

Review of Intensive Assessment Recommendations Conducted at the  
Assistive Technology and Assessment Center (ATAC),  
University of Wisconsin--Stout

by

Karla Jo Miess

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Investigation Advisor

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The Graduate School  
University of Wisconsin-Stout  
Menomonie, WI 54751

ABSTRACT

Miess, Karla J.

(Writer)

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The 1990s brought change to the field of rehabilitation via two pieces of legislation. The first, Americans with Disabilities Act in 1990, added reasonable accommodation to the forefront of service delivery and employment. Two years later, the Rehabilitation Act Amendments of 1992 directed the provision of services to individuals with the most severe disability as being first priority. As the provision of services changed, the need for vocational evaluation to consider assistive technology became more important. “With increased emphasis on screening individuals with severe disability, comprehensive assessment such as vocational evaluation functions as a critical entry point into the rehabilitation process where the need for rehabilitation technology should be identified” (Langton & Lown, 1995, p. 24).

The Vocational Evaluation and Work Adjustment Association (2000) supported the increased and expanded role of assistive technology in the field of vocational evaluation. In the mid 1990's, intensive evaluation was added to the Assistive Technology and Assessment Center's (ATAC) menu of services combining vocational evaluation and assistive technology. "Rehabilitation technology should be an integral part of any vocational evaluation service"(Langton & Lown, 1995, p. 25).

Intensive assessments were a relatively new service; therefore, a critique of the case files was of benefit to ATAC for the purpose of determining demographic information and recommendation patterns made from 1996 to June of 2000. This research examined three questions.

1. What were the demographic characteristics of the population being served?
2. What types of assistive technology recommendations were made?
3. What types of vocational recommendations were made?

The population examined was individuals with severe disabilities who ranged in age from childhood to adulthood. The subjects in this study received ATAC services from 1996 to June of 2000. Referral sources for ATAC services included the Division of Vocational Rehabilitation, school districts, or family-made. Since 1996, 100 intensive assessments were conducted. An inclusive list of all intensive evaluation case files was compiled for the study, and the entire population was reviewed. The checklist used during the fall of 2000 was created for this study by the researcher; therefore, validity and reliability measures weren't established. All appropriate descriptive statistics like percentages and frequencies were utilized to interpret and report the data.

Study results indicated the most frequent age range of participants was 21 to 54 years of age, which is to be expected given the population being served was referred from vocational sources like the Division of Vocational Rehabilitation. Demographics of the population were determined to be predominantly males and individuals with a physical disability. The “other” category for both assistive technology and vocational recommendations had the largest number of recommendations. Recommendations that fell under the “other” category were for things that did not fit into the predetermined choices like mobility or two-year schooling. The second most frequent recommendation categories were computer access for assistive technology and work experience for vocational evaluation.

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## CHAPTER ONE

### Introduction

Three areas pertinent to vocational rehabilitation and to the topic of intensive vocational/technological assessment (intensive assessment) discussed in this chapter were assistive technology, vocational evaluation, and intensive assessment. The statement of the problem, research questions, and definition of terms were given as well.

On July 4, 1999, President Bill Clinton stated, “ Seventy-five percent of Americans with Disability remain unemployed.... 72% say they want to go to work. This is not just a missed opportunity for Americans with disability, it is a missed opportunity for America” (SSA Publication, 1999, p.3). During the same year, the US Bureau of the Census reported approximately 54 million non-institutionalized Americans had physical, intellectual, or psychiatric disabilities. Twenty-six million of this population was classified as having a severe disability. (Hernandez, B., Keys, C., & Balcazar, F., 2000, p. 4). A study done at Cornell University in 2000 also reported similar information. “...Most Americans reaped higher incomes from an economy that created a record number of new jobs in the 1990s, while the employment of Americans with disabilities fell steadily” (Cornell University, 2000, n.p.). Modak (2000, n.p.) stated, “Given today’s employment climate, employers can no longer afford to discriminate against or ignore individuals with disabilities.”

Historically, legislation was a driving force behind change in the field of rehabilitation. The 1973 Rehabilitation Act introduced priority of service. As cited in Levinson (1994, n.p.), “ The process of vocational assessment for individuals with disabilities originated within the field of vocational rehabilitation and was originally



designed to determine who was eligible for services provided by state and federal rehabilitation agencies and to determine what services an individual needed to be placed in competitive employment settings” (McCray, 1982). Amendments added to the Rehabilitation Act in 1986 were of importance because assistive technology and rehabilitation engineering were defined. Public Law 99-506 defines rehabilitation engineering as:

...the systematic application of technologies, engineering methodologies, or scientific principles to meet the needs of and address the barriers confronted by individuals with handicaps in areas, which include education, rehabilitation, employment, transportation, independent living and recreation (Cook, A.M., & Hussey, S.M., 1995, p. 17, as cited in Enders & Hall, 1990, p.460).

In 1986, Corthell stated:

The use of assistive technology and rehabilitation engineering services is a resource, which can help vocational evaluators, and other assessment staff to more effectively serve individuals with severe functional limitations. Presently, however, there are very few vocational evaluation programs which effectively incorporate assistive technology into the assessment process. (Langton, 1993, p. 13)

The 1990s brought change to the field via two pieces of legislation. The first was the Americans with Disabilities Act in 1990, which added reasonable accommodation to the forefront of service delivery and employment. The second was the Rehabilitation Act Amendments in 1992.

“If any confusion ever existed about the primary goal of the state-federal rehabilitation system, it was cleared up in the 1992 Amendments to the Rehabilitation Act. Competitive employment for people with disabilities is clearly the primary objective of rehabilitation services.” (Mullins, J., Roessler, R., Schriener, K., Brown, P., & Bellini, J., 1997, p. 21)

The Rehabilitation Act Amendments of 1992 directed the provision of services to individuals with the most severe disability as being first priority. “With increased emphasis on screening individuals with severe disability, comprehensive assessment such as vocational evaluation functions as a critical entry point into the rehabilitation process where the need for rehabilitation technology should be identified” (Langton & Lown, 1995, p. 24). “Legislation has clearly stated that assistive technology (AT) considerations should occur throughout the rehabilitative process including services related to vocational evaluation, assessment, and work adjustment” (Vocational Evaluation and Work Adjustment Association, 2000, n. p.).

“Despite early recognition that the use of technology and technology related services would enhance vocational evaluations, few programs have effectively combined these two important services” (Langton, 1993, p.14). In the mid 1990’s, intensive assessment was added to the Assistive Technology and Assessment Center’s (ATAC) at the Stout Vocational Rehabilitation Institute menu of services in order to best meet the needs of people with severe disability. The practices of vocational evaluation and assistive technology were combined in “intensive assessments”. Typically, intensive assessments consisted of a vocational evaluator and a rehabilitation technologist working cooperatively with one participant. This type of evaluation was individualized to meet

the participant's needs. The goal of an intensive assessment was to assist the individual in obtaining one's maximum quality of life and vocational choice.

Intensive assessments provided several benefits to the participant. The first benefit was the individual attention given to the participant from both the evaluator and the technologist. Two experts worked to meet the needs of the participant. In addition, the technologist and the evaluator individualized the vocational evaluation process to meet the participant's needs. Through this individualized evaluation, the evaluation team drew more accurate conclusions about the participant's skills and abilities. During an intensive assessment, all areas of the participant's life were examined in addition to the vocational and educational aspects. Other areas addressed were medical, psychological, social, and related information. In the final stage of the intensive assessment process, the evaluator and the technologist developed prioritized recommendations (Klukas, G., & Annis, J., 2000, n.p.).

“Because a formal vocational evaluation is provided to many participants, it would be useful for researchers to assess the value of the recommendations provided through those evaluations” (Caston & Watson, 1990, n. p.). Because intensive assessments were a relatively new service, a critique of the case files was of benefit to ATAC for the purpose of determining population demographics and the types of recommendations provided to the participants.

### Statement of the Problem

The purpose of this descriptive study was to review intensive assessment case files from ATAC at the University of Wisconsin-Stout to determine demographic

information and recommendation patterns made from 1996 to June of 2000. Data was collected using a checklist form during the fall of 2000.

### Research Questions

This research examined case files to answer three questions about the population being served and the recommendation patterns.

1. What were the demographic characteristics of the population being served?
2. What types of assistive technology recommendations were made?
3. What types of vocational recommendations were made?

In order to answer these questions, intensive assessment case files were reviewed in order to identify age, gender, and type of disability. Recommendations were categorized into vocational or technological and then analyzed further. For example, vocational recommendations were subdivided into categories such as work experience and education: high school, two-year, or four-year. Assistive technology recommendations included computer access, augmentative communication, and workstation design interventions. A general category was created for social/recreational and medical recommendations. An “other” category was added into all three broad categories for recommendations that did not fall under the predetermined subheadings. By examining this data, ATAC had a more precise concept of the types of recommendations they were providing and the demographics of the population being served.

### Definition of Terms

For clarity of understanding, the following terms needed to be defined.

Assistive Technology can refer to a broad range of devices, services, strategies, and practices that are conceived and applied to ameliorate the problems faced by individuals who have disabilities. (Cook, A.M., & Hussey, S.M., 1995, p. 5)

Assistive Technology (Device) according to the Vocational Evaluation and Work Adjustment glossary is “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities” (Technology-Related Assistance for Individuals with Disabilities Act, 1988 cited in Dowd, 1993, p. 3).

Assistive Technology and Assessment Center (ATAC) one of four Stout Vocational Rehabilitation Institute Centers that provides a variety of participant services to aid an individual with disabilities to acquire an optimal level of personal development and economic independence.

Intensive Vocational/Technology Assessment as defined by the Stout Vocational Rehabilitation Institute brochure is a “comprehensive assessment of mobility, transportation, computers, communications, and worksite modifications preformed in conjunction with a vocational evaluation” (Assistive Technology & Assessment Center, 1999, n. p.).

Vocational Evaluation as defined by the Vocational Evaluation and Work Adjustment glossary is “a comprehensive process that systematically uses work, either real or simulated, as the focal point for assessment and vocational exploration, the purpose of which is to assist individuals in vocational development” (Dowd, 1993, p. 29).

### Assumption and Limitation

This study assumed that all case files were present and completed at the time of the study. Therefore, a possible limitation of this study might be that all of the case files may not be accessible to the reviewer.

## CHAPTER TWO

### Literature Review

#### Introduction

Topics covered in this chapter include rehabilitation, vocational evaluation, assistive technology, and intensive assessment. Pertinent legislation and relevant studies were discussed. Due to the fact that intensive assessments were believed to be exclusive to ATAC, limited literature was found regarding this subject. The final topic addressed was the relevance of looking at the types of recommendations provided.

#### Historic Overview and Legislative Foundation of Vocational Rehabilitation

The Rehabilitation Act of 1973 included a “presumed eligibility” clause. This clause created a philosophical shift whereby all individuals with disability were assumed to have employment potential. This piece of legislation shifted the population of individuals being served by rehabilitation facilities. Two subsequent amendments to the Rehabilitation Act also reinforced this change. The 1978 Amendments added independent living services. In addition, in the 1986 Rehabilitation Amendments (Section 508), accessibility and rehabilitation technology were specifically addressed.

In 1990, one of the strongest pieces of legislation was created. “The Americans with Disabilities Act (ADA) (1990) (P.L.101-336) will probably have more of an impact in changing the way we provide vocational assessment services than any other event over the past 25 years” (Wesolek, & McFarlane, 1992, p. 51). It opened civil rights doors for people with disabilities in an employment setting. The Americans with Disabilities Act fostered change by requiring employers and related service providers to provide accommodations for individuals with disability. Also, the ADA made it illegal for

employers to require disability disclosure or pre-employment medical examinations. Even though legislation was in place, employment of Americans with disabilities did not increase. US Bureau of the Census reported 26 million individuals with disability are classified as being severe (Hernandez, et al., 2000, p.4). Results from a study done at Cornell University found that unemployment rates for people with disabilities had increased. (Cornell University, 2000, n.p.)

The Vocational Evaluation and Work Adjustment Association (2000) declared, “Assistive technology considerations should occur throughout the rehabilitation process.” This viewpoint was also consistent with the Rehabilitation Act Amendments. In the early 1990s, the model, Tech Points, was developed at the Center for Rehabilitation Technology Services of the South Carolina Rehabilitation Department to integrate rehabilitation technology into the field of vocational rehabilitation. “Specifically, this process identifies places in the rehabilitation process where the use of technological services or resources should be considered” (Center for Rehabilitation Technology Services, 1993, p. 234). The seven points identified in Tech Points were:

- Tech Point 1. Referral/Application
- Tech Point 2. Extended Evaluation
- Tech Point 3. Plan Development
- Tech Point 4. Services
- Tech Point 5. Placement/Follow-up
- Tech Point 6. Closure
- Tech Point 7. Post-Employment



Implementation of this model allowed rehabilitation professionals to examine the use of assistive technology throughout the rehabilitation process in order to achieve an optimal match between technology and the individual with disability.

### Historic Overview of Vocational Evaluation

Vocational evaluation evolved from both the field of rehabilitation and others like psychology and health services.

Although the utilization of work, both real or simulated, to assess the vocational strengths and needs of people with disabilities, has been used in the field of rehabilitation for many years, vocational evaluation was not structured until the 1950s when work simulation tasks were used to place client workers in various jobs in rehabilitation facilities. (Wesolek, J., & McFarlane, F., 1992, p.51)

Originally, vocational evaluation services were utilized as a screening out tool. Trait and factor theory of vocational development looked at the individual's skills and abilities and attempted to match the individual to a job. When individuals with disabilities didn't successfully match with a job, they were screened out of the system and considered to be unemployable.

The development of several key pieces of legislation was a leading factor in altering this practice. "The historical development of vocational evaluation during the 1970s was an explosive era due to three specific influences: federal legislation, product development, and individuals being served" (Modahl, T., & Hamilton, M., 1999, p. 1-5). The "presumed eligibility" clause of the Rehabilitation Act of 1973 changed vocational evaluation drastically. Emphasis on serving individuals with severe disabilities was fostered by this legislation. After passage of this legislation, evaluators had to find a

method to evaluate individuals with severe disabilities. Meanwhile, the length of evaluations changed from approximately three weeks to one. Service provision needed to be overhauled to meet these changes. In the 1980s, computers were integrated into the vocational evaluation. “In the mid-1980s, it was apparent to legislators that technological advances were providing an opportunity for Americans with Disabilities to realize the potential that the laws were designed to ensure” (Bryant, B.R., & Seay, P.C., 1998, n.p.) The Americans with Disabilities Act (1990) redirected the focus of services toward accommodations and assistive technology.

With these changes, vocational evaluators needed to alter the manner in which they performed some assessments in order to obtain accurate information about the participant’s abilities and skills and meet individual needs. Noll (1993) stated “The use of assistive technology and equipment to modify assessment tools for the purpose of securing valid information is now a vocational evaluator role that must be assumed” (p. 26). Evaluators were required to provide accommodations throughout the evaluation process. Accommodations and modifications caused evaluators to alter the manner in which evaluation reports were written. Thomas in 1999 wrote, “...greater emphasis will be placed on describing types of accommodations and modifications made in the evaluation process and their impact on performance” (n. p.).

### Historic Overview of Assistive Technology

“Technological developments, key agencies, organizations, and recent federal legislation have all played an important role in bringing rehabilitation technology to the forefront” (Reed, 1993, p. 10). Technological advancements impacted the lives of individuals with disabilities. A key piece of legislation specific to assistive technology

was created in 1988. “Congress acknowledged AT’s potential for assisting persons with disabilities to access the “American Dream” when it passed into law in 1988 the Technology-Related Assistance for Individuals with Disabilities Act, better known as the Tech Act (Bryant, B.R., and Seay, P.C., 1988, n.p.) The purpose of the Technology-Related Assistance for Individuals with Disabilities Act (P.L. 100-407) was to positively affect the use and availability of assistive technology. The Americans with Disabilities Act greatly influenced the utilization of assistive technology by mandating the provision of reasonable accommodations in employment.

“In many cases, the functional limitations of people with severe disability have been negated or minimized through the use of assistive technology devices and services” (Reed, 1993, p. 8). Therefore, consideration of assistive technology was vital, not only at the end of the rehabilitation process but also throughout the entire process especially during vocational evaluations. Reed in 1993 also reported “The current level of involvement of assistive technology is, however, clearly on the rise. Technological developments, key agencies, organizations, and recent federal legislation have all played an important role in bringing rehabilitation technology to the forefront.” (p. 10).

### Intensive Assessment

Almost five years after the passage of the Americans with Disabilities Act, assistive technology was still being underutilized. In 1995, Langton and Lown conducted a study on the use of rehabilitation technology in the field of vocational evaluation. The study was sent to all 81 VR agencies in the 50 states. They reported “Only 18% of the agencies reported having policies requiring vocational evaluators to consider services from a rehabilitation technology specialist during the vocational evaluation process”(p.

21). Survey results also indicated, “The only phase in the vocational evaluation process where there is even “occasional” use of rehabilitation technology specialists is in outcomes/recommendations” (p. 21). Therefore, the researchers concluded that the utilization of rehabilitation technology in the evaluation process is more limited than anticipated.

In 1996, the Virginia Department of Rehabilitative Services initiated a focus group to review in-house vocational evaluation services. From this review, the following recommendations were developed:

- Integration of rehabilitation technology into the vocational evaluation process
- Increased consultation services to field staff by vocational evaluation staff
- Increased use of computer based assessment tools as well as assessment of technology skills and knowledge
- Job analysis and work site assessments (Ashley, J.M., & McGuire-Kuletz, M., 1999, 231)

The Tech Points model was utilized for training. “Those who have integrated rehabilitation technology into the rehabilitation process have seen improved vocational rehabilitation employment outcomes for persons with severe disabilities (Ashley, J.M., & McGuire-Kuletz, M., 1999, 231). These authors also stated “The intensive training and increased resources have enhanced vocational evaluation staff’s ability to assist in the employment process for people with disabilities served by the agency” (p. 238).

Not only has legislation mandated the utilization of rehabilitation technology, but also professional organizations as well. The Vocational Evaluation and Work Adjustment Association’s position paper on assistive technology stated their continued

support of assistive technology. “Individual potential is too easily underestimated or overlooked if technological aids and solutions are not considered” (Vocational Evaluation and Work Adjustment Association, 2000, n. p.). Noll in 1993 stated “Finally, evaluators need to recognize the potential benefit for an evaluatee from the application of assistive technology and reflect the potential benefit of this application in their recommendations” (p. 27).

### Relevance of the Study

In 1996, intensive assessments were added to the menu of services at ATAC. Intensive assessments were designed to utilize assistive technology throughout the evaluation process to better serve and meet participant need. “Those who have integrated rehabilitation technology into the rehabilitation process have seen improved vocational rehabilitation employment outcomes for persons with severe disabilities (Ashley, J.M., & McGuire-Kuletz, M., 1999, 231).

“This process was developed to provide a more appropriate and empowering assessment for persons with the most severe disabilities in the vocational rehabilitation system...The goal of the program is give the best opportunity possible to persons with severe disabilities to prove themselves and demonstrate their abilities during the evaluation process. (Kaiser, J. & Noll, A., 1997, 16)

In February 2000, Commission on Accreditation of Rehabilitation Facilities (CARF) reviewed ATAC for accreditation purposes. One of their recommendations was to review case files in order to determine the quality of services provided at the Center. Intensive assessments were considered to be a new service at ATAC. By conducting this study, the researcher hoped to provide the Center with descriptive statistics about the

service that they were providing; therefore, assisting them in modifying this service.

“Because a formal vocational evaluation is provided to many participants, it would be useful for researchers to assess the value of the recommendations provided through those evaluations” (Caston, & Watson, 1990, n. p.).

## CHAPTER THREE

### Methodology

#### Introduction

This chapter described the subjects under study, how they were selected for inclusion, and the instruments used to collect information in regard to their content, validity, and reliability. Data collection and analysis procedures were presented. The chapter was concluded with a discussion about methodological limitations.

#### Description and Selection of Population

The population examined was individuals with severe disabilities who ranged in age from childhood to adulthood. The subjects in this study received ATAC services from 1996 to June of 2000. Referral sources for ATAC services included the Division of Vocational Rehabilitation, school districts, or families. Since 1996, 100 intensive assessments were conducted.

#### Specific Procedures

This study reviewed all 100 intensive assessment participant case files from 1996 to June of 2000 in order to determine the types of recommendations that were made by the evaluation team. An inclusive list of all intensive assessment case files was compiled from the Stout Vocational Rehabilitation Institute database for this study.

#### Instrumentation

A checklist was created for this study by the researcher as a form to collect standard case file information. Data was gathered to answer the following questions:

1. What are the demographic characteristics of the population being served?
2. What types of assistive technology recommendations were made?

### 3. What types of vocational recommendations were made?

Intensive assessment case files were reviewed to determine age, gender, type of disability, and the documented presence of a secondary disability. Recommendations were classified into the broad categories of vocational, technological, or general. Vocational evaluation recommendations were broken into categories based on the level of employment and education. Education category choices were two-year, four-year, or General Equivalency Diploma/Adult Basic Education. Employment categories were broken down into home-based enterprises, on-the-job training, return to work, supported employment, and placement. Work experience, evaluation incomplete, and no employment feasible were also under this category heading. Assistive technology recommendations were categorized as: mobility, computer access, augmentative communication, workstation design, transportation, augmentative communication, independent living/activities of daily living, and other. A general category heading was developed for social/recreational and medical recommendations.

An “other” category was created under all three broad recommendation categories. This was done in order to record information that did not fall under the specific recommendation categories. For example, recommendations made for the participant to continue with therapy or to obtain a benefit consultation, were placed in the “other” category. By examining this data, ATAC had a clearer picture of the types of recommendations they were providing and the demographics of the population being served.



### Data Collection

Recommendations made were typically written in narrative form and were placed in the participant's case file. For the purposes of this study, each intensive assessment case file was reviewed to determine demographic information and the types of vocational and technological recommendations. The review was conducted during the fall of 2000.

### Data Analysis

This descriptive study interpreted and reported the data in percentages and frequencies.

### Limitations

This study assumed that the case files would have complete information and that all case files would be available.

## CHAPTER FOUR

### Results and Discussion

#### Introduction

This chapter presented the results of the study. Data collected on each of the research questions was presented, and descriptive statistics were reported.

#### Research Question One

What are the demographic characteristics of the population being served?

Demographic results were reported in Table 4.1. They indicated that the majority of the population being served was of working age. Also, the majority of the population was individuals with physical disabilities. Examples of disabilities that were placed in this category were paraplegia, quadriplegia, and cerebral palsy. Twice as many males as females received intensive assessments. Thirty-five case files documented the presence of a secondary disability.

#### Research Question Two

Assistive technology recommendation patterns for this population are reported in Table 4.2. Mobility recommendations were made almost three times as often than transportation recommendations. Also, for this population the team determined that independent living/activities of daily living needs were of importance for two-thirds of the individuals with severe disability. Independent living skills are for skills such as self-care, grooming, dressing and cooking. Specific workstations and/or designs were considered to be of benefit for over half of this population. This pattern correlated with mobility concerns in the employment setting. A workstation design was recommended in order to assist consumer in being more efficient and effective in the work environment.

Table 4.1

## Population Demographics

Demographic Variable	Number	Percent
Age		
0 – 05	0	0%
06 – 12	0	0%
13 – 20	45	45%
21 – 54	54	54%
55 +	1	1%
Gender		
Male	65	65%
Female	35	35%
Type of Disability		
Physical	54	54%
Dual Diagnosis	19	19%
Acquired Brain Injury	19	19%
Developmental	4	4%
Mental Illness	3	3%
Other	3	3%

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Number is the total number of consumers out of the population of 100.

Table 4.2

Assistive Technology  
Recommendations

Category Variable	Number	Percent
Other	76	76%
Computer Access	74	74%
Mobility	66	66%
Independent Living	66	66%
Workstation Design	57	57%
Transportation	23	23%
Augmentative Communication	14	14%

Number is the total number of consumers out of the population of 100.

### Research Question Three

Of the vocational recommendations (see Table 4.3), work experience was advised for the majority of participants, before school or job placement. Of the recommendations for a specific type of employment, the most frequent was supported employment. On-the-job training was second. Of school related recommendations General Equivalency Diploma/Adult Basic Education was most frequent.

A general category was developed in order to present information that did not fall into a vocational or technological category. Social/recreational activities were recommended for 45% of the participants. Thirty case files had recommendations for medical concerns.

The “other” category was utilized only if the recommendation did not fit under the headings of recreational/social and medical. Services that fell in the “other” category were the most frequent recommendation made for both assistive technology and vocational categories. Recommendations recorded as “other” were recommendations that did not fall under any specific vocational or assistive technology category. For example, recommendations made for the participant to continue with therapy or to obtain a benefit consultation were placed in the “other” category.

When looking at the category results for technology and vocational recommendations, the assistive technology recommendations were more frequently recommended than vocational recommendations. Technological categories such as computer access (74%), mobility (74%), independent living (66%), and workstation design (57%) were all recommended more frequently than the highest recommended vocational category, work experience (53%).

Table 4.3

## Vocational Recommendations

Category Variable	Number	Percent
Other	76	76%
Work Experience	53	53%
Supported Employment	30	30%
GED/ABE	27	27%
Two Year School	23	23%
High School	22	22%
On-the-Job Training	17	17%
Four Year School	13	13%
Home Based Enterprise	7	7%
Job Placement	6	6%
Return to Work	5	5%
No Employment Feasible	1	1%
Evaluation Incomplete	0	0%

Number is the total number of consumers out of the population of 100.

### Summary

The majority of consumers receiving intensive assessment services were males between the ages of 21 –54 years of age with a physical disability. The most frequent assistive technology recommendation was for computer access (74%). Fifty-three percent of vocational recommendations were for the consumer to obtain work experience before receiving training and/or higher education. The evaluation team recommended that 45% of the consumers receiving an evaluation would benefit from social/recreational activities.

## CHAPTER FIVE

### Discussion, Conclusions, and Recommendations

#### Introduction

This chapter discussed the results of the study and conclusions were drawn from the statistical results. It concluded by providing recommendations for further research.

#### Discussion

The 1990's brought change to the field of rehabilitation via two pieces of legislation. The first, Americans with Disabilities Act in 1990, added reasonable accommodation to the forefront of service delivery and employment. Two years later, the Rehabilitation Act Amendments of 1992 directed the provision of services to individuals with the most severe disabilities as being first priority. "With increased emphasis on screening individuals with severe disability, comprehensive assessment such as vocational evaluation functions as a critical entry point into the rehabilitative process where the need for rehabilitation technology should be identified" (Langton & Lown, 1995, p.24).

Professional organizations also developed recommendations about the use of assistive technology in vocational evaluations. The Vocational Evaluation and Work Adjustment Association's position paper says, "Legislation has clearly stated that assistive technology (AT) considerations should occur throughout the rehabilitation process including services related to vocational evaluation, assessment, and work adjustment" (2000, n.p.).

This study reviewed the entire population of intensive assessment participant case files during the fall of 2000. A checklist was created solely for this study. Intensive



assessments were a relatively new service; therefore, a critique of the case files was of benefit to ATAC. The purpose of this study was to determine demographic information and recommendation patterns made from 1996 to June of 2000. This research examined three questions.

What were the demographic characteristics of the population being served?

What types of assistive technology recommendations were made?

What types of vocational recommendations were made?

### Conclusions

Results indicated that the most frequent age range of participants was 21 to 54 years of age, which was to be expected given the population being served was referred from vocational programs like the Division of Vocational Rehabilitation. The majority of the population was males and individuals with physical disabilities. As reported earlier, the US Bureau of the Census reported approximately 54 million non-institutionalized Americans had physical, intellectual, or psychiatric disabilities. Twenty-six million of this population was classified as having severe disability (Hernandez, B., et al., 2000, p. 4).

The most frequently occurring assistive technology recommendation was for services in the “other” category. Examples of recommendations that fell in this category were for things such as continuation of therapy and a benefits consultation fell into this category. Computer access was the second highest recommendation. For 74% of this population, the assessment team felt that modification of computer access would be of benefit. Independent living considerations and mobility issues were deemed to be of greater necessity for 66% of this population. These recommendations occurred more frequently than transportation. This recommendation pattern found would lead one to

believe that transportation needs are not as important for most of this population as mobility. Transportation considerations were recommended for only 23%. When thinking about obtaining and keeping employment, it is surprising that adapted transportation recommendations were not made more frequently.

Once again, the most frequently made evaluation recommendation fell in the “other” category. Recommendations that were placed in this category were for things like a benefits consultation. For the majority of this population, recommendations were made to obtain work experience before any other vocational option. Perhaps, this pattern occurred due to a lack of exposure to work for persons with severe disabilities. Most individuals gain work experience as teenagers; however, this type of physically oriented work may be difficult for a person with a severe disability to obtain. Without this experience, the consumer was considered to have limited knowledge about preferences for things like environment and physical or non-physical labor, and therefore, it was considered to be a limitation when assessing employability. Supported employment was recommended for approximately 30% of the population. This option was considered as a way to provide the individual with both a job coach and natural supports. The individual with disability was assisted in working through problems and concerns related to work.

Educational recommendations were made for close to a quarter of the participants. Adult basic education was the most frequent recommendation made. Two-year training programs were recommended more frequently than four-year programs. This outcome correlated with the recommendation for work experience. When an individual was uncertain about a career, then a two-year program was considered less expensive than a four-year school, especially if the vocational goal were to change. Also, two-year

programs offered courses that are hands on due to their technical nature. Courses were also offered more frequently and this may be a factor that allowed for greater flexibility in taking courses. On-the-job training was recommended for 17% of the population, which would also correlate with work experience being considered the best option for vocational outcome. A small percentage of the population was deemed ready for placement and/or to return to work. Given the factors already discussed, it was assumed that these individuals might have already been in the work force before acquiring a disability.

Evaluation recommendation patterns tended to be for options that would allow the individual with disability to explore the world of work in an experiential manner. For example, work experience recommendations allowed the consumer to job shadow people already in the field doing the particular job that was of interest. Job shadowing experiences provided the individual with disability to see the work environment and job duties. A two-year technical program was also considered as a way to allow the consumer a hands-on experience doing the specific, essential functions of a job.

Out of all the categories, “other” had the most frequent results. Therefore, this population needed assistance with skills and abilities that fall outside of education, training, or employment. As reported earlier, this category was developed in order to record recommendations that did not fall under any of the specific recommendation categories. Items placed in the “other” category were for things such as to continue therapy and to obtain a benefit consultation.

Given the results of this study, one was led to believe that in order to obtain accurate information assistive technology must be considered throughout the vocational

assessment. Intensive assessments were considered to be a service for individuals with the most severe disabilities; therefore, the sample of ATAC participants with severe disabilities could be seen as a sample of the entire population. With this in mind, ATAC recommendations may be considered applicable to the larger population of persons with severe disabilities. The results of this study led this researcher to conclude that this population has a great need to have the technological piece of the puzzle in place as well as the vocational piece. Without the technological piece throughout the assessment, the vocational evaluation recommendations could be inaccurate for an individual with severe disability because the evaluation team would not be getting accurate information about the consumer's skills and abilities. Recommendation patterns were determined to be for things such as experiential learning and discovery. Without technology and experiential learning experiences, this population will have a more difficult time finding their niche in the world of work.

### Recommendations

The results of this study and professional organizations support the utilization of assistive technology throughout the evaluation process. Therefore, assistive technology needs to be implemented into rehabilitation training programs at not only the post-secondary level but also the professional level as well. Professional organizations and accrediting agencies could also require knowledge and/or implementation of assistive technology into their requirements. State agencies could provide in-service training in order to increase the knowledge base of rehabilitation professionals who have been in the field for an extended period of time.

The results also indicate a need for individuals with severe disabilities to have the opportunity to experience the world of work and careers of interest before selecting a career. High schools are federally mandated to have a transition plan in place and can assist individuals with severe disabilities by implementing this idea into their curriculums. Another idea would be for students and/or individuals with severe disabilities to have internships for an extended period of time. This experience would provide the individuals with disabilities the chance to experience a specific job in the actual work environment.

The field of vocational evaluation needs to integrate assistive technology into the services that they are providing, especially for individuals with severe disabilities. The intensive assessments done at ATAC are assumed to be a unique service that is not provided by many vendors. Since not only professional literature and organizations support this need and the results of this study correlate with this information, this researcher feels that more evaluation vendors should address this need and determine an effective way to integrate vocational evaluation and assistive technology into one service. By implementing this service, vendors will better meet the needs of individuals with severe disabilities and obtain more accurate results and positive outcomes for the consumers that they are serving.

#### Recommendations for further research

Categories should have been broken down further in order to provide more specific information. For example, the age ranges could have been broken down into age groupings of every five years. The same idea could work for disability type. Presently, the reader knows that the majority of ATAC consumers have a physical disability, but

one does not know if the individual had quadriplegia, paraplegia, cerebral palsy, multiple sclerosis or some other type of physical disability. That information could be of even more benefit for ATAC staff.

In the future, research could be done to determine to what degree recommendations were implemented into the individual's vocational plan and life. By doing this, ATAC staff would be able to determine the appropriateness and feasibility of their recommendations. This study could also look at the placement outcome for each individual, did the rehabilitation professional and client head in a completely different direction than the assessment team recommended?

A correlation study could also be done to determine if there is a recommendation pattern between gender and recommended vocational outcome or between disability type and vocational outcome. This type of study could also determine what type of employment setting was recommended. What percentage of recommendations was for sedentary, light, moderate, or heavy work?

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## APPENDIX A

Client Number \_\_\_\_\_

**Primary Disability**☐ Persons with acquired brain injury☐ Persons with mental illness☐ Persons with alcohol and other drug problems☐ Persons with physical disabilities☐ Persons with developmental disabilities☐ Persons with visual impairments☐ Persons with dual diagnosis☐ Others☐ Persons with hearing impairments**Presence of Secondary Disability**☐ Yes☐ No**Gender**☐ female☐ male**Age Demographics**☐ 12-20☐ 21-54☐ 55+ Older adults**Vocational Evaluation Recommendations**☐ School/ high school☐ two year☐ four year☐ GED/ABE☐ Work Experience Program☐ Home Based Enterprises☐ On-the-Job Training☐ Other☐ Return to Work☐ Job Placement☐ No Employment Feasible☐ Supported Employment☐ Evaluation Incomplete**Assistive Technology Recommendations**☐ Transportation☐ Computer access☐ Augmentative Communication☐ Workstation Design☐ Mobility☐ Other☐ Independent Living/ADL**General Recommendations**☐ Medical☐ Recreational/Social Activities☐ Other