similarities in the five programs that met the criteria of the literature review. Findings suggest that students were more actively and positively engaged in their career development choices after participating in the various programs. A key to the more developed programs was assessment, which was integrated into the core of the programs and laid the groundwork for the intervention. The outcomes of the studies were all positive and helped middle school students prepare for an effective transition into high school.

INTRODUCTION

Middle school students are not being adequately prepared for continuing career development in their secondary years, which impedes their successful transition into post-secondary life. Sitlington, Neubert, Begun, Lombard, and Leconte (1996) highlight the practice of schools requiring students to participate in career or vocational assessment relevant to career decision making too early, before they have had the opportunity to go through career awareness and career exploration programs, which can create decision-making difficulties during transition. Many educators expect students to make career decisions without adequate exposure to each career development stage. Such developmental exposure is the key to preparation for successful transition.

There are four career development phases: career awareness, career exploration, career preparation, and career assimilation (Brolin, 1993). *Career awareness* begins prior to elementary school when a child begins to discover the existence of work, jobs and various careers, college, and their community, and continues throughout the other career development phases

(Sitlington, et al., 1996). *Career exploration* typically takes place between grades 6-9, and is the focus of this article. The goal of this stage is to give students the opportunity to experience life roles by interacting physically, emotionally, and behaviorally with various aspects of work in different occupational areas (Sitlington, et al.). Examples of career exploration activities include participating in job try-outs, accompanying parents to work, and working in part-time volunteer jobs. *Career preparation* typically occurs between grades 10-12. In this stage, students acquire basic transferable skills, develop specific vocational skills, and continue to develop employability skills such as working cooperatively, problem-solving, and adapting to change (Sitlington, et al.). Many students in this phase earn wages, manage finances, refine career goals, and take courses that help them attain their goals. *Career assimilation* typically begins after a student has left high school and enters employment; however, with many career and technical education programs currently available to high school students, this stage may start while a student is still in school. For example, students attending public high schools may attend an academy during their 11th and 12th grade

years which will award them community college credits or specific experience working in an advanced technical or specialized field, and successful integration of career and academic preparation.

Since one of the greatest challenges facing adults who serve youth is to help youth match their interests, abilities, values, occupations, and career opportunities (Timmons, Podmostko, Bremer, Larvin, & Willis, 2004), assessment should be an integral part in every career development phase. Assessment is the process of collecting data for the purpose of making decisions (Timmons, et al.). As identified by Neubert (1985) and Leconte (1986), two major uses of career assessment data are determination of career development and career exploration. During career development the student finds out where he/she stands in terms of career awareness, orientation, exploration, preparation, placement, and growth/maintenance (Neubert; Leconte). Career exploration is used to try out different work-related tasks or activities, and to determine how interests match abilities for work-based experiences, community jobs, postsecondary, or other adult activities (Neubert; Leconte). Since career exploration is so vital, educators must make it a priority within their classrooms and middle school environment.

RESEARCH QUESTIONS

This review was guided by several questions:

(a) What programs exist that provide career development opportunities in middle school?

(b) Did programs target "all" middle school students or only specific disabilities or categories of students, such as "at-risk"?,

(c) What interventions are currently being used to prepare middle school students for continued career development throughout secondary years? And,

(d) What were the student outcomes of the studies?

METHOD

Articles were selected using the online search tools Aladin, Academic Search Premier, and EBSCO Host Research Databases. The search included a set limit of publications dated 1998 through 2006 to allow for a review of the most recent programs. Specific search terms used include but were not limited to: adolescent, career assessment, career development, career preparation, career program(s), career strategies, disabilities, disability, early adolescent, early transition planning, junior high school, middle school, vocational assessment, and vocational evaluation. Using broad search terms yielded broad results and some articles were excluded based on the need to narrow the topic of the literature review and the need to choose quantitative, academic research. Five programs were selected for review.

RESULTS

According to the National Occupational Information Coordinating Committee (1992), career development is the process through which people come to understand themselves as they relate to the world or work and their role in it. It is best that effective career development begins once a student enters elementary school. In order for career exploration to have an impact, students need an awareness or understanding of jobs that exist in their area of career interest. Building upon that, in order for career preparation and career assimilation to work, students must have adequate exposure to jobs by trying them and learning what they might be interested in as a career. Career exploration is the stage in which students have an opportunity for hands-on learning and direct experience with jobs. Providing awareness of different careers does not fall into the category of exploration, which should start to take place throughout grades 6-8 in middle school, but rather should be presented at an earlier age in elementary school. Findings of the reviewed literature are shown in TABLE 1, including target groups, interventions used, and data collected.

TABLE 1: Key Elements of Literature Review

Author(s)	Target Group	Interventions	Student Outcomes
Osborn & Reardon, 2006	98 high-risk middle school students	SDS:CE and 6-weeks group counseling with CIP Theory	Students indicated learning about their interests, occupations, postsecondary opportunities, decision-making, & how to improve their positive self-talk
Snyder & Jackson, 2006	All K-12 students; focus on grades 6-8	Family and Consumer Sciences class, Career Camp, Electronic Individual Career Plan	Students articulating appropriate career goals increasing; authors believe school county is achieving goal of motivating students to make wise academic choices, and be positioned to prepare in a global economy
Peterson, Long, & Billups, 1999	72 8th graders	3 levels of intervention in preparing students to make high school educational choices	Life Management course chosen more often in higher intervention levels
Wright, 2001	All 7th, 8th, 9th graders	Year-long program called Technology-Life-Careers	Cultivated & defined interests and students tried new roles in effort to combat sex stereotypes
Stott & Jackson, 2005	12-16 middle school students per semester	ACCEPT Class; individual planning meetings, parental requests, & school needs assessment	Themes emerged regarding personal awareness, social skills development, learning skills, career interests, & character education

Using the Self-Directed Search: Career Explorer with High-Risk Middle School Students

Osborn and Reardon (2006) describe a program located in a public school in southeast U.S. with 98 high-risk middle school students. The students completed the Self-Directed Search: Career Explorer version. They then participated in six weeks group counseling using Cognitive Information Processing Career Theory, known as CIP Theory. CIP Theory includes knowledge about self, knowledge about options, decision-making, and metacognitions. At the end of the six weeks, anecdotal comments from students indicated they learned about their interests, occupations, postsecondary opportunities, decision making, and how to improve their positive self-talk. *Self-talk* is defined as anything said to oneself for encouragement or motivation or one's constant internal conversation (Webster's New Millennium Dictionary of English, 2003). Career concerns for middle school students have included the need for them to see the connection between school and work, to develop interpersonal skills, and to increase occupational knowledge (Hill & Rojewski, 1999; Shepherd Johnson, 2000). Use of the SDS: CE and CIP Theory within group counseling sessions allowed an easy-to-understand and direct framework for the content to reach the high-risk middle school students. (Osborn & Reardon).

Systematic, Systemic, and Motivating: The K-12 Career Development Process

Snyder and Jackson (2006) reported on an innovative program in Ohio that is systematic, systemic, and motivating for students. In this ongoing program conducted in conjunction with a Technical Center's Career Initiatives division and supported by the State Department of Education, all students in grades K-12 learned about the key concepts of career development in different ways depending on grade level. While the article addresses students in all grades, the focus of this review is on activities that occur with middle school students in grades 6-8. All

middle school activities aligned with the career development process help students understand the concepts of self-awareness, community involvement, decision-making and goal setting, reduction of bias, employability skills, economics, career information, self-assessment, exploration, future trends, career-technical orientation, and academic planning (Snyder & Jackson). In the family and consumer sciences course, students received instruction to help develop a life-management plan, develop strategies for lifelong career planning, build and maintain constructive interpersonal relationships, and coordinate personal and career responsibilities for the well-being of self and others (Snyder & Jackson).

At the end of their 8th grade year, students were invited to a three-day Career Camp where they explored their interests and engaged in hands-on activities through career-technical labs and visits to businesses and colleges. Upon arrival, students took an interest assessment that helped to determine which program they would visit. Program outcome data showed that 32% of students who attended Career Camp returned as students to the Technical Center upon high school graduation to attend classes (Snyder & Jackson, 2006). Eighth graders also began the development of an Electronic Individual Career Plan (ICP). Students gathered information from career research, career-development activities and projects, and results from interest, skills, and values assessments they took. This process extended until 11th and 12th grades where the students then transformed their ICP into a Career Passport, which is an exit document required of all county graduates. While there is no specific quantitative measurement of a student's progress, performance measures show that the number of students with the ability to articulate an appropriate career goal increased. The Technical Center's Career Initiatives division and the schools believe that they have successfully achieved their goal of "motivating students in today's world to achieve high levels, make wise academic choices, and be positioned to prepare to compete in a global economy (Snyder and Jackson, p. 26)."

Performance measures were collected on a randomly selected sample of five percent of 8th, 10th, and 12th graders. They were asked four questions:

(a) At this time, what is your career goal?

(b) What courses or classes are you taking or will you take in high school to reach your goal?

(c) What do you plan to do after high school to reach your goal? And,

(d) Are there any activities in or out of school that support your career goal?

Responses were evaluated for appropriateness based on how they supported the student's individual career goal. The career goal or responses were never judged to be appropriate or inappropriate separately but rather on how they supported each other. The established standard for the ongoing program in the county is that 75% or more of the students will articulate appropriate responses to the questions based upon individual goals (Snyder & Jackson, 2006).

The Effect of Three Career Interventions of Educational Choices of Eighth Grade Students

Peterson, Long, and Billups (1999) described the effect of three career interventions on 8th grade students. The study collected data on the entire 8th grade of 72 students in a development research school in a large southeastern public university. The researchers defined three levels of intervention representing involvement in preparing 8th graders to make high school education choices. Level one was defined as minimal or token effort which consisted of making a general announcement that high school registration would be held in one week and that they should be prepared by completing a trial high school program of study form in advance. Level two involved a higher degree of involvement which consisted of the same general announcement in level one in addition to printed support materials containing state and school graduation requirements, a description of elective courses offered at the high school, and one example each of a college preparatory curriculum and a vocational curriculum (Peterson, et. al.).

Level three represented model career intervention which consisted of a computer-assisted classroom intervention utilizing Career Grid, a program developed by the Florida Bureau of Career Development and Instructional Improvement in 1993, designed to foster career problem-solving and decision-making skills. The inter-

vention was intended to enhance self-knowledge, occupational knowledge, decision-making skills, and metacognitions that guide higher-order thought processes (Peterson, et. al., 1999). Each student was also given the opportunity to accurately complete a full, four-year plan for a high school program of study, with the assistance of the school counselor, in alignment with his/her interests and goals. Evaluation was based on the manner in which students completed a four-year plan of studies. The four criteria used were completeness, specificity of classes in relation to career interests, appropriateness for career aspirations, and sequence. Investigators found that a life management course was chosen at much higher rates for students who received the level two or level three-intervention. The overarching conclusion was that there was a direct correspondence between the level of career intervention and the degree to which students were able to demonstrate mastery in completing a high school plan of study (Peterson, et. al.).

A Time for Exploration

Wright (2001) described a program at a Junior High School in Utah that incorporated a program called TLC, or Technology-Life-Career into the lives of its 7th, 8th, and 9th graders. This program helped students to identify educational and career goals and to set up a plan to achieve them. The TLC staff worked with students both in and out of the classroom. Findings indicated that the program successfully cultivated and defined interests and encouraged students to try on new roles and combat sex stereotypes. It was unclear how the program was critiqued; however, this junior high school won the 1997 "Planning for Life" award by National Consortium of State Career Guidance Supervisors sponsored by the U.S. Army (Wright).

Using Service Learning to Achieve Middle School Comprehensive Guidance Program Goals

Stott and Jackson (2005) analyzed the use of service learning to achieve comprehensive guidance program goals for middle school. Each semester, 12 to 16 middle school students received classroom instruction on personal, social, and career content (Stott & Jackson). Students were selected based on known at-risk behavior or their interest in a helping profession. The curriculum was centered on the themes of accepting yourself, accepting others, and accepting responsibility. The ACCEPT (The Alliance for Children: Collaborative Exceptional Peer Tutors) program took place at a middle school which was within walking distance of a nearby elementary school. Such proximity allowed the students to teach a similar curriculum to elementary school students once they had learned the themes. Data was collected through the use of semi-structured interviews with students, parents, and teachers from the ACCEPT class years 1998-2004. Five major themes emerged throughout the interviews: personal awareness, social skills development, learning skills, career interests, and character education.

DISCUSSION

There were many differences and similarities in the five programs reviewed. All programs focused on assisting middle school students in career exploration by providing opportunities to learn about careers. Some programs, such as those reported by Snyder and Jackson (2006), and Wright (2001), allowed students to interact physically, emotionally, and behaviorally with aspects of work by trying various jobs. Others, such as the Osborn and Reardon (2006), Peterson, Long, and Billups (1999), and Stott and Jackson (2005) articles, reported on programs that assisted students with career preparation by helping students complete a four-year plan of study for high school, and holding small group sessions to discuss career opportunities and learn about their interests.

The data collected also differs for all programs, based on the information available in the references. In some informal write-ups, the authors mentioned the use of anecdotal comments and semi-structured interviews to complete data collected (Osborn & Reardon, 2006); (Stott & Jackson, 2005). In one study no defining data collection is discussed. Instead, the author reports that the school in which the program took place won a "Planning for Life" award in 1997 given by the National Consortium of State Career Guidance Supervisors and the U.S. Army (Wright, 2001). Two studies reported qualitative

findings and use of material data collection, which included middle school students completing four-year plans of study for high school, and obtaining answers to four pertinent career planning questions by a randomly selected five percent sample of the eighth grade class (Peterson, Long, & Billups, 1999), (Snyder & Jackson, 2006).

Reported findings included positive results of the various programs. Students indicated learning about their interests, occupations, post-secondary opportunities, decision-making, and how to improve their positive self-talk in the Osborn and Reardon (2006) article. In the Snyder and Jackson (2006) article students were articulating appropriate career goals in increasing numbers. According to Peterson, Long, and Billups (1999), the Life Management course was chosen in completing a four-year plan of study for high school by students who received higher levels of intervention. One programs resulted in students defining their interests and trying new roles (Wright, 2001). As part of the findings of the program reported by Stott and Jackson (2005), themes of personal awareness, social skills development, learning skills, career interests, and character education emerged after final semi-structured interviews were conducted with past students, parents, and teachers of the ACCEPT class.

Several challenges arose when comparing programs that are so diverse. There is a lack of rigorous research materials and a need to replicate research and conduct new quantitative and qualitative research. There is also a need to target students with disabilities to understand the effect of career development on students with diverse needs. Researchers are on the frontier in measuring outcomes of programs currently in place in middle schools that seek to improve the transition of students into high school by providing appropriate career development programs and activities.

SUMMARY AND CONCLUSIONS

Students must be given adequate exposure to careers and the chance to explore them before being required to make decisions that will effect their career development, and choice of courses for high school. As evident in the programs re-

viewed by Snyder and Jackson (2006) and Osborn and Reardon (2006), assessment was integrated into the core of the program and laid the groundwork for the curriculum. In consideration of the guiding questions for this review, much can be done to prepare middle school students for continued career development throughout high school, such as small group interventions, whole-class lessons, and county-wide integration. The most critical element of career exploration throughout the programs reviewed was giving the student's chances to physically explore different careers. The second most useful element was guiding the students to complete career plans or high school plans of study after the experiences of the programs. This allowed the students to incorporate their interests, skills, and experiences into a concrete but adjustable plan for their future. There were also programs that were used with "all" middle school students, and also smaller programs targeted to specific populations, mostly at-risk students. No programs that pertained to specific disability categories in middle school were found. The outcomes of the studies were all positive and helped middle school students prepare for an effective transition into high school.

Based upon the review of these five programs it is recommended that a further analysis occur in order to determine the statistical effectiveness of each program reviewed. It is also recommended that the county-wide program in Ohio be marketed to increase knowledge and usability in other regions of the U.S., especially pertaining to how students with disabilities fit into the program.

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BIOGRAPHICAL SKETCH

DIANA K. WADE received a bachelor's degree in exceptional student education from the University of Central Florida in 2001, and a master's degree in education and human development from The George Washington University in 2007, with an emphasis in transition special education and vocational evaluation. She will start her doctoral work at the University of Kansas, Lawrence, in the fall of 2007.

Her interests are in the area of career development at the middle school level, transition, intellectual disabilities, vocational evaluation and assessment, health and obesity crisis of adolescents in the United States.