

Assistive Technology Knowledge and
Usage Among Vocational
Evaluators

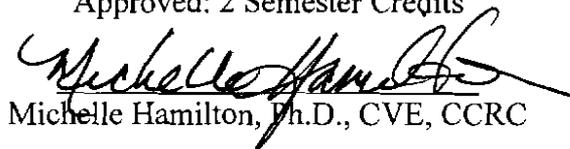
by

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A Research Paper
Submitted in Partial Fulfillment of the
Requirements for the
Master of Science Degree
in

Vocational Rehabilitation

Approved: 2 Semester Credits



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December, 2007

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Title: *Assistive Technology Knowledge and Usage Among Vocational Evaluators*

Graduate Degree/ Major: MS Vocational Rehabilitation

Research Adviser: Michelle Hamilton, Ph.D., CVE, CCRC

Month/Year: December, 2007

Number of Pages: 51

Style Manual Used: American Psychological Association, 5th edition

ABSTRACT

Technology is a major part of the world today. For American's without disabilities, technology makes tasks easier. For American's with disabilities, technology makes things possible. In light of available assistive technology (AT), making occupational decisions without considering appropriate AT is not an effective assessment method. Persons with severe disabilities often do not meet current job requirements. Without consideration of AT during the evaluation process, vocational evaluators are allowing the individual's current functional limitations to dictate vocational options. In fact, failure to include AT when assessing the vocational potential of individuals with disabilities could be considered invalid and discriminatory (Langton, 1991). However, AT is being underutilized in the vocational evaluation (VE) process (Langton, Smith, Lown & Chadham, 1998). The purpose of this project was to generate current information regarding vocational evaluators' knowledge and usage of AT. The

McCarthy Vocational Evaluation and Assistive Technology Survey (MVEAT) was created and administered to VE professionals for this purpose.

Several significant correlations were found relating to vocational evaluators' knowledge and usage of AT. Vocational evaluators' knowledge and use of AT were positively correlated. Knowledge and use were also positively correlated with the total number of hours of AT training. Employers' support of AT education was positively correlated with knowledge and use of assistive technology. This study found that the overwhelming majority of VE practitioners used online resources to find information related to AT. Implications of these findings to the field of VE and recommendations are discussed.

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Acknowledgments

I would like to thank my husband, Randy, for walking next to me as I progressed through graduate school and my thesis project. He was genuinely present every step of the way with a smile on his face. I would also like to thank my thesis advisor, program director, instructor and friend Michelle Hamilton. She gave me the opportunity to learn from my struggles. Without giving me the answers, she taught me how to work my way out of the wet blanket they call a thesis. Thank you!

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Chapter I: Introduction

Traditional vocational assessment can be traced back to Nineteenth century United States. At that time, citizens were trading farming occupations for more diverse occupations to support the fast moving industrial revolution. The need to assess potential for vocational placement provided a loose framework for vocational assessment (Power, 2006).

After WWI, performance-based assessment measures were introduced to help meet the needs of non-English speaking persons and other special populations (Pruitt, 1986). Contrary to traditional assessment measures, performance-based assessment looks at an individual performing work in the context in which the work is performed. For example, when accessing an individual's potential to work as an automobile mechanic, an individual may be observed calibrating spark plugs. This approach was considered to be less discriminatory for special populations including persons with disabilities.

When compared to traditional normative groups on mental tests or performance based measures, persons with disabilities often scored below average. This score was often a reflection of their disability and not their true abilities. Developed from a combination of many professions, vocational evaluation (VE) utilized a set of procedures that helped to eliminate the discriminatory nature associated with traditional assessment (Vocational Evaluation & Work Adjustment Association (VEWAA), 1975).

VE is a comprehensive, systematic process in which the client and evaluator work together to assess the client's vocational interests, abilities, strengths, weaknesses, aptitudes, and functional limitations (Pruitt, 1986). Each of these variables is looked at in relation to the client's preferred rehabilitation goal or employment outcome. Medical, psychological, social, vocational,

education, cultural, and economic information are analyzed together to create a holistic view of the client.

Vocational evaluation is an integral part of larger service delivery systems such as federal-state vocational rehabilitation services. Clients that participate in a vocational evaluation are traditionally working with a vocational rehabilitation counselor. Vocational rehabilitation (VR) is a human service profession that serves persons with disabilities. The primary function of the VR system is to aid the person with a disability to choose, secure and maintain employment consistent with their interest and abilities. The development of an individualized plan for employment (IPE) directs necessary services a client will require to attain the vocational goal defined by the IPE. The information gathered through a vocational evaluation should guide the rehabilitation counselor and client through the VR process by providing direction for service provision. The results and recommendations from the VE often provide the basis for planning needed services, resources and support.

Client assessment is critical for providing the information necessary for service provision. VEWAA (1975) recognizes three levels of assessment with increasing intensity. Level one, the most basic level of assessment, usually consists of interviews, collecting background information and limited psychometrics. If additional information is necessary, a level two assessment can be completed. This consists of detailed case study, vocational counseling, psychometrics, transferable skills analysis, job analysis and accommodations consideration. After a level two assessment is exhausted and questions still remain a level three assessment may be warranted. A level three assessment, commonly referred to as a vocational evaluation, is the most comprehensive level and is frequently utilized for clients with severe disabilities. For individuals

with severe disabilities there is often a gap in the individuals' abilities and the demands of the job. Assistive technology can help bridge this gap.

The term assistive technology (AT) is commonly used to refer to technology that is used during the rehabilitation process (30th Institute on Rehabilitation Issues (30th IRI), 2003).

Considered any piece of equipment, device or strategy used to increase functional capabilities of individuals with disabilities, AT can be acquired commercially off the shelf, modified, or customized. AT products can range from low-tech, inexpensive items to high-tech, costly options. Despite improved techniques offered by VE, failure to consider available technology in the vocational decision making process may make evaluation results invalid (Langton, 1991).

Statement of the Problem

Without AT persons with severe disabilities seldom meet current job requirements. In addition, skills and abilities for future jobs or trainings are difficult to determine. Without consideration of AT during the evaluation process, vocational evaluators are allowing a client's current functional limitations to dictate vocational options. Failure to include AT in the assessment process may yield limited vocational options and choices. Using AT during the VE process may produce more valid, less discriminatory vocational profiles for individuals with severe disabilities (Langton, 1991). Vocational options are also increased. Unfortunately, AT is being underutilized during the assessment process (Langton, Smith, Lown & Chadham, 1998).

Purpose of the Study

The purpose of this study was to generate an updated baseline of information regarding vocational evaluators' knowledge and usage of AT. Significant findings of this study will enhance vocational assessment of persons with disabilities by identifying areas in need of improvement. Furthermore, this study has helped identify future research directions related to the integration of AT into the VE process.

Assumptions and Limitations of the Study

There are three primary assumptions of this study: 1) this was a representative sample, 2) the instrument was valid and 3) the participants responded accurately. Caution should be exercised when generalizing these results to other settings. Although collecting data onsite at a professional conference yielded abundant responses, the sample may not be representative of all vocational evaluators. Also, the instrument was intended to collect general information on AT in VE and did not focus on any specific area within the topic.

Definition of Terms

Assistive technology: Considered any item, piece of equipment or product system whether required commercially off the shelf, modified, or customized that is used to increase or improve functional capabilities of individuals with disabilities (Cook & Hussey, 1995).

Functional limitation: The performance or hindrance in a negative way of tasks or activities due to a physical, mental, or emotional disability (Wright, 1980).

Vocational assessment: An umbrella term used to describe various intensities of evaluating and individuals' educational and/or vocational potential. Assessment levels range from the most basic (collecting background information and interviewing) to the comprehensive vocational evaluation (Dowd, 1993).

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

Vocational rehabilitation: A program of services designed to enable persons with disabilities to gain and maintain employment (30th IRI, 2003).

Chapter II: Literature Review

A review of current literature related to VE and AT was conducted to provide framework for the current study. Traditional assessment methods are discussed, addressing discriminatory practices against persons with disabilities. A historical perspective was taken to describe the development of VE as a profession. An overview of AT will follow. Finally, a discussion will be presented on the current use of AT in the field of VE. Focus will be placed on barriers to incorporation and associated literature.

Overview of Traditional Assessment

Traditional vocational assessment can be traced back to Nineteenth century United States. At that time, citizens were trading farming occupations for more diverse occupations to support the fast moving industrial revolution. The need to assess potential for vocational placement provided a loose framework for the roots of vocational assessment (Power, 2006).

The field of psychology played a major role in advancing the early form of vocational assessment (Pruitt, 1986). Psychologists determined people vary in skill and ability and individual differences could be measured using “mental tests.” Often referred to as the psychological testing movement, many instruments were designed during the 1900’s by industrial psychologists to measure human constructs such as aptitude, intelligence, and personality. It was learned that this information could be used not only to assess an individual’s current behavior, but predict future functioning. The usefulness of determining an individual’s potential for employment quickly became evident.

As the field of industrial psychology matured, more tools were created to establish an individual’s potential for employment. Situational assessment, job tryouts, behavioral rating scales and identification of specific job demands established objective methods for meeting the

demands of an industry (Naldolsky, 1971). Little concern was given to addressing desires, values and needs of the worker. The emphasis was placed on a worker's ability to meet the demands of the job, with little concern for anything else. Individuals that did not meet the objective demands of specific jobs were screened out from participating in that type of work. Persons with limited education or English abilities often did not meet the demands necessary. A shortage of qualified workers and an influx of European immigrants after WWI created a need for alternate assessment techniques.

After WWI, performance-based assessment measures were introduced to help meet the needs of non-English speaking persons and other special populations (Pruitt, 1986). Contrary to traditional assessment measures, performance-based assessment takes place in the context the work is performed. For example, when assessing an individual's potential to work as an automobile mechanic, an individual may be observed calibrating spark plugs. This approach was considered to be less discriminatory for special populations including persons with disabilities. This assessment approach considers both what a person knows, but also what they can do. Several companies created commercially available work samples that measured an individual's performance (Power, 2006). Performance-based measures paved the way to the vocational guidance movement.

The vocational guidance movement focused on the needs of the individual worker instead of solely considering the needs of industry. Before the early 1900s, there was not much assistance for persons looking for different occupations (Power, 2006). Most vocational information came from family, friends, church and community members. Frank Parsons, considered the founding father of vocational guidance, is credited with providing publications to assist persons in learning about careers. By 1907 Parsons published *Choosing a Vocation*,

emphasizing self awareness, knowledge of job demands, and using this information for making informed vocational decisions. The Smith-Hughes Act of 1917 continued Parson's effort by providing federal and state monies for vocational education programs for persons without disabilities.

Despite the contribution of the vocational guidance movement, traditional assessment methods still failed to address the needs of persons with disabilities and other underserved populations. When compared to traditional normative groups on mental tests or performance based measures, these populations often scored below average. This score was often a reflection of their disability and not their abilities. An example would be an individual with limited dominant manual dexterity taking a paper-and-pencil test requiring them to fill in small circles to signify their answer. They may have significant knowledge of the material being tested; however, physical difficulty filling in the circles may impact speed or accuracy which may not allow the individual to demonstrate their knowledge. As a result, their score is likely to be below average. Developed from a combination of many professions, VE utilizes a set of procedures that help eliminate the discriminatory procedures associated with traditional assessment (VEWAA, 1975).

Historical Development of Vocational Evaluation

As a result of WWI, many United States military personal were returning with acquired physical disabilities. Service members often required assistance with acclimation back into the civilian world of work with consideration for their new functional limitations. As a result, the 1918 Soldier's Rehabilitation Act was created, becoming the first federally funded vocational rehabilitation program (Rubin & Roessler, 2001). Vocational rehabilitation is a human service field designed to assist persons with disabilities. The major functions of the profession are

integration of persons with disabilities into the world of work and successful job placement. In 1920 the *Civilian Vocational Rehabilitation Act* provided VR services to civilians. Also known as the *Smith-Fess Act* this piece of legislation provided matching state and federal funding to support services such as vocational guidance, training, occupational adjustment services and job placement (Rubin & Roessler, 2001). Fifteen years later in 1935, the *Social Security Act* made vocational rehabilitation a permanent federal program. Instead of having to reauthorize the program periodically, Congress would have to vote if the program were to end. WWII also presented new opportunities for persons with disabilities.

During WWII, a shortage of workers provided new opportunities for persons outside of the traditional workforce. As a result, women and persons with disabilities were sought after to fill the worker gaps left by WWII military personnel. In 1943 the *Barden-LaFollette Act* allowed federal and state vocational rehabilitation programs to begin serving persons with mental illness, cognitive disabilities, and more severe physical disabilities (Rubin & Rossler, 2001). In order to serve persons with severe disabilities a demand was created to identify barriers, needs and characteristics in employment settings (Fry & Harrand, 1992). For individuals with severe disabilities, adequate information may not be obtainable through traditional interviewing and assessments completed by rehabilitation counselors. Instead, a more comprehensive evaluation was often seen as necessary to gather essential information for vocational rehabilitation service provision.

Three levels of vocational assessment are recognized; each with increasing intensity. Level one assessment is considered activities usually consisting of interviews, collecting background information and limited psychometrics (30th IRI, 2003). This is typically completed by the rehabilitation counselor. If more information is necessary to carry out service provision, a

level two assessment can be completed. This level of assessment, often completed by the rehabilitation counselor, consists of detailed case study, vocational counseling, psychometrics, transferable skills analysis, job analysis and accommodations consideration. After level two is exhausted and if questions still remain a level three assessment may be warranted. This is known as a vocational evaluation.

VE is a comprehensive, systematic process in which the client and evaluator work together to assess the client's vocational interests, abilities, strengths, weaknesses, aptitudes, and functional limitations (Pruitt, 1986). Each of these variables is looked at in relation to the client's preferred rehabilitation goal or employment outcome. Medical, psychological, social, vocational, education, cultural, and economic information are woven together to create a holistic view of the client. Clients that participate in a vocational evaluation are traditionally working with a vocational rehabilitation counselor. The information gathered through a vocational evaluation can help guide the rehabilitation counselor and client through the vocational rehabilitation process by providing direction for service provision.

VE encompasses a variety of tools and techniques that make it the most comprehensive level of assessment (Power, 2006). Like levels one and two, VE uses interviewing, case history and psychometrics. Unique to level three is the use of work as the focal point of the evaluation. Performance-based measures such as work samples, situational assessments, job tryouts and work experience focus the evaluation on employability of clients. Behavioral observation of clients engaged in these activities shed light on work performance and work behavior factors. Additionally, career exploration allows for assistance in the vocational decision making process. Over the course of the days, weeks or months of the evaluation, prescriptive recommendations are created by both the client and evaluator. These recommendations are provided in "rank"

order of importance, based on the immediate needs of the client. Recommendations are included as part of an evaluation report.

The VE report is used for further rehabilitation planning in order to prepare for, gain and maintain employment. Besides identification of the client's vocational interests, aptitudes, acquired skills, functional limitations, and barriers to employment, the report also includes recommendations. The purpose of the individualized recommendations is to enhance rehabilitation potential and may include products, services, or other actions needed by the client. Each recommendation is prescriptive or individualized for the client. Disability, the person and the environment are considered to ensure the recommendation is a "good fit" for the person. For example, when consideration is given to recommending post-secondary education for a client all three of these variables is important. Does the person have emotional and cognitive ability to be successful in post-secondary training? How will their disability impact their ability to learn and/or attend class? Does their financial situation allow them to attend school and not work? These are just some of the factors that are considered by evaluators when making a recommendation. Examples of recommendations may include AT evaluations or devices to improve performance, further physical restoration, reasonable job accommodations, academic instruction, work adjustment training, vocational training, independent living skills instruction, mental health services, and supported employment options. Such recommendations are used by the rehabilitation counselor and client to create an Individual Plan for Employment (IPE), or in the case of a high school student, and Individual Education Program (IEP). The IPE is used to direct services required to attain the vocational goal.

VE is a well established profession that evolved from a need to provide individuals with more severe disabilities the services they require to meet their vocational goals. The

performance-based assessment approach utilized by VE helped to reduce the discriminatory practices of traditional assessment. Before the development of VE, persons with disabilities were directly compared to persons without disabilities with little consideration for impact of disability. Many evaluation tools are used to create a set of recommendations utilized in rehabilitation service provision. Despite improved techniques offered by VE, failure to consider available technology in the vocational decision making process may make evaluation results invalid (Langton, 1991).

Introduction of Assistive Technology

Technology is a major part of the world today. For American's without disabilities, technology makes tasks easier. For American's with disabilities, technology makes things possible. In light of available technology, disability is less of a function of an individual, and more of an interaction with an environment (30th IRI, 2003). Technology continues to expand the employment and recreational opportunities of persons with disabilities. An individual with a lower limb amputation can run marathons with a state-of-the-art prosthetic device. An individual with quadriplegia can operate a computer with the blink of their eye. An individual who is totally blind can use a hand-held global positioning system to navigate in a major city via voice instructions. In an ever broadening and increasingly demanding labor market, persons with disabilities can use technology to reduce functional limitations and meet or exceed job requirements.

AT is considered any item, piece of equipment, device, or strategy whether acquired commercially off the shelf, modified, or customized that is used to increase or improve functional capabilities of individuals with disabilities (Galvin & Wobschall, 1996). In a rehabilitation setting, AT is applied to reduce or remove physical, behavioral, or cognitive .

barriers. Specifically, AT may provide access to vocational opportunities for persons with disabilities by reducing functional limitations. Legislation recognizes the potential role AT can play in the lives of persons with disabilities.

The Technology-Related Assistance for Individuals with Disabilities Act was created in 1998. The major purpose of the AT Act was to provide a means to financially support programs in states that addressed the technology needs of persons with disabilities (Assistive Technology Act, 1998). Specifically, states were required to provide public awareness programs, interagency coordination and outreach in relation to AT. States were also encouraged to provide short-term loan and demonstration of devices, options for securing devices and services and other technology related information.

Funded under the AT Act of 1998, the state of Wisconsin created the WisTech Program. This program provides information on selecting, funding, installing, and using AT. The program provides persons with disabilities AT device loans, demonstration, and alternate financing. The program also has a variety of partners such as Stout Vocational Rehabilitation Institute, a wheel chair recycling program, and statewide independent living centers. This is just one example of how the AT Act of 1998 has made progress towards meeting the technology needs of persons with disabilities.

The Rehabilitation Act Amendments of 1992 also address the importance of AT in the lives of persons with disabilities. According to this legislation, the IPE must include a determination of need for AT (Rubin & Roessler, 2001). Recognizing the role AT plays in improving the potential of individuals with disabilities, the Commission on Accreditation of Rehabilitation Facilities (CARF) requires the evaluation plan to identify AT to be used in the evaluation process (CARF, 2006). In addition, CARF accredited programs require vocational

evaluation services to have the capacity to assess the need for AT and accommodations. Legislation mandating that AT be considered in various aspects of rehabilitation service provision seems to acknowledge the potential benefits AT can have on employment and/or independent living outcomes.

Use of Assistive Technology in Vocational Evaluation

Disability is a dynamic interaction between the individual and their environment, mediated by tools. The results of this interaction dictate how the disability's limitations are defined. For example, two clients have acquired paraplegia with no voluntary movement below the waist level. One of the clients is an accountant and the other is a carpenter. It is likely the accountant will be able to return to their pre-injury vocation with few changes to their work setting. The carpenter, however, will likely no longer be able to perform the essential functions of their position without extensive job modifications. In this example, the impact of environment is evident. AT is often the interface between the person with a disability and the demands of their environment. Allowing persons with disabilities to meet the requirements of their environment, technology reduces disability related limitations. In this sense, technology has the potential to redefine the definition of disability (Enders, 2002). Using the example above, AT may allow the carpenter to meet the demands of their job. Examples may include using a hoist to lift tools and a modified vehicle to transport the individual to each work site. When AT is considered early in the VE process, it can reduce the probability that functional limitations from the disability will dictate vocational options. VE is an excellent venue to identify potential technology strategies.

Vocational evaluators are in an excellent position to recognize the use AT (30th IRI, 2003). An evaluation often occurs over an extended period of time: days, weeks or months. This allows the evaluator to explore the potential use of AT. The work related activities performed

during the evaluation yield an excellent opportunity for the evaluator and client to develop potential work accommodations that can be translated to a work environment. Whether a client is able to perform the essential functions of a job may depend on using AT to reduce disability related functional limitations. Failure to consider AT may result in underestimating an individual's vocational potential, particularly for individuals with severe disabilities.

Without AT persons with severe disabilities seldom meet current job requirements. In addition, skills and abilities for future jobs or trainings are difficult to determine. Without consideration of AT during the evaluation process, vocational evaluators are allowing the individuals current functional limitations to dictate vocational options. Failure to include AT in the assessment process may yield limited vocational options and choices. Without considering AT, the risk is that people may be screened out of jobs that they could be qualified for- the very reason VE was created. Using AT during the VE process may produce more valid, less discriminatory vocational profiles for individuals with severe disabilities (Langton, 1991). Unfortunately, AT is being underutilized during the assessment process (Langton et al., 1998). It is essential to investigate barriers to utilization of AT in the assessment.

Barriers to incorporation

In light of available AT and potential benefits, making occupational decisions without considering appropriate AT is invalid and discriminatory (Langton, 1991). Despite its importance, Langton et al. (1998) suggest that assistive technology is not used effectively in the VE process. Lack of knowledge of AT by VE practitioners may be a root cause for the problem.

A 1995 survey found that vocational assessment practitioners had limited to moderate knowledge of AT (Reed & Fried). According to a survey of state rehabilitation counselors, AT knowledge is positively related to AT utilization (Riemer-Reiss, 2003). If the same is true in a

VE setting, vocational evaluators are not likely to utilize AT if they do not have knowledge of related products and services. Taking the relationship between knowledge and use into consideration, rehabilitation professionals perceive a need for AT education (Riemer-Reiss, 2003; Reed & Fried, 1995)

Although many rehabilitation professionals perceive a need for AT education many professionals lack education and/or training in AT. A recent survey of state vocational rehabilitation counselors in Wisconsin (Noll, Owens, Smith, & Schwanke, 2006) suggests that lack of training opportunities in AT continues to be a concern. The study noted little change compared to a survey completed 10 years earlier. Moreover, results of the 2006 study suggested that vocational rehabilitation counselors may not recognize AT needs of consumers, as 43% stated they were not confident of their ability to determine the potential need for AT. If counselors do not recognize the need for AT, they may be less likely to request AT to be considered for clients referred for vocational evaluation services. These results emphasize the need for vocational evaluators to be knowledgeable about AT.

Additional barriers to the integration of AT in the VE process were investigated by Langton and Lown (1995). The project involved a survey of state vocational rehabilitation agencies to determine the extent to which AT resources and services were used in the evaluation process. Shortage of assistive technologists, unwillingness to break standardization of instruments, and insufficient time during a VE were all cited by agencies as reasons for not incorporating AT into the VE process. The authors noted that no one barrier stood out more than others. Agencies reported that limited funds for AT were seldom a barrier. This may suggest legislation to mandate the use of AT was supplying sufficient funds to implement legislative

requirements. However, Noll et al. (2006) noted that funds were a factor in limiting training opportunities, especially since 2001.

Assistive technology and vocational evaluation studies

Several studies (Reed & Fried, 1995; Langton, 2003) have investigated the status of AT use in VE. Both surveys were held at large vocational evaluation conferences. Survey participants were asked to respond to items related to practitioner knowledge of AT, use of AT during the evaluation process, AT request by referral source, and AT resources.

Practitioner knowledge of AT was mentioned as one of the potential barriers to incorporation of AT in the evaluation process. When subjects were asked to appraise their knowledge of AT devices and services, Reed and Fried (1995) found the most common response to be *limited*. Langton (2003) established similar results nearly a decade later with subjects rating themselves as a 6.14 on a 10 point scale of AT knowledge. This comparison exposes the stagnation of the expansion of knowledge over time and forces consideration for AT training. In the 1995 study, 39% of respondents indicated they had no AT training, with the majority reporting 2-8 hours. Subjects in the 2003 study reported lack of training opportunities as the major cause for limited knowledge, with nearly 95% of respondents in both studies indicating a need for AT training. Besides AT knowledge and need for training, the studies demonstrated small progress on other areas of the issue over time.

Use of AT during the evaluation process was investigated by both studies. Reed and Fried (1995) indicated that 67.2% of respondents used AT during the hands-on phase of the evaluation *never, seldom, or occasionally*. In the Langton (2003) study, subjects were asked to identify how often they used modifications such as lengthening test schedules, modifying test environment, and utilizing aids when working with individuals with severe disabilities. The most

common response indicated by subjects was *occasionally*. Use of specific AT devices was also investigated in this study. Most subjects indicated *seldom* as their level of use for the devices, with some indicating *almost never* and *occasionally*. Based on these results, it is evident that persons with severe disabilities do not always receive necessary accommodations that have the potential to increase their vocational options. Use of AT as requested by the referral source was also investigated by both studies. *Seldom* was cited as the most common response in both cases.

AT resources and tools were investigated. Reed and Fried's (1995) survey indicated vendor catalogs, books, visual aids, seating and positioning equipment, adapted tools, adapted computers, and communication devices were the most common AT tools located at the assessment site. The same survey asked practitioners to indicate sources, both on and off site, used to consult regarding AT questions. The most common responses included state vocational rehabilitation programs, rehabilitation engineers, vendors, regional technology centers, and national AT clearinghouses.

Comparing the results from the studies of Reed and Fried (1995) and Langton (2003) suggest little to no significant improvement has been made in the use of AT in the VE process. Without AT persons with severe disabilities seldom meet current job requirements. In addition, skills and abilities for future jobs or trainings are difficult to determine. Without consideration of AT during the evaluation process, vocational evaluators are allowing the individuals' current functional limitations to dictate vocational options. Failure to include AT in the assessment process may yield limited vocational options and choices. Using AT during the VE process may produce more valid, less discriminatory vocational profiles for individuals with severe disabilities (Langton, 1991). Vocational options are also increased. Unfortunately AT is being underutilized during the assessment process (Langton et al., 1998).

Summary

The field of VE has evolved since its early roots. Traditional assessment measures were discussed, addressing the need for assessment of special populations including persons with disabilities. A historical perspective was taken to describe the evolution of VE and its current status. The field of AT was introduced as it relates to persons with disabilities. Finally, barriers to incorporation of AT in VE and research related to AT and VE were identified. Based on the results of the most current research, it was indicated that up to date information regarding vocational evaluators' knowledge and use of AT is considered useful in order to improve evaluation services for persons with disabilities.

Chapter III: Methodology

The purpose of this study was to generate an updated baseline of information regarding vocational evaluators' knowledge and utilization of AT. Significant findings of this study will enhance vocational assessment of persons with disabilities by identifying areas in need of improvement related to vocational evaluators' knowledge and use of AT. This chapter will describe subject selection and description, instrumentation, data collection procedures and data analysis.

Subject Selection and Description

The sample for this study consisted of any rehabilitation professional involved, in some capacity, with the vocational assessment or evaluation of persons with disabilities. A convenience sample of rehabilitation professionals attending the 13th National Forum on Issues in Vocational Assessment and Vocational Evaluation were surveyed.

Instrumentation

The McCarthy Vocational Evaluation and Assistive Technology Survey (MVEAT) was designed specifically for this study to assess AT use among vocational evaluators and other career assessment professionals. The instrument was created based on a review of current literature, modification of a 1995 AT Survey, and assistance from a faculty member with a significant amount of research in the area of VE.

The MVEAT consisted of 25 items and was divided into four sections: demographics, AT education and background, AT resources, and current applications of AT in evaluation process. The demographic questions (items 1-9) collected information regarding gender, age, experience performing VE, professional licensures, job title, employment setting and location, and level of education.

Section two (items 10-16) was designed to collect information related to the subjects training, education and experience with AT. Source(s) of training, total hours of AT training, use of AT during the VE process as well as frequency of use of specific devices were collected. This section also asked the subjects to rate their level of knowledge regarding specific assistive devices, how their knowledge meets the demands of their work, and employer support as it relates to incorporation of AT in vocational assessment.

Section three (items 17-18) was designed to determine what sources of information vocational evaluators consulted when they had questions about AT. In particular, the subjects were asked to identify resources they utilize both on and off the evaluation site.

The fourth and final section (items 19- 25), was designed to collect information regarding current practices of evaluation professionals in regard to AT. Subjects were asked to identify how frequently referral sources requested AT to be considered during the VE. The rate at which an evaluator considered AT independent of the referral sources was also considered. Specifically, subjects were asked to indicate how often they address AT items (funding, information resources, equipment or devices, AT programs etc.) in the recommendations section of the VE report.

Section four asked participants to reflect on their overall use of AT and any related education. Specifically, subjects were asked if additional education in AT would be beneficial. They were also asked if they perceived AT to be beneficial to the clients they serve. This section was designed to gather information related to the overall perceived need of increased AT education and use.

Content and face validity for the MVEAT was determined using a pilot study consisting of subject matter experts. Three certified vocational evaluators from Stout Vocational

Rehabilitation Institute (SVRI) in Menomonie, WI were given a copy of the instrument and a review form. By signing the review form, the evaluators stated they perceived the instrument to accurately appraise a vocational evaluator's knowledge and utilization of AT. All evaluators involved in the pilot study signed the forms suggesting the survey instrument measured the intended content.

Data Collection Procedures

The MVEAT was distributed at the Thirteenth National Forum on Issues in Vocational Assessment at Auburn, Alabama from April 25 through 29, 2007. Attendees of the forum were involved, in some capacity (e.g. practitioner, educator, administrator), with evaluation of persons with disabilities. The MVEAT was also provided to VE professionals not attending the conference in Kansas, Virginia, and Maryland via colleagues attending the conference.

The researcher distributed the survey at a designated table near the registration desk. Forum attendees were asked to complete the five-page survey directly on the document provided and return the completed survey to the survey box on the table. Electronic and other alternate formats were available to participants. If participants chose to take the survey and complete it off-site, they were provided a self-addressed stamped envelope with instructions to return it to the research by Tuesday May 15, 2007.

Data Analysis

The Statistical Program for Social Sciences (SPSS), version 15.0, was used to analyze the data. All appropriate descriptive and inferential statistics were used to analyze the survey data. Specific analyses that were used consisted of Pearson Product-Moment Correlation Coefficient (r) and Frequency Tables to determine whether a relationship between selected variables existed. A test of internal reliability was completed on knowledge and usage of the nine specific AT

devices. An acceptable level of inter-item reliability was found using Cronbach's Alpha Coefficient of Reliability. Therefore, two new variables were created: Total Usage and Total Knowledge. Correlations were then measured between the new variables, Total Usage and Total Knowledge as well as other related variables.

Chapter IV: Results

The purpose of this study was to generate a current baseline of information regarding vocational evaluators' AT knowledge and usage. This chapter presents the results of the MVEAT survey including descriptive data and results of the statistical analyses.

Descriptive statistics were calculated for the first 24 quantitative items. Any qualitative comments received from participants are discussed for item 25. A total of 67 (N=67) usable surveys were collected from vocational assessment professionals.

Demographics

Age of the respondents ranged from 24 to 67 years with mean age of 48 years. Respondents reported a mean of 15 years of vocational evaluation experience ranging from 0 to 37 years experience. Forty-one respondents were female (61.2%) and 26 were male (38.8%). Fifty-five (82.1%) respondents indicated they had attained education at a Master's degree or higher (see Table 1). Twenty-seven (40.3%) reported holding a CVE designation.

Table 1

Highest Educational Degree Obtained

Degree	Frequency	Valid Percent
Bachelors	12	17.9
Masters	44	65.7
Ed.S.	3	4.5
Doctoral	8	11.9

Fifty-five (83%) of respondents currently provide vocational evaluations to persons with disabilities. The most frequent job title reported was evaluation/assessment practitioner (see Table 2).

Table 2

Current Job Title

	Frequency	Valid Percent
Evaluator/assessment practitioner	37	55.2
Rehabilitation Administrator	2	3.0
Rehabilitation Educator	5	7.5
Transition Coordinator	1	1.5
Other	22	32.8

Seventeen respondents (25%) reported their current employment setting as state vocational rehabilitation agencies (see Table 3). A broad geographic representation was noted as subjects reported current employment in 19 states (including District of Columbia) and two nations other than the United States (see Table 4).

Table 3

Current Employment Setting

Current employment setting	Frequency	Valid Percent
Community-based rehabilitation	4	6
Hospital	2	3
Other	3	4.5
Private Not-for-profit	9	13.4
Private-for Profit	6	9
Rehabilitation Facility	6	9
School (K-12)	4	6
Self-employed/Private practice	6	9
State Vocational Rehabilitation	17	25.4
University/college	10	14.9

Table 4

Geographical Location (US State) of Employment

Geographical Location	Frequency	Valid Percent
Alabama	10	14.9
California	4	6.0
District of Columbia	2	3.0
Florida	6	9.0
Georgia	2	3.0
Illinois	1	1.5
Kansas	13	19.4
Kentucky	1	1.5
Louisiana	2	3.0
Maryland	5	7.5
Michigan	1	1.5
North Carolina	1	1.5
Ohio	2	3.0
Oklahoma	1	1.5
Pennsylvania	2	3.0
South Dakota	1	1.5
Texas	1	1.5
Virginia	8	11.9
Wisconsin	2	3.0

Assistive Technology Education and Background

Subjects identified types of AT training (see Table 5) and total hours of training received. Thirty-three (50%) of respondents reported over 20 hours, nine (13.6%) reported 15 to 20 hours, eight (12.1%) reported 9 to 14 hours, nine (13.6%) reported three to eight hours, and seven (10.6%) reported less than two hours of training in the area of AT.

Table 5

Sources of Assistive Technology Training

	Frequency	Valid Percent
None	1	1.5
On-the-job Training	35	52.2
Short-Term Training	44	65.7
Part of Undergraduate Degree	6	9.0
Part of Graduate Degree	23	34.3

When asked how often AT was used during the “hands on” (work samples, community-based assessment etc.) phase of the evaluation, 28 respondents (41.8 percent) indicated *occasionally*, with one subject not responding (see Table 6).

Table 6

Use of Assistive Technology During the Hands-on Phase of Evaluation

	Frequency	Valid Percent
Never	3	4.5
Seldom	18	27.3
Occasionally	28	42.4
Frequently	15	22.7
Always	2	3

Data related to knowledge and use of nine specific AT devices was collected. Due to high inter-item relatedness, these measurements were collapsed to create two new variables which showed acceptable levels of reliability: Total usage (see Table 7), $\alpha = .782$ and total knowledge (see Table 8), $\alpha = .883$. Total usage of AT was reported between *seldom* and *occasionally* ($M=2.53$, $SD=0.6$). Total knowledge was reported between *limited* and *moderate* knowledge ($M=2.83$, $SD=0.57$).

Table 7

Correlation Matrix for Total Usage Variable

	1	2	3	4	5	6	7	8	9
1. Communication device	1	.235	.315*	.316*	.277*	.317*	.198	.088	.311*
2. Computer access		1	.267*	.240	.351**	.286*	.353**	.397**	.308*
3. Environment controls			1	.419**	.231	.249	.246	.392**	.226
4. Independent aids				1	.150	.201	.319*	.067	.032
5. Manipulation aids					1	.577**	.343**	.250	.404**
6. Memory cognition aids						1	.362**	.152	.453**
7. Mobility aids							1	.401**	.145
8. Seating positioning								1	.164
9. Visual aids									1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 8

Correlation Matrix for Total Knowledge Variable

	1	2	3	4	5	6	7	8	9
1. Communication device	1	.543**	.373**	.530**	.543*	.592**	.540**	.387**	.497**
2. Computer access		1	.459**	.383**	.583**	.397*	.403**	.466**	.468**
3. Environment controls			1	.570**	.497**	.296*	.442**	.433**	.412**
4. Independent aids				1	.490**	.429**	.503**	.260**	.533**
5. Manipulation aids					1	.704**	.416**	.385**	.494**
6. Memory cognition aids						1	.449**	.295**	.426**
7. Mobility aids							1	.435**	.585**
8. Seating positioning								1	.416**
9. Visual aids									1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Respondents indicated their level of agreement with the statements “my professional skills in AT meet my current needs” and “my current employer encourages AT education.”

Based on a 5-point scale where 1 equals *strongly disagree* and 5 equals *strongly agree*, responses to both questions were M=3.22 (SD=0.92) and M=3.78 (SD=0.82) respectively.

Assistive Technology Resources

Subjects were asked to indicate all AT resources or tools available to them at the evaluation site. Vendor catalogs were reported as the most common resource, with adapted computers and communication devices the second and third, respectively (see Table 9). The least

common resource reported, with the exception of *other*, was rehabilitation engineer or technologists.

Table 9

On-site Assistive Technology Tools/Resources

	Frequency	Valid Percent
Adapted computers	35	52.2
Adapted tools	27	40.3
Books	24	35.8
Communication devices	32	47.8
Other	11	16.4
Rehabilitation engineer	17	25.4
Vendor catalogs	44	66.7

Subjects were asked to indicate the source they used to answer AT related questions. Online resources stands out as the most common resource used (see Table 10). The least common sources reported were physical therapists and *other* category.

Table 10

Sources to Answer Assistive Technology Questions

	Frequency	Valid Percent
Books	23	34.3
College/University	24	36.4
Local community resources	27	40.9
Occupational therapists	16	23.9
Online resources	49	74.2
Other	7	10.6
Other practitioners	31	47
Physical therapists	12	19.7
Rehabilitation engineer	39	59.1
State VR agency	29	43.9
Vendor catalogs	36	53.7

Current Applications of Assistive Technology in Evaluation

Subjects were asked how often referral sources requested AT issues be addressed in the VE. Responses were made on a five point scale with anchors *never*, *seldom*, *occasionally*, *frequently* and *always*. *Seldom* was indicated by 30 (47.6%) subjects, *occasionally* by 18 (28.6%) and *frequently* by nine (14.3%).

Using the same descriptors noted above, subjects were also asked to indicate how often they addressed AT when it was not requested in the referral questions. Twenty-nine subjects (46%) listed *occasionally*, 13 (20.6%) indicated *frequently* and 11 (17.5%) indicated *always*.

Respondents were asked to indicate each item addressed in the recommendations section of evaluation/assessment reports. The most common item addressed in the recommendations section was AT equipment or devices (76.6%) while the least common item was addressing AT funding sources (17.2%).

When asked if additional AT information would help them in their work, 59 respondents (90%) perceived a need. Of the 59 who perceived a need for additional information 56 (86.2%) indicated additional education on specific AT devices would help them in their work, while 47 (72.3%) reported they would like more information on how to incorporate AT in VE.

Participants were asked:

Over the course of your career in VE and Assessment, estimate the percentage of the clients you served where integration of AT during the assessment process may have increased employment options.

On average, respondents estimated that approximately 30% of past clients may have had increased employment options as a result of AT integration into the assessment process.

Responses ranged from zero to 100 percent.

The final qualitative item asked participants to comment on the subject of AT in VE. Eight responses indicated additional education on this subject is needed, this was the most frequent comment noted. Other responses included the need for onsite resources and additional research on this subject.

Correlation Between Knowledge and Usage of Assistive Technology

Variables *total knowledge* and *total use* were found to be significantly correlated ($r=.624$) at the .01 level. Given knowledge and usage are positively correlated, factors that influence *total knowledge* and *total usage* were investigated. *Total amount of work experience, training, and*

employer encouragement of AT education were significantly correlated with *total knowledge* ($r=.341$, $r=.548$, and $r=.253$ respectively). Degree and type of AT training were unrelated to *total knowledge* (See Table 11).

Table 11

Correlation Between Knowledge and Training Sources

	Total Usage	Total Knowledge
Total Work Experience	.325**	.344**
Total AT Training	.449**	.548**
Employer Encouragement	.308*	.253*
No Training	-.007	.138
On-job Training	-.109	-.031
Short-term Training	-.146	-.252*
Undergraduate Training	-.121	.019
Graduate Training	-.100	-.243
Degree	.168	.120

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Online Resources

Forty-nine (73%) of the respondents reported consulting online resources to answer their AT questions. *Age*, *total usage*, and *total knowledge* were uncorrelated with use of online resources ($r=.145$, $r=-.166$, and $r=-.196$ respectively).

Chapter V: Discussion

A survey instrument was designed to assess vocational evaluators' knowledge and usage of AT. The purpose of the project was to provide an updated baseline of information on the subject. A comprehensive review of the literature was conducted and discussed the field of VE and the use of AT in the evaluation process.

Salient findings, practice implications, social change implications, recommendations and conclusions will be discussed. This chapter will also discuss the limitations of the project and provide appropriate caution when applying this research to the general population of vocational evaluators.

Assumptions and Limitations of the Study

There are three primary assumptions of this study: 1) this was a representative sample, 2) the instrument was valid and 3) the participants responded accurately. Caution should be exercised generalizing these results to other settings. Although collecting data onsite at a professional conference yielded abundant responses, the sample may not be representative of all vocational evaluators. Also, the instrument was intended to collect general information on AT in VE and did not focus on any specific area within the topic.

Salient Findings

First, the variables *AT total knowledge* and *AT total usage* were found to have a moderately strong correlation ($r=.62$) significant at the .01 level. Second, total work experience has moderate correlations with *total usage* ($r=.325$) and *total knowledge* ($r=.344$) at the .01 level. Third, total hours of AT training was found to have moderately strong correlations with *total knowledge* ($r=.548$) and *total usage* ($r=.449$) at the .01 level. Fourth, employer encouragement of AT education has moderate correlations with *total knowledge* ($r=.253$) and *total usage* ($r=.308$)

at the .05 level. Lastly, 49 (73%) of respondents reported consulting online resources to answer their AT questions.

Implications of Findings

The amount of AT knowledge and usage reported in this study is consistent with earlier studies by Reed and Fried (1995) and Langton (2003). Furthermore, this study also showed a relationship between AT knowledge and usage, consistent with Reimer-Reiss' (2003) findings. For years, practitioners have indicated they are hungry for AT education (Reed & Fried, 1995; Langton, 2003) and in the current study reported a perceived need for additional AT education. However, when comparing results from Reed and Fried (1995) and the current study, it is evident that any previous efforts have not been successful at increasing AT knowledge or usage. As Noll et al. (2006) suggests lack of AT training opportunities may be one source of the problem.

The correlation between work experience and AT knowledge and usage has not been reported in previous AT and VE studies. The finding suggests novice practitioners are less likely to use and have knowledge of AT than practitioners with more experience. Therefore, exposure to AT devices and services through experience may be one method of increasing AT knowledge and usage. Awareness of this correlation provides justification to further investigate other factors associated with experienced practitioners that may be responsible for the increase in reported AT knowledge and usage.

Next, the correlation between total hours of AT training and AT knowledge and usage is important. Recognizing this relationship, practitioners have perceived a need for additional AT training in previous studies (Reed & Fried, 1995; Langton, 2003) as well as in the current study. It is evident AT training needs to continue. Based on the correlation between strong employer

advocacy for AT training and increased knowledge, practitioners depend on their employers to provide necessary training. This is indicative of the influence employers and work environment have on employees. With limited financial resources, employers must choose which training to sponsor.

Lastly, online resources were reported as the most common method for finding AT information. According to this research, practitioners utilize online resources to close the gap between their existing knowledge of AT and the knowledge they need to have in their jobs. Such a high rate of online resource usage suggests practitioners are aware of the role AT plays in accurate assessment of persons with disabilities. Practitioners appear to be empowering themselves, and potentially their clients, with the online AT information. Pursuing online resources is also indicative that practitioners realize the financial strain that prevents employers from providing AT training as indicated by Noll et al. (2006). It appears practitioners are trying to do the next best thing to AT training. No research is available on the use of online resources by practitioners to compare to the current findings. The types of online resources used as well as frequency, intensity and duration, and accuracy of the online information used are unknown to this researcher.

Each of these findings also has a social change implication. Persons with severe disabilities have increased vocational options through the use of AT. AT allows persons with disabilities to participate in productive and meaningful vocational lives. This parallels the original goal of vocational rehabilitation: Assist an individual to maximize their vocational and independent living potential.

Recommendations

Simply stated, AT training increases AT knowledge; increased AT knowledge leads to more use of AT. If vocational evaluators are to integrate AT in the VE process they need more AT training at all levels (pre-professional/college, short-term etc.).

This research indicates that vocational evaluators have limited knowledge of AT. Practitioners reported additional education in the area of AT is necessary. In order for this to occur, AT information needs to be integrated into college level vocational evaluation courses, continuing education courses, on-the-job training, and mentorship training. This will provide more awareness and knowledge of AT for future and current vocational evaluation professionals in order to serve clients better.

College level courses in AT need to be available to VE students. Specific courses such as principles of VE, laboratory courses, and practicum experiences need to include AT information. Rehabilitation agencies that provide VE services need to provide continuing education opportunities related to AT. Assistive technology organizations such as Rehabilitation Engineering and Assistive Technology of North America (RESNA) may be able to provide training ideas and opportunities for VE practitioners in addition to the latest information.

A high rate of use of online AT resources was indicated by this research. Given the limited research available on this subject, more information is necessary. This can only be accomplished by conducting research on the subject. It is recommended that future research focus investigation on the use of online resources.

Conclusions

Compared to earlier studies, this research project revealed limited progress in the use of AT in the VE process. Practitioners are using online resources, but AT continues to be

underutilized directly in the VE process. Stagnation indicates VE as a profession struggles with integration of AT into the evaluation process. Evaluating previous attempts to remedy the issue and using that information in future research is the first step towards much needed change. It is with these recommendations of providing more diverse education to VE students and practitioners and further investigating use of online resources, AT integration into the VE process can be achieved.

Vocational evaluation emerged in response to a demand for improved vocational assessment techniques that did not discriminate against individuals with disabilities. Vocational evaluators used creative solutions to develop work-based performance techniques that identified functional abilities of persons with severe disabilities. This creative problem-solving approach to vocational assessment has become the hallmark of quality VE services. Incorporating AT into the VE process provides modern, creative solutions necessary to determine ability often masked by the functional limitations of a disability. For persons with severe disabilities, AT can provide solutions to make the impossible a reality!

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Appendix A: Survey Instrument

The Vocational Evaluators' Knowledge and Utilization of AT Survey**Demographics**

1. **Gender:** Male Female
2. **Age:** _____ years
3. **Do you currently conduct VEs or assessments on persons with disabilities?**
 Yes No
4. **Total amount of work experience in VE.** Please include practicum and internship experiences in VE.
_____ years _____ months
5. **Professional certifications/licenses:** Please write in. _____
6. **What is your current job title?** Please check one that describes your primary work duties.
 Evaluation/Assessment Practitioner Rehabilitation Educator
 Rehabilitation Administrator Transition Coordinator
 Other _____
7. **What is your current employment setting?** Please check one.
 School (K-12) Self-employed/Private Practice
 Private-for-profit State Vocational Rehabilitation
 Hospital Community-based Rehabilitation
 University/ College Private Not-for-Profit Enterprise
 Rehabilitation Facility Other _____
8. **What is the geographical location of your employment?** Please write in.
State _____ Country (If not United States) _____
9. **Highest educational degree obtained:** Please check one.
 High School Master's Degree
 Associate's Degree Ed.S.
 Bachelor's Degree Doctoral Degree
 Other (Describe) _____

Assistive Technology (AT) Education and Background

This section focuses on education and background in AT. Please read each question or statement carefully as you consider your AT education and background. Respond according to the directions that apply to each numbered item.

10. **Source(s) of training specific to AT.** Please check all that apply.
 None
 On-The-Job Training (e.g. observation, work with mentor)
 Short-Term Training (e.g., workshop, in-service, continuing education)
 Part of Undergraduate Degree: Please specify degree _____
 Part of Graduate Degree: Please specify degree _____
11. **What is the total amount of AT training you have received in all areas indicated in number 10?** Please check one.
 Less than 2 hours 9 to 14 hours over 20 hours
 3 to 8 hours 15 to 20 hours
12. **How often do you use AT during the “hands on” (e.g. work samples, community-based assessment) phase of evaluation/ assessment?** Please check one.
 Never Seldom Occasionally Frequently Always
13. **Please indicate with an “X” your LEVEL OF USE of the following:**

	Never	Seldom	Occasionally	Frequently	Always
Communication Devices					
Computer access					
Environmental Controls					
Independent Living aids					
Manual/ Manipulation Aids (e.g. writing aids)					
Memory or cognition aids					
Mobility Aids					
Seating and Positioning					
Visual Aids					

14. Please indicate with an "X" your LEVEL OF KNOWLEGE in the following areas:

	None	Limited Knowledge	Moderate Knowledge	Significant Knowledge	Expertise
Communication Devices					
Computer Access					
Environmental Controls					
Independent Living aids					
Manual/ Manipulation Aids (e.g. writing aids)					
Memory or Cognition Aids					
Mobility Aids					
Seating and Positioning					
Visual Aids					

15. Circle your level of agreement with the following statement: *My professional skills in AT meet my current needs.*

Strongly Disagree Disagree Neutral Agree Strongly Agree

16. Circle your level of agreement with the following statement: *My current employer encourages AT education.*

Strongly Disagree Disagree Neutral Agree Strongly Agree

Assistive Technology (AT) Resources

This section pertains to AT resources. Please read each statement carefully as you consider AT resources. Respond according to the directions that apply to each numbered item.

17. Please check the AT resources/tools you have on the evaluation site:

- Vendor Catalogs Rehabilitation Engineer/ Technologists
 Communication devices Adapted Computers
 Adapted tools Books
 Other (please specify) _____

18. Please check the sources you use to answer your AT questions:

- Vendor Catalogs Rehabilitation Engineer/ Technologists
 Books State Vocational Rehabilitation Agency
 Occupational Therapists Online resources
 Physical Therapists College/University
 Other Practitioners
 Local community resources (e.g. Independent Living Centers)
 Other (please specify) _____

Current Applications of Assistive Technology (AT) in Evaluation/Assessment

This section focuses on current use of AT in the evaluation/assessment process. Please read each question or statement as you consider your current application of AT in evaluation/assessment. Respond according to the directions that apply to each numbered item.

19. How often are you asked by the referral source to address AT issues?

- Never Seldom Occasionally Frequently Always Does not apply

20. How often do you address AT issues when the referral questions do not directly relate to AT?

- Never Seldom Occasionally Frequently Always Does not apply

21. Please check each item that is addressed in the recommendations section of your evaluation/assessment reports: Check all that apply.

- AT funding options AT equipment or devices
 AT information resources AT program in agencies/schools
 Formal AT evaluation (e.g. suggestions for seating assessments)
 Other _____

22. Circle your level of agreement with the following statement: *Additional education in AT would help me in my work.*

Strongly Disagree Disagree Neutral Agree Strongly Agree

23. **If agreement with number 22 above, check all areas of need.**
Funding options Specific AT equipment or devices
Utilizing AT in VE Information Resources
Other (please specify)_____

24. **Over the course of your career in VE and assessment, estimate the percentage of the clients you served where integration of AT during the assessment process may have increased employment options.**

Please write in. ___ %

25. **Please use the space below to write any comments about this topic area or survey. Thank you for your assistance!**

End of Survey

Thank you for your participation with this project. **Please return completed surveys to the researcher (Amanda McCarthy) near the registration desk.** If you prefer to return the survey by mail, a self-addressed stamped envelope is available from the researcher or mail survey to the address below by Tuesday May 15, 2007. Thank you.

Amanda McCarthy
Department of Rehabilitation and Counseling
University of Wisconsin-Stout
P.O. Box 790
Menomonie, WI 54751

Appendix B: Cover Letter

The Vocational Evaluators' Knowledge and Utilization of AT Survey

Dear 13th VECAP Forum Attendee:

Attached you will find a survey designed to provide information regarding practitioners' knowledge and utilization of AT. AT is considered any item, piece of equipment or product system whether acquired commercially off the shelf, modified, or customized that is used to increase or improve functional capabilities of individuals with disabilities. Rehabilitation technology and rehabilitation engineering are considered synonymous with AT.

Technology continues to play a role in the lives of persons with disabilities. In order to ensure VE is a meaningful experience, professionals must take on the challenge of gaining awareness of AT and associated resources.

The survey should take approximately **10 minutes** to complete. Your responses will be anonymous as your name will not be included on any documents and we do not believe that you can be identified in any way. Participation is strictly voluntary. An implied consent form is available to each participant.

Completion of this survey will provide updated information related to practitioners' knowledge and utilization of AT. Aggregated data will hopefully be reported in the near future in professional journals. Your time and contribution are greatly valued.

Respectfully,

Amanda K. McCarthy (Primary Researcher)
University of Wisconsin-Stout Graduate Student

Michelle Hamilton, Ph.D., CVE, CCRC (Advisor)
University of Wisconsin-Stout

Appendix C: Consent to Participate

Consent to Participate in University of Wisconsin-Stout Approved Research

Title: Vocational evaluators' knowledge and utilization of AT

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Description: The purpose of this survey is to provide information regarding vocational evaluators' knowledge and utilization of AT. Technology continues to play a major role in the lives of persons with disabilities. In order to ensure VE is a meaningful experience, professionals must take on the challenge of gaining knowledge of AT devices and associated resources.

Risks and Benefits: Participation in this study involves minimal risk. Your participation in this study will contribute knowledge to improve assessment practices for persons with disabilities.

Time Commitment and Payment: If you agree to participate in this study, you will be required to fill out the survey and turn it back into the investigator. You may also return the survey to the researcher in the self-addressed, stamped envelope provided. No compensation will be provided.

Confidentiality: Your name will not be included on any documents. We do not believe that you can be identified from any of this information.

Right to Withdraw: Your participation in this study is entirely voluntary. You may choose not to participate without any adverse consequences to you. However, should you choose to participate and later wish to withdraw from the study, there is no way to identify your anonymous document after it has been turned into the investigator.

IRB Approval: This study has been reviewed and approved by The University of Wisconsin-Stout's Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University policies. If you have questions or concerns regarding this study please contact the Investigator or Advisor. If you have any questions, concerns, or reports regarding your rights as a research subject, please contact the IRB Administrator.

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Statement of Consent: By completing the following survey you agree to participate in the project entitled, "Assistive Technology Knowledge and Usage Among Vocational Evaluators."