

Vocational Evaluation and Employment Outcomes

by

Joel Willis

A dissertation submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy

Auburn, Alabama
August 4, 2012

Keywords: Disabilities, Rehabilitation, Employment

Copyright 2012 by Joel Willis

Approved by

Randall S. McDaniel, Chair, Wayne T. Smith Distinguished Professor Emeritus of Special
Education, Rehabilitation, and Counseling

Margaret E. Shippen, Associate Professor of Special Education, Rehabilitation, and Counseling

Marie F. Kraska, M. C. Fraley Distinguished Professor of Educational Foundations, Leadership
and Technology

Rebecca C. Curtis, Associate Professor of Special Education, Rehabilitation, and Counseling

Abstract

Despite its apparent important function in the vocational rehabilitation process, results from outcome studies continue to raise questions as to the validity of the claims that vocational evaluation improves employment outcomes among those who use vocational rehabilitation services. The purpose of this study was to ascertain the extent to which vocational evaluation recommendations correlate with successful employment outcomes of those receiving services through the Alabama Department of Rehabilitation Services. Participants for the study included 400 randomly selected, closed cases from 2009 and 2010. Descriptive statistics were used to determine congruence between vocational evaluation recommendations, individual plan for employment goals, and employment outcomes. Logistic regression procedures were used to determine which demographic variable(s) best predicts congruence.

Acknowledgments

I extend my appreciation to my committee: Dr. Randall McDaniel, Dr. Margaret Shippen, Dr. Marie Kraska, and Dr. Rebecca Curtis. Your support has been instrumental in my success at Auburn University.

Many thanks are in order for Dr. Carry Boswell, Commissioner of the Alabama Department of Rehabilitation Services, whose support was paramount to the success of this project; Jim Harris III, Assistant Commissioner of the Alabama Department of Rehabilitation Services, whose knowledge and experience in the field of vocational rehabilitation was invaluable; and Mr. Clay Weaver, IT Manager of the Alabama Department of Rehabilitation Services, whose knowledge and expertise in data management added much to the validity of this project.

I give special thanks to my dear friends Vanessa Hinton and Dawn Browning, both of whom have been excellent sounding boards for my ideas, proof-readers for my manuscripts, and advisors. They have been a source of affirmation, encouragement, and support during my time at Auburn.

Most importantly I thank my wife and best friend of thirty-five years, Cheryl, whose faith in my ability to succeed has helped me through many discouraging times. Her continued encouragement and support has given me the confidence, desire, and drive to achieve personal and professional success.

Table of Contents

Abstract.....	ii
Acknowledgments	iii
List of Tables	vii
Chapter I. Introduction.....	1
The Problem.....	5
Purpose of the Study	5
Research Questions.....	6
Definition of Terms.....	7
Limitations of the Study.....	9
Summary	9
Chapter II. A Review of Related Literature.....	11
Vocational Rehabilitation Process	12
Role of the Vocational Rehabilitation Counselor	17
Individual Plan for Employment (IPE).....	19
Vocational Evaluation.....	22
Vocational Evaluation Defined.....	22
Vocational Evaluation Process	25
Vocational Evaluation as a Profession.....	27
Vocational Evaluator Certification	28

Vocational Evaluator Role and Function	31
Legislation.....	35
Vocational Evaluation Techniques	37
Interviewing	37
Psychometric Testing.....	38
Situational Assessment	38
Work Samples.....	41
Job Site Evaluation/Job Tryouts	42
Review of Relevant Research.....	44
Review of Relevant Studies	46
Summary of Limitations	58
Chapter III. Vocational Evaluation: The Impact on Employment Outcomes.....	61
Statement of the Problem.....	64
Purpose of the Study	65
Methods and Procedures	67
Sample.....	67
Procedures.....	69
Data Preparation.....	70
Data Analysis	73
Results.....	74
Conclusion	83
Discussion.....	84
Overall Congruence	86

Congruence VER, IPE, and EO	87
Congruence VER and IPE	91
Congruence VER and EO	94
Congruence IPE and EO	96
Summary	97
Binary Regression Results	98
Limitation.....	100
Recommendations.....	101
Chapter IV. Conclusion	103
References.....	107

List of Tables

Table 1.	Rehabilitation Legislation Amendments and Mandates	36
Table 2.	Threats to Internal and External Validity.....	59
Table 3.	Frequency of Age, Gender, and Race	69
Table 4.	Congruence	75
Table 5.	Percent of All Cases Correctly Classified.....	76
Table 6.	Regression Coefficients for Predictors	77
Table 7.	Percent of Cases Correctly Classified.....	78
Table 8.	Regression Coefficients for Predictors	79
Table 9.	Percent of Cases Correctly Classified.....	80
Table 10.	Regression Coefficients for Predictors	81
Table 11.	Percent of Cases Correctly Classified.....	82
Table 12.	Regression Coefficients for Predictors	83

CHAPTER I. INTRODUCTION

Despite major efforts by policy makers over the past 40 years to increase the employment opportunities for individuals with disabilities, a large portion of this population remains unemployed and/or underemployed when compared to the general population. History has shown that individuals with disabilities are underrepresented in the labor force, particularly in the primary labor market (Hagner, 2000; Unger, 2002; Wehman, Inge, Revell, & Brooke, 2007). According to Berger and Piore (1980) and Doeringer and Piore (1971), the work force is segmented or divided into a primary and a secondary labor market. Jobs found in the primary labor market are those jobs that offer (a) safer working conditions, (b) benefits, (c) better wages, and (d) better opportunities for advancement. Jobs in the secondary labor market offer little or no benefits; low wages; little chance for advancement; and in some cases poor working conditions (Berger & Piore, 1980; Doeringer & Piore, 1971, Hagner, 2000). Evidence of under representation in the primary labor market is addressed in a study by She and Livermore (2009), which indicated that of the working-age population living in poverty, a large and disproportionate number of those have disabilities with annual poverty rates being 2 to 5 times higher compared to their counterparts without disabilities (She & Livermore, 2009). Data from the Bureau of Labor Statistics, in a 2012 news release, indicated the unemployment rate for those with disabilities for the year 2011 was 13.5% while the unemployment rate for those without disabilities was 8.1%. When comparing the employment rates, the Bureau of Labor Statistics

indicated the employment rate among those with disabilities in 2011 was 17.9% while the rate for those without disabilities was 63.7% (U.S. Department of Labor, 2012). Additionally, data from the 2008 Current Population Survey indicates that of those with disabilities who are employed, only 27% worked full-time compared to 68% of those individuals without disabilities (U.S. Census Bureau, n.d.). According to Walls and Fullmer (1997), the top five occupations held by those individuals of all disability types achieving competitive employment through the state-federal vocational rehabilitation system were considered to be in the secondary labor market and included (a) janitorial work, (b) cook, (c) attendant, (d) porter/cleaner, and (e) kitchen worker. These occupations fall within the secondary labor market i.e., low paying, require few skills, and offer little or no benefits (Hagner, 2000: Walls & Fullmer, 1997).

One possible reason, according to Pruitt (1986), for the high unemployment/low employment rate among those with disabilities might be the significant attitudinal barriers by employers. However, results from research in the area of employer attitudes toward hiring those with disabilities vary somewhat (Dixon, Kruse, & Van Horn, 2003; Gilbride & Stensrud, 1993; Hernandez, Keys, & Balcazar, 2000; Stensrud, 2007). Dixon, Kruse and Van Horn (2003) in the *Work Trends Report: Restricted Access*, published by the John J. Heldrich Center for Workforce Development at Rutgers University, found that 17% of employers surveyed reported that the lack of skills and experience on the part of the job seeker were the greatest barriers to employment. However, 15% of employers surveyed reported a general reluctance to hire a worker with a disability regardless of experience.

In other related literature Stensrud (2007) found in his study on developing relationships with employers, that a lack of soft skills of applicants was a major theme discussed by employers for not hiring those with disabilities. In the work environment, employers define *soft skills* as

motivation, getting along with co-workers, accepting supervision, getting to work on time, attending work regularly, giving notice of nonattendance, showing enthusiasm for improving one's performance, and not expecting unreasonable accommodations. Hernandez, Keys, and Balcazar (2000) concluded that employers were willing to hire people with disabilities but that in practice little hiring actually occurred. Gilbride and Stensrud (1993) found that employers said they were willing to hire people with disabilities but were unable to recruit them. For many people, their careers begin by working in a series of different jobs, moving from one job to another until they find a job that seems to "fit". It is preferable that this self-discovery occurs early in life. Along the way it is understood that the "novice" employee will gain acceptable work habits including the necessary soft skills that will enable him/her to compete successfully in the current labor market (Institute of Rehabilitation Issues, 2003). According to Stensrud (2007), it is not always easy for those with disabilities to move from job to job in an effort to self-explore. Vocational evaluation is one means of exploration.

Vocational evaluation is a service within the vocational rehabilitation process that is often used to assist those with disabilities to shorten this process of job self-exploration. Vocational evaluation utilizes vocationally related tests, interviews, observations, work samples, and on-the-job tryouts in an effort to assist the vocational rehabilitation counselor and the person with a disability to determine their best job fit. Pruitt (1986) explained that those with disabilities and other disadvantaged individuals have typically been the primary consumers of the vocational evaluation process. Social/economic systems within society have erected both attitudinal and architectural barriers that prevent or make it difficult for this population to secure and maintain employment. Vocational evaluation is a means to increase an individual's chances of bypassing these barriers. Even with no social barriers to employment, Pruitt and others have expressed

their belief that decisions based upon vocational evaluations were far superior to trial and error methods for job selection or choosing a career (Institute of Rehabilitation Issues, 2003; Pruitt, 1986).

According to Jenkins, Patterson, and Szymanski (1992), the vocational rehabilitation process is “a comprehensive sequence of services, mutually planned by the consumer and rehabilitation counselor, to maximize employability, independence, integration, and participation of persons with disabilities in the work place and the community” (p. 2). In the mutual planning process, the counselor works collaboratively with the consumer in developing and individual plan for employment (IPE). The rehabilitation goals found in the IPE assist the consumer in determining the best job fit. One important component of the IPE is the comprehensive vocational evaluation.

Vocational evaluation, as a component of the vocational rehabilitation planning process, is critical for those with disabilities. The vocational evaluation was developed in response to an unfilled need to assess the vocational potential of individuals with disabilities by determining the capacity of the individual to successfully participate in the dynamic process that occurs between the person and the work environment (Brown, McDaniel, & King, 1995; Institute of Rehabilitation Issues, 2003; Nadolsky, 1983). The results obtained from a vocational evaluation are valuable in the vocational rehabilitation process. A vocational evaluation can assist the vocational rehabilitation counselor in building a strong foundation upon which a successful vocational rehabilitation plan can be developed.

In summary, in an effort to improve the chances of more successful employment outcomes, vocational rehabilitation counselors and consumers must work collaboratively in the development and implementation of a realistic plan for providing rehabilitation services (Jenkins,

Patterson, & Szymanski, 1992). An important component of the rehabilitation planning process is the recommendations found in the vocational evaluation report that is produced at the end of a comprehensive vocational assessment (Brown, McDaniel, & King, 1995). According to Pruitt and others, by incorporating vocation evaluation recommendations into the rehabilitation planning process, the chances of successful employment are increased (Institute of Rehabilitation Issues, 2003; Pruitt, 1986).

The Problem

Vocational evaluation is perceived as providing a critical component service in the overall vocational rehabilitation process by providing data to the rehabilitation counselor for establishing eligibility, designing a rehabilitation plan, and conducting appropriate job placement activities. Despite its apparent important function in the VR process, inconsistent results from outcome studies continue to raise questions as to the validity of the claims that vocational evaluation improves the employment and job retention among those who use VR services. Therefore, the importance of vocational evaluation in the rehabilitation process has yet to be fully explored in the rehabilitation research literature (Beveridge & Fabian, 2007; Brown, McDaniel, & King, 1995; Brown & Sink, 1986; Caston & Watson, 1990; Corthell & Griswold, 1987; Kosciulek, Prozonic, & Bell, 1995; Lee, Taylor, & Rubin, 1994; Peters, Scalia, & Fried, 1993).

Purpose of the Study

The focus of this study is to address inconsistent research findings related to vocational evaluation recommendations and their relationship to successful employment outcomes of individuals receiving vocational rehabilitation services. Past research has explored the influence of vocational evaluation on successful employment outcomes with some studies focusing on the

impact of the recommendations found in vocational evaluation reports on successful employment outcomes. Results from these studies vary, indicating a disconnect between vocational evaluations and successful employment outcomes (Beveridge & Fabian, 2007; Caston & Watson, 1990; Kosciulek, Prozonic, & Bell, 1995; Peters, Scalia, & Fried, 1993). The purpose of this study was to ascertain the extent to which vocational evaluation recommendations and vocational rehabilitation employment goals relate to successful employment outcomes of those receiving vocational rehabilitation services in the state of Alabama. In order to compare and analysis the impact on successful outcomes; vocational recommendations, employment goals, and employment outcomes were each translated into a six digit occupational code found in the Standard Occupational Classification (SOC) Manual.

Research Questions

In order to accomplish the purpose of this study, the following research questions were addressed:

Research Question 1: What is the relationship between (a) vocational evaluation recommendations, (b) individual plan for employment goals, and (c) employment outcomes?

Research Question 2: To what extent do the demographic variables of age, race, gender, and primary disability predict congruence between the (a) vocational evaluation recommendations, (b) individual plan for employment goals, and (c) employment outcomes?

This question generated the following Null Hypothesis:

H₀1: There is no relationship between vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) and (a) vocational evaluation recommendations, (b) individual plans for employment goals, or (c) employment outcomes.

Research Question 3: To what extent do the demographic variables of age, race, gender, and primary disability predict congruence between the vocational evaluation recommendations and individual plan for employment goals? This question generated the following Null Hypothesis:

H₀2: There is no relationship between vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) and vocational evaluation recommendations or individual plans for employment goals.

Research Question 4: To what extent do the demographic variables of age, race, gender, and primary disability predict congruence between vocational evaluation recommendations and employment outcomes? This question generated the following Null Hypothesis:

H₀3: There is no relationship between vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) and vocational evaluation recommendations or employment outcomes.

Research Question 5: To what extent do the demographic variables of age, race, gender, and primary disability predict congruence between individual plan for employment goals and employment outcomes? This question generated the following Null Hypothesis:

H₀4: There is no relationship between vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) and individual plans for employment goals or employment outcomes.

Definition of Terms

Congruence: Congruence is determined by a match of the first two digits in the 6 digit standard occupational classification code (SOC) across vocational evaluation recommendations, individual plans for employment goals, and employment outcomes.

Consumer: A qualified individual with a disability utilizing the services of a state vocational rehabilitation agency (Dowd, 1993).

Demographics: Consumer information including: age, race, gender, and primary disability.

Employment goals or Individualized plan for employment (IPE): Vocational placement possibilities developed collaboratively between the consumer and the vocational rehabilitation counselor (Test, Aspel, & Everson, 2006).

Employment outcome or successful vocational rehabilitation outcome: The successful placement of a consumer on a job for the required 90 day time period necessary to be considered closed rehabilitated.

Standard Occupational Classification: system used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data.

State agency vocational rehabilitation: A government funded agency within the state responsible for the oversight and administration of vocational rehabilitation services to qualified individuals.

Vocational evaluator: A qualified individual responsible for carrying out a vocational evaluation (Dowd, 1993).

Vocational evaluation: “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 with vocational development. Vocational evaluation incorporates medical, psychological, social, vocational, educational, cultural, and economic data into the process to attain the goals of evaluation.” (Dowd, 1993b, p. 28)

Vocational evaluation recommendation: Suggestions included within the written report to the referral agency in regard to future vocational placement possibilities.

Vocational rehabilitation counselor: A qualified individual working within a state vocational rehabilitation agency responsible for monitoring, arranging, and managing all facets of the vocational rehabilitation process for individuals with disabilities (Wright, 1980).

Vocational rehabilitation process: “a comprehensive sequence of services, mutually planned by the consumer and rehabilitation counselor, to maximize employability, independence, integration, and participation of persons with disabilities in the work place and the community” (Jenkins, Patterson, & Szymanski, 1992, p. 2).

Limitations of the Study

In studies addressing vocational evaluation as a function of employment outcomes in the vocational rehabilitation process, it is difficult to identify all the potential causes for the successes and failures. The problem with predicting employment outcomes therefore may include the inability to control for the many extraneous variables that exist. The results of this study may be impacted by an inability to control those variables. Limitations in this study include the use of data from only one state agency posing a threat to the external validity of this study. Other limitations include those variables that exist beyond the confines of the rehabilitation process such as (a) the geographic area of the consumer to the VE employment recommendations, (b) the current labor market, and (c) fluctuations in the economy.

Summary

In summary, one of the most fundamental questions asked over the past six decades concerning the vocational rehabilitation process has been “Which variables influence or predict successful employment outcomes for rehabilitation clients?” The rationale for this question and

line of research is to isolate the variables that determine successful outcomes in order to develop interventions that will increase the likelihood of success for consumers (Anthony, 1994; Bolton, 1979). Vocational evaluation serves as a critical component of the overall vocational rehabilitation process by providing data to the rehabilitation counselor for establishing eligibility, designing a rehabilitation plan (i.e., the IPE), and conducting appropriate job placement activities. Despite its important function as an integral part to the VR process, results from outcome studies to date continue to raise questions as to the importance of vocational evaluation as a tool in employment and job retention among those who use VR services (e.g. a wide variance in results between studies) due to the inconsistent results of those studies. With difference in outcome results, professionals in the field share their uncertainty concerning the importance of vocational evaluation in the rehabilitation process (Beveridge & Fabian, 2007; Brown, McDaniel, & King, 1995; Brown & Sink, 1986; Caston & Watson, 1990; Corthell & Griswold, 1987; Kosciulek, Prozonic, & Bell, 1995; Lee, Taylor, & Rubin, 1994; Peters, Scalia, & Fried, 1993).

The following chapter is a review of literature addressing (a) the vocational rehabilitation process, (b) the vocational evaluation process, and (c) a review of relevant research in the area of congruence between vocational evaluations and employment outcomes.

CHAPTER II. A REVIEW OF RELATED LITERATURE

By definition, vocational rehabilitation (VR) is concerned with rehabilitating people with disabilities for vocational activity. The main goal of VR is to deliver a rehabilitation service process that will maximize the probability of successful rehabilitation outcomes for those with disabilities. The main focus of this process has traditionally been employment in the competitive labor market (Bolton, Bellini, & Brookings, 2000; Wehman & Moon, 1988).

Bitter (1979) characterized vocational rehabilitation by three essential principles. First, VR supports equality of opportunity, particularly in the workplace. As such VR services are justified on the basis that these services will enhance the consumer's ability to experience the same opportunities for financial enrichment, career advancement, and self-enrichment that are available to the general population. Second, VR assumes a holistic approach to serving consumers. Effective rehabilitation requires that the whole person be served in a way that addresses all major facets of living. Third, all services are orientated toward individuality. This principle assumes services will be designed and provided on the basis of each consumer's unique needs.

As noted earlier, the goal of vocational rehabilitation is to maximize the probability of successful rehabilitation outcomes of those with disabilities. Although success may include independent living outcomes, the emphasis has traditionally been focused on employment in the competitive labor market (Bolton, 1987; Brabham, Mandeville, & Koch, 1998). The underlying

assumption is that greater personal independence and empowerment for those with disabilities are based on successful employment in the competitive labor market.

Vocational Rehabilitation Process

Vocational rehabilitation programs are supported by state and federal funds for the purpose of providing services to those with disabilities to help them enter or reenter competitive employment. The rehabilitation process is designed to assist individuals of working age with physical and or mental disabilities compete successfully with others in the labor market (Featherston, 2005). In past years, it was an accepted practice for the vocational rehabilitation counselor to provide services to their consumers including locating a job for them and “closing” their cases. However, contemporary concepts such as self-determination and empowerment dictate that counselors and consumers form an alliance and work together to prepare the consumer for long-term career development after VR services have been discontinued (Bolton, Bellini, & Brookings, 2000; Wehman, 1996).

The foundation on which vocational rehabilitation programs are built contains both vocational rehabilitation counseling and individualized consumer planning. The process involves a partnership between the consumer and the counselor, which is expressed in the 1998 amendments to the Rehabilitation Act of 1973 as part of the Workforce Investment Act (PL 105-220). Title I section 134 (d) (4) (F) of the Workforce Investment Act emphasizes consumer involvement and choice, reflecting the Rehabilitation Act amendment that renamed the individualized written rehabilitation plan (IWRP) to the individualized plan for employment (IPE) (Martin, 2001).

Section 103(a) in the Rehabilitation Act of 1973 lists the services to be provided under the Act and includes “any goods or services necessary to render a handicapped [*sic*] individual

employable". These services may include but are not limited to (a) evaluation of rehabilitation potential, (b) counseling, guidance, referral, and placement services, (c) vocational and other training services, and (d) physical and mental restoration services. According to Rubin and Roessler (2008), the mandates in section 103(a) of the Rehabilitation Act of 1973 are the basis for the vocational rehabilitation process.

The Rehabilitation Act of 1973 and its amendments are the guiding authority for state/federal vocational rehabilitation programs. The law is interpreted and administered by the Office of Special Education and Rehabilitation Services of the Department of Education through the Rehabilitation Services Administration (RSA) which promulgates among other things, eligibility standards, and services offered (Mandeville & Brabham, 1987). To facilitate the order and coordination of the vocational rehabilitation process, RSA has established a standard numerical coding system for use by state VR agencies. The RSA coding system makes it possible for state vocational rehabilitation agencies to report consumer progress through the VR process in a structured fashion through a series of steps identified by the numerical coding system using a series of two digit codes ranging from (00) indicating a referral to (34) indicating post-employment services. Although consumers are not required, and do not necessarily move through each step, the coding system helps chart their progress (Mandeville & Brabham, 1987; Rubin & Roessler, 1978).

Cassell and Mulkey (1985) along with Mandeville and Brabham (1987) describe the coding system established by the Rehabilitation Services Administration as follows:

Status 00, Referral. The entry point to the vocational rehabilitation process. A referral is any person who has applied for services or has contacted the VR agency (Mandeville & Brabham, 1987).

Status 02, Applicant. The person has signed required document(s) requesting services. The signed document signifies the beginning of the evaluation process to determine (a) eligibility (status 10), (b) ineligibility (status 08), or (c) the need for extended evaluation (status 06) (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 04, Order of Selection. States under an order of selection place consumers who are determined eligible and waiting. See description below.

Status 06, Extended Evaluation. Consumers in this status are provided certain services to help determine if the individual can benefit from vocational rehabilitation services (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 08, Closure from Applicant or Extended Evaluation status. Reasons might include, (a) unable to locate consumer, (b) disability too severe, (c) consumer refused future services, and (d) consumer transferred to another agency (Mandeville & Brabham, 1987).

Status 10, Plan Development. After eligibility is determined, collaboration between the counselor and consumer begins as they work together to develop an individualized plan for employment (IPE) (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 12, Plan Completed. The consumer is placed in status 12 after the IPE has been approved and before any services indicated in the IPE have been initiated (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 14, Counseling and Guidance Only. This status is only appropriate for those consumers with an IPE listing counseling, guidance, and placement as the only services required to prepare the consumer for employment (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 16, Physical and Mental Restoration. A consumer is placed in status 16 if s/he is receiving services such as medical, surgical, psychiatric, or therapeutic treatment, or being fitted for a prosthetic appliance. This person will remain in status 16 until the services are completed or terminated (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 18, Training. Training is provided in this status in the form of academic, business, or vocational training. Personal, social, and work adjustment training, as well as on-the-job training may be included (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 20, Ready for Employment. Consumers placed in this status have completed the requirements in one or more of the statuses above and are ready to begin the job-seeking process in collaboration with their counselor (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 22, In Employment. In this status, employment has been obtained. The consumer is observed a minimum of 60 [*sic*] days prior to being considered Closed Rehabilitated (status 26) (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 24, Services Interrupted. In the event that services are interrupted in status 14, 16, 18, or 20, consumers are placed in status 24. Reasons for interruptions must be due to consumer circumstances such as, inability to contact the consumer, consumer refusing services, consumer moving to another location outside the geographical area of the agency. Interruptions to services must not be due to agency or counselor problems (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 26, Closed Rehabilitated. Cases closed as rehabilitated must meet the following requirements: (a) consumer determined eligible for services, (b) consumer received appropriate diagnosis and related services, (c) consumer has a completed rehabilitation plan formulated, (d) the consumer has completed the program insofar as possible, (e) the consumer has received counseling as an essential rehabilitation service, and (f) the consumer has been determined suitably employed for a minimum of 60 [*sic*] days (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 28, Closed for other reasons after individualized plan for employment (IPE) has been initiated. Cases closed in this status must have previously been in status 14, 16, 18, 20, 22, or 24. Consumers must also meet the following criteria (a) declared eligible, (b) received appropriate diagnosis and services, (c) have an IPE completed and initiated but for some reason not completed. Reasons for status 28 closures are the same as for status 08 (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 30, Closed for other reasons before individualized plan for employment (IPE) has been initiated. Cases closed in this status are those that were accepted for rehabilitation services but never progressed to the point where services were initiated under the IPE. Reasons for this are the same as for those in statue 08 (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 32, Postemployment Services. Under this status, all requirements have been met for Closed Rehabilitated (statue 26), but short-term services are required in order for the consumer to maintain employment. These services may include temporary transportation, appropriate clothing, or minor skills training (Cassell & Mulkey, 1985; Mandeville & Brabham, 1987).

Status 34, Closed from Postemployment Services. Cases are placed in status 34 upon completion of postemployment services (status 32) (Mandeville & Brabham, 1987).

States unable to provide services to all eligible individuals with disabilities who apply for the services must implement an order of selection (Rehabilitation Act sec 101(a)(5)). Order of selection is a mandate that places a priority on services to individuals with the most severe disabilities. Agencies working in states under an order of selection may add Eligible Waiting (status 04) to their case status codes (Iowa Vocational rehabilitation Services, 2010; Missouri's Division of Vocational Rehabilitation, 2005; North Carolina Division of Services for the Blind, 2008).

Role of the Vocational Rehabilitation Counselor

Rehabilitation counselors represent a critical link in the rehabilitation process by serving as the liaison between consumers and the rehabilitation system. They are responsible for monitoring, arranging, and managing all facets of the rehabilitation process (Wright, 1980).

Vocational rehabilitation counselors are involved in all aspects of the rehabilitation process, from the intake interview to case closure on an individual basis. The specific functions they perform depend upon the specific needs of the consumer, the nature and demands of the agency for which they are employed, and the requirements of the community (Rigger, Maki, & Wolf, 1986).

Due to their broad function within the rehabilitation process, the role and function of the vocational counselor has been difficult to define. There are several competing, but not necessarily mutually exclusive ideas about what roles and functions rehabilitation counselors should assume. In 1969, Muthard and Salomone conducted the first systematic investigation of rehabilitation counselors' work activities. They found eight major activities that characterized the counselor's role and noted a high degree of importance attached to three of these activities,

which are counseling, vocational counseling, and placement duties. In this survey, rehabilitation counselors estimated that their time was divided equally into thirds with one-third devoted to counseling and guidance; one-third to clerical work, planning, recording, and placement; and one-third to professional growth, public relations, reporting, resource development, travel, and supervisory administrative duties (Muthard & Salomone, 1969).

Whitehouse (1975) viewed the vocational rehabilitation counselor as a service provider who works with the whole person. He posits a rehabilitation counselor must have multiple behavioral competencies as well as a comprehensive knowledge base. Whitehouse considered the rehabilitation counselor as a professional with a skills set that would include (a) therapist, (b) guidance counselor, (c) case manager, (d) case coordinator, (e) psychometrician, (f) clinical life reviewer, (g) vocational evaluator, (h) educator, (i) team member, (j) a social and family relator, (k) placement counselor, (l) community and client advocate, (m) life engagement counselor, (n) long-term conservator, and (o) clinician. Chubon (1992) supported Whitehouse's view and described the role of the rehabilitation counselor as one of a mediator, a professional whose multiple roles are used to help those with disabilities achieve the "best fit" with their environment.

More recent research conducted by Leahy, Chan, and Saunders (2003) examined the factor structure underlying major functions and knowledge domains essential to the practice of rehabilitation counseling. In this study Leahy, Chan, and Saunders identified seven major job functions and six knowledge domains. The job functions identified includes (a) vocational counseling and consultation, (b) counseling intervention, (c) community-based rehabilitation service, (d) case management, (e) applied research, (f) assessment, and (g) professional advocacy. Knowledge domains identified includes (a) career counseling, assessment, and

consultation services; (b) counseling theories, techniques, and applications; (c) rehabilitation services and resources; (d) case and caseload management; (e) health care and disability systems; and (f) medical, functional, and environmental implications of disability.

“The Rehabilitation counselor is expected to be a competent case manager as well as a skilled therapeutic counselor” (Cook, Bolton, Bellini, & Neath, 1997, p. 193). Rehabilitation counseling is a multidimensional task where success is dependent on many things including a collaborative planning effort between the counselor and the consumer in the development of the individualized plan for employment (IPE).

Individual Plan for Employment (IPE)

Although the federal vocational rehabilitation services program was established in 1917, it was not until the 1990s that consumer choice and self-determination in the VR process were mandated through federal authorizing legislation (Beveridge & Fabian, 2007). The Rehabilitation Act Amendments of 1992 specifically mandated that consumers be involved in the identification and selection of vocational goals. This requirement was echoed in the 1998 amendments to the Rehabilitation Act of 1973 as part of the Workforce Investment Act. The Rehabilitation Services Administration reiterated the concept of informed choice in their policy directive RSA-PD-01-03, (2001) which stated that the state VR program must be carried out in a manner consistent with the following principle:

Individuals who are applicants for such programs or eligible to participate in such programs must be active and full partners in the vocational rehabilitation process, making meaningful and informed choices--(i) during assessments for determining eligibility and vocational rehabilitation needs; and (ii) in the selection of employment outcomes for

individuals, services needed to achieve the outcomes, entities providing such services, and the methods used to secure such services. (p. 1)

A driving force behind changes in legislation emphasizing consumer choice in the vocational rehabilitation process came from the Disability Rights Movement that was made up of organized groups of persons with disabilities demanding equal participation in the VR process (Capella, 2002). The Disability Rights Movement began on the University of California Berkeley campus in 1975 with Edward Roberts, the first person with a severe disability to live on campus as a student. Berkeley is recognized as a pioneer in the movement by persons with disabilities for legally defined rights and control over their own lives. The American Coalition of Citizens with Disabilities (ACCD), the first cross-disability consumer advocacy organization, under the leadership of Dr. Frank Bowe was responsible for securing the implementation of Section 504 four years after passage of the Rehabilitation Act of 1973. The success of ACCD and Dr. Bowe earned him the title of “Father of Section 504” (Barnartt & Scotch, 2001; Lynch, 2007; O’Hara, 2000).

The passage of the Vocational Rehabilitation Act of 1973 (PL 93-112) represented a major rewrite to the entire federal statute authorizing rehabilitation services. This act extended civil rights protection to people with disabilities by mandating equal opportunity (Section 503) and nondiscrimination (Section 504) in public workplaces and educational settings. The Act required the development of an individualized written rehabilitation plan (IWRP). The IWRP was required to include a statement of long-range rehabilitation goals, types of rehabilitation, dates of services to be provided, and evaluation procedures. This mandate represented a significant breakthrough in the delivery of more appropriate services (Heward, 2003; Sitlington, Clark, & Kolstoe, 2000; Wehman & Moon, 1988). According to Roessler and Rubin (1982), the

IWRP must include (a) the rehabilitation goal and intermediate rehabilitation objectives, (b) vocational rehabilitation services, (c) projected date of initiating services and the anticipated duration of services, (d) objective criteria, evaluation procedures, and schedules for determining whether the rehabilitation goal and intermediate objectives are being achieved, and (e) explanation of availability of a client assistance project.

The requirement of individualized written rehabilitation plans (IWRP) had a significant effect on the evolution of rehabilitative services for three essential reasons, (a) it provided some degree of accountability for evaluating the services provided to an individual, (b) it reoriented the direction of service delivery so that the consumer became a “team member” in the rehabilitation planning and delivery process with specific procedural rights and responsibilities, and (c) the IWRP was representative of a basic philosophical shift from a medical to an educational service orientation (Wehman & Moon, 1988). Amendments to the Rehabilitation Act in 1998 were included in workforce development legislation, i.e. Workforce Investment Act of 1998. This legislation signaled the integration of employment and training programs at the local, state, and federal levels. Amendments in Title IV of the Rehabilitation Act reinforced the idea of the “presumption of benefit”. Title IV also empowered individuals with disabilities by emphasizing “informed choice” throughout the vocational rehabilitation process. The amendments also renamed the individualized written rehabilitation program (IWRP) to the individualized plan for employment (IPE) in order to emphasize the expanded role of the consumer in the rehabilitation process, e.g., informed choice (Martin, 2001; Test, Aspel, & Everson, 2006).

Section 361.45 of the Code of Federal Regulations describes the requirements for the development of the individualized plan for employment (IPE). Under sub-section (b) number

(1), the regulation states that, “The designated state unit must conduct an assessment for determining vocational rehabilitation needs.” (p. 268). Subsection (b) number (2) states that once the assessment is completed, “The IPE must be designed to achieve the specific employment outcome ... that is selected by the individual consistent with the individual’s unique strengths, resources, priorities, concerns, abilities, capabilities, interests, and informed choice” (34 CFR 361.45, p. 268).

In summary, vocational rehabilitation is viewed as a process of restoration that assists an individual toward goals that foster independence and personal satisfaction. The aim of rehabilitation is to reduce the disabling conditions that restrict activities in daily life and help an individual participate in the general community (Power, 1991). Rehabilitation may also be viewed as a process of restoring a deficit in skills including physical, emotional, and intellectual skills needed to live, learn and work in the individual’s particular community (Anthony, 1980). As an integral component of vocational rehabilitation, vocational evaluation reaches out to involve the consumer in the overall process of rehabilitation, emphasizing what the person is capable of doing, rather than the extent of his/her limitations. Such involvement by the consumer fosters an attitude of confidence in their own ability to succeed (Power, 1984).

Vocational Evaluation

Pruitt (1986) noted that a distinguishing characteristic of the vocational evaluation process is the use of work (real or simulated) as a tool to evaluate the potential for work performance and work adjustment needs of the consumer. This characteristic is what differentiates this profession from other professional assessment disciplines. Pruitt also points out that although developed within, and still an integral part of the vocational rehabilitation

movement, the use of work (real or simulated) extends the practice of vocational evaluation beyond the boundaries of vocational rehabilitation.

Since first appearing in the professional literature in 1947, the practice of Vocational Evaluation (VE) has evolved into a distinct professional specialty (Shumate, Hamilton, & Fried, 2004; Thomas, 1996). During its 62-year history, the field of vocational evaluation has experienced periods of acceptance along with times of criticism. During times of acceptance, VE has been used as a critical component in the rehabilitation process to ensure consumer success. In periods of lesser acceptance, the process of vocational evaluation has been used as a screening tool to limit or deny services (Institute of Rehabilitation Issues, 2003).

Vocational Evaluation Defined

The Vocational Evaluation and Work Adjustment Association (VEWAA) is responsible for developing the currently accepted definition of *vocational evaluation* within the profession. This definition is contained in the VEWAA Glossary (Dowd, 1993b):

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 with vocational development. Vocational evaluation incorporates medical, psychological, social, vocational, educational, cultural, and economic data into the process to attain the goals of evaluation. (p. 28)

Another important term defined in the VEWAA Glossary (Dowd, 1993b) is *vocational assessment* (VA), which is defined as:

A comprehensive, informal process conducted over a period of time, usually involving a multidisciplinary team with the purpose of identifying individual characteristics, rehabilitation, education, training, and placement needs, serving as the basis for planning

an individual's rehabilitation, employment, career development, education, and /or transition program(s), and that provides the individual with insight into vocational and career potential (modified from McCray, 1982, for this publication). (p. 28)

Although these two terms, vocational evaluation (VE) and vocational assessment (VA) are often used interchangeably, vocational assessment, as noted, is a more informal, ongoing process conducted by all service providers as they make decisions through case management, service delivery, and the rehabilitation and education processes. When a vocational assessment reveals the need for more detailed and specific information, a formal, time-limited service such as a vocational evaluation can be incorporated into the ongoing vocational assessment (Institute of Rehabilitation Issues, 2003).

Vocational rehabilitation has been the driving force for changes in the vocational evaluation process. Due to changes within society (e.g., globalization, employment, diversity, and consumer demand) vocational rehabilitation, in order to serve consumers better, has evolved. Changes in regulations, populations, and service priorities have lead to changes in the way evaluation and assessment services are delivered (Institute of Rehabilitation Issues, 2003).

Vocational evaluation as a rehabilitation discipline was, in its formative years a service provided within rehabilitation facilities. It was perceived at that time as a service to assist vocational rehabilitation counselors and their consumers to determine an occupation, or job training area in which the consumer would most likely be successful (i.e., employed). This function of vocational evaluation services resulted from concern in vocational rehabilitation that money was being wasted training consumers in job areas in which they were never or rarely employed. The concerns were/are well founded considering that national economic and health care forces now exist in a climate of accountability. Services and programs funded by the

Rehabilitation Services Administration are required to demonstrate fiscal responsibility by accounting for each dollar spent within the context of consumer self-determination and empowerment (Brown, McDaniel, & King, 1995; Kosciulek, Prozonic, & Bell, 1995). As an integral part of the rehabilitation process, the vocational evaluation process is a key component to help ensure fiscal responsibility by determining the employment potential of consumers.

Vocational Evaluation Process

Power (1984) conceptualized vocational evaluation as a comprehensive, interdisciplinary process of evaluating a person's physical, mental, and emotional abilities, limitations, and tolerance in order to identify an optimal outcome for the person. It is a method of acquiring information in order to assist the consumer in identifying their functional competencies and limitations. Vocational evaluation assesses such factors as the consumer's vocational strengths and weaknesses, which are found in the areas of personality, aptitude, interest, work habits, physical tolerance, and dexterity (Power, 1984). Also used as a prognostic tool, vocational evaluation attempts to answer such questions as whether a consumer will be able to work, and what types of productive activity the person is capable of doing. Another added bonus of the evaluation process is the ability to identify those services needed to overcome discovered functional limitations that may be barriers to successful outcomes. Anthony (1980) stated that the evaluation process:

. . . yields information about the disabled [*sic*] client's level of skills and the skill demands of the community in which he or she wants or needs to function. This information enables the rehabilitation practitioner to work with the client to develop a treatment plan designed to increase the client's strengths and assets or to identify an environment more suitable to the client's functioning. (p. 9)

The vocational evaluation process is mainly one of diagnosis and prediction, assisting both the professional and the consumer in gaining the necessary information concerning promising directions for consumer development (Power 1991).

Roberts (1992) outlines specific information sought during the evaluation including (a) whether or not the person can fulfill a vocational role and at what level, (b) the impact of presenting disabilities upon the consumer's return to work, (c) any behaviors or emotional problems that may interfere with the person's ability to maintain work, (d) motivation toward work and rehabilitation, (e) additional medical or physical limitations, (f) whether or not the expressed job interests are realistic, and (g) the capacity for the consumer to benefit from a skills training program. Even though the evaluation report is considered the product of the vocational evaluation, the consumer's entire experience (specifically behavioral observations) should be taken into consideration, as this can provide a more detailed view of the whole person.

In the past the vocational evaluation focused less on consumer involvement and more on aptitude testing, job analysis, work sample techniques, and the systematic use of behavioral observation. Because of the complex interaction between the consumer and his/her environment, an effective rehabilitation program must incorporate vocational evaluations that are individually tailored to meet the specific need of each consumer. With amendments in 1992 and 1998 to the Rehabilitation Act along with mandates in the Workforce Investment Act of 1998 the field of vocational evaluation moved beyond a concentration on evaluation tools and techniques to the creation of flexible, consumer driven services based on informed consumer choice (Institute of Rehabilitation Issues, 2003; Neff, 1966, 1970).

In summary, the vocational evaluation process might be described as a flexible, diagnostic, and prognostic tool used by the VR counselors and the consumer to develop a plan

that will ensure the best possible vocational outcome. As a profession, vocational evaluation is a multidisciplinary field that includes elements from many other disciplines such as psychology, medicine, and occupational therapy.

Vocational Evaluation as a Profession

The field of vocational evaluation is essentially a more specialized concentration within the larger field of vocational rehabilitation. This specialty area combines elements of seemingly unrelated disciplines such as medicine, occupational therapy, and psychology, giving the profession of vocational evaluation the ability to evolve as a discipline separate from vocational rehabilitation (Pruitt, 1986).

Fry and Harrand, (1992) described vocational evaluation as a professional discipline with an accepted definition, standards for practice, common principles, a code of ethics, and a distinct body of knowledge. The vocational evaluator's job, as described by Fry and Harrand, is to analyze the skills and interests of their clients and match these skills to appropriate employment, training or educational opportunities. To accomplish this, the vocational evaluator calls upon a variety of assessment tasks designed to achieve a vocational prescription. The evaluator may (a) administer, score, and interpret psychometric tests and samples of work, (b) interview and counsel with clients regarding their work potentials, (c) recommend appropriate jobs or careers, and (d) analyze jobs in order to understand their requirements.

As in many professions, the concept of certification has been associated with quality of services, or protection for the public on the basis of professional ethics, service quality, or the assumed competency of the practitioner. The foundation for certification is built by utilizing a logical knowledge base comprised of factors including (a) a systematic body of knowledge, (b) professional authority, (c) community sanction based upon social values, (d) ethical codes, and

(e) professional culture (Brubaker, 1979). The assertion of occupational credibility professionally distinguishes status not only to members of society, but to other practitioners as well. By obtaining a higher level of professionalism, benefits such as greater legislative funding, increased professional marketing, and promotion of professional prestige ranking could ultimately enhance the availability of services for consumers (Saxton, Spitznagle, & Kennison, 1999).

Vocational Evaluator Certification

Vocational evaluation emerged as a specialty some 43 years after the concept of vocational rehabilitation was established. The purpose of this new discipline in rehabilitation was to better identify the barriers, needs and characteristics for persons with disabilities in an employment setting. Drawing from many other fields, vocational evaluation has become a process found effective in the vocational rehabilitation practice (Fry & Harrand, 1992).

In 1968, the non-profit organization Vocational Evaluation and Work Adjustment Association (VEWAA) was granted full status as a professional division of the National Rehabilitation Association (NRA) at the annual NRA conference (Davis, 1986). The purpose of the Association, as stated in Section II of its bylaws is to improve and advance the field of vocational evaluation and work adjustment training in accordance the Association's charter (Spitznagel, 1995). It was through the VEWAA organization that the Commission on Certification of Work Adjustment and Vocational Evaluation Specialists or CCWAVES was created in 1981. CCWAVES gave this newly developed discipline its professional code of ethics, practitioner certification, and professional standards for quality. The professional standards adopted by CCWAVES were in accordance with the 1977 national mandated standards established by the National Commission for Certifying Agencies (NCCA), a subgroup of the

National Organization for Competency Assurance (NOCA). These standards apply to all allied health fields, of which vocational evaluation is a part, and consist of 21 standards that fall under one of five categories, (a) purpose, governance, and resources, containing five standards; (b) responsibilities to stake holders, containing four standards; (c) assessment instruments for applicants, containing nine standards; (d) recertification, containing two standards; and (e) maintaining accreditation, containing one standard. In order for a program to maintain their accreditation by NCCA, the program must meet all standards mentioned along with supporting evidence (Joint Task Force on Alternative Certification, 2009).

CCWAVES served as the vocational evaluator certification entity from 1981 to 2008. On September 9, 2008, representatives of CCWAVES announced that they would dissolve the organization. As of September 2008 the Certified Vocational Evaluator (CVE) applications were suspended; maintenance of current CVEs was transferred in April of 2009 to the Commission on Rehabilitation Counselor Certification (CRCC) (Langton, 2010). In May of 2009 a collaborative effort was undertaken to address future credentialing needs. The Vocational Evaluation and Career Assessment Professionals (VECAP) and the Vocational Evaluation and Work Adjustment Association (VEWAA) commissioned a nine-member task force to explore options for an additional credential. The Joint Task Force on Alternative Certification was comprised of members representing both VEWAA and VECAP and was charged with the task of researching three specific issues including (a) how CVE got to its current status and the lessons learned; (b) what options are available to CVEs and those seeking certification; and (c) recommendations to VEWAA, VECAP and any other group requesting data on how to guide professionals seeking CEV certification (Joint Task Force on Alternative Certification, 2009).

According to the Joint Task Force on Alternative Certification's final report (2009), there were three specific reasons for the dissolution of CCWAVES. The first and most critical reason is that employers do not require certification for practice or for advancement. The CVE was "nice to have" but not a "need to have" designation. The second reason was that the CVE was too elite a credential, meaning it was not available to most. Without access to coursework and degree granting institutions, there was no avenue available to achieve the credential. The third reason was lack of funding. The education-based model of certification only works when funded fully in all dimensions. Government funding has been on the decline over the past three decades reducing the number programs from a high of 20 to less than 10 (Joint Task Force for Alternative Certification, 2009).

A result of the Joint Task Force on Alternative Certification's efforts was the creation of the Registry of Professional Vocational Evaluators (RPVE). According to their web site, <http://pvregistry.org/>, the RPVE provides, "... a credential for vocational evaluators who have demonstrated attainment of acceptable standard of education, experience, and knowledge." The credential for PVE is evaluated on the basis of degree earned and work experience in relevant domains.

In 2003, there was a split in the VEWAA organization. The individuals who left organized the Vocational Evaluation and Career Assessment Professional (VECAP). VECAP is a non-profit organization comprised of a membership of professionals who identify, guide, and support the efforts of professional as they seek to develop and realize training, education, and employment plans as they work to attain their career goals. According to Dr. Fran Smith, President of VECAP in their February 2010 newsletter,

VECAP has been supporting the professional interests of career assessment professionals since 2003. We broke away from our association at that time with VEWAA ... and forged a new direction that gave us a chance to broaden our appeal to those offering assessment services in various settings. (p. 1)

VECAP is not affiliated with the National Rehabilitation Association (NRA) or the NRA/VEWAA organization (Smith, 2010; VECAP, 2004).

In summary, Tony Langton VEWAA President (2010) stated that “Vocational evaluation is a valuable, unique service that has a long history of increasing the efficiency and effectiveness of services provided by programs and organizations by empowering persons with disabilities to aspire to their full potential” (p. 2). He emphasized that a collaborative effort is essential among professional organizations such as VEWAA, VECAP, and NRA in order to “meet the immediate and new challenges that lie ahead” (p. 2) (Langton, 2010).

Vocational Evaluator Role and Function

The role and function of vocational evaluators has developed and become increasingly well established. Vocational evaluators have been employed in various employment settings, thereby enabling them the opportunity to possess a unique set of knowledge, skills, and abilities used to serve a variety of clientele in diverse settings (Hamilton & Shumate, 2005; Institute of Rehabilitation Issues, 2003; Pruitt, 1986).

In the late 1950s, the field of vocational evaluation emerged with the purpose of better identifying the employment characteristics of individuals with disabilities and is now recognized as an important and critical part of the vocational rehabilitation process. By drawing from a knowledge pool comprised of the contributions of other disciplines, the evaluator is better able to assist the consumer in the vocational development process by (a) identifying goals consistent

with an individual's strengths and limitations, (b) locating resources, (c) helping to establish priorities, (d) addressing concerns, and (e) allowing the consumer to make informed choices about their educational and employment pursuits (Fry & Harrand, 1992).

Shortly after vocational evaluation began to emerge as a separate discipline, research efforts were initiated to identify specific skills, knowledge and assessment techniques used by vocational evaluators in the practice (Egerman & Gilbert, 1969; Nadolsky, 1971; Spieser, 1967). However, most research on the specific domains of knowledge, role, and function of the vocational evaluator has happened since the 1970s (Taylor, Bordieri, Crimando, & Janikowski, 1993). Pruitt (1986) posits that studies of this nature may lead the reader to conclude that there is little difference between the role and function of the vocational evaluator and the rehabilitation counselor. He explained that while there are basic core competencies shared by all rehabilitation professionals, the unique competencies of each specialty are probably greater than the shared competencies within each specialty. Sink and Porter (1978) however found that although many functions do overlap, there were sufficient differences in competency requirements to warrant two distinct roles in the rehabilitation process.

One of the initial efforts to define the core competencies of the vocational evaluator was conducted by Pruitt (1972) utilizing a task analysis approach to examine the role and function of 45 vocational evaluators. Results of the study identified 67 job tasks grouped into 7 major job function domains. The seven domains included (a) evaluation, (b) counseling and interviewing, (c) training, (d) administration, (e) occupational analysis, (f) communication and relating, and (g) research and development. Shortly thereafter a three-year study entitled the Vocational Evaluation Project (1973–1975) was conducted. The study was a jointly sponsored project by the Rehabilitation Services Administration (RSA), the National Rehabilitation Association

(NRA), and the Vocational Evaluation and Work Adjustment Association (VEWAA). Seven task forces were formed to explore and develop standards for work evaluation services. Confusion ensued as to the delineation of specific roles and functions of vocational evaluators, primarily due to the diversity of work settings and targeted clientele. The study concluded that there was "... lack of a clear conceptual ideological statement relative to the role and function of the evaluator" (VEWAA, 1975, p. 123).

In an effort to move the profession forward, the Commission of Certification of Work Adjustment and Vocational Evaluation Specialist (CCWAVES) periodically commissioned studies with the task of examining vocational evaluation. One main objective of these studies was to support the certification process by determining the role and function of vocational evaluators. The need to establish minimum competency standards is an important aspect of professional development. In order to more clearly identify the role and purpose of vocational evaluation, research identifying the need for standards and norms in the practice has been conducted.

Coffey (1978) conducted one of the earliest comprehensive surveys exploring the essential competencies of vocational evaluators. Coffey identified 175 different knowledge and ability areas, grouping them into nine different competencies which included (a) establishing vocational direction, (b) initial evaluation methods, (c) individual professional background, (d) being able to relate to other professional workers, (e) communication, (f) evaluation and generation of evaluation data, (g) adjustment, (h) referring and placing individuals, and (i) administration.

A nationwide study conducted by Taylor, Bordieri, and Lee (1993) revealed six general job function domains which included (a) vocational counseling, (b) behavioral observation, (c)

occupational development, (d) standardized assessment, (c) professionalism, and (f) case management. Another study by Newman, Waechter, Nolte, and Boyer-Stephens (1998) identified five general domains that included (a) competencies as a professional, (b) integrated tools and techniques, (c) proficiencies utilized in the vocational evaluation process, (d) identifying characteristics of consumers, and (e) knowledge of the world of work. A common component of these studies is the apparent need for professionalization through organized knowledge based on research.

In 2002 CCWAVES commissioned a study to investigate the current role and function of Certified Vocational Evaluation specialists (CVE) in North America in an effort to identify and validate the important job functions and knowledge domains relevant to vocational evaluation. In this study Hamilton and Shumate (2005) identified six major job functions and six major knowledge domains. The job functions included, in order of importance (a) professionalism, (b) clinical skills to analyze and synthesize, (c) vocational counseling, (d) occupational analysis, (e) case management, and (f) behavior observation and evaluation techniques. Knowledge domains included, in order of importance (a) communication, (b) standardized assessment, (c) implications of disability, (d) occupational information, (e) professional networking and coordination, and (f) foundations of vocational evaluation.

Over the years the role and function of vocational evaluators has evolved and become increasingly well established. Early studies identified core job functions that ranged from seven to nine factors (Coffey, 1978; Pruitt, 1972). More recent studies have consistently narrowed these factors to six that include (a) vocational counseling, (b) behavioral observation, (c) occupational development, (d) standardized assessment, (e) professionalism, and (f) case management (Hamilton & Shumate, 2005; Taylor, Bordieri, & Lee, 1993).

In summary, building on research efforts of the past 35 years, core competencies for the vocational evaluation profession have solidified confirming that vocational evaluation has evolved to a stable core of common skills and competencies required of all vocational evaluators.

Legislation

The 1980s were a critical period of time for the vocational evaluation profession. Federal legislation pushed for a team-centered approach model, providing the consumer with the collaboration of multiple service providers. Additionally, consumer advocacy and person-centered planning emerged as trends altering the way vocational assessments were performed. By obtaining medical information from various healthcare providers, important information pertaining to functional limitations, the nature of the disabling condition, and other valuable information could be used in program planning and other vocational implementation needs (O'Brien & O'Brien, 2000; Power, 2000).

In 1986, legislation was passed under the Vocational Rehabilitation Act Amendment (PL 99-506) stating that an initial diagnostic analysis was required in order to determine eligibility for rehabilitation services with the state/federal vocational rehabilitation system. In this case, vocational evaluation became a critical component of the vocational rehabilitation process. Not only could an evaluation be used to help determine initial eligibility for vocational rehabilitation services, but it could also be used as a diagnostic tool and help to establish direction for future services within the rehabilitation system (Corthell & Griswald, 1987).

The Americans with Disabilities Act, signed into law in 1990, helped define discrimination for persons with disabilities by expanding the definition to include barriers such as architectural, communication, and transportation. Additionally it created a mandate by which proposed methods to eliminate the identified forms of discrimination would take place. When

combined, the Americans with Disabilities Act and the 1992 amendments to the Rehabilitation Act of 1973 established new policies toward people with disabilities. Both pieces of legislation emphasized concepts such as consumer choice, empowerment of the individual, and consumer participation in the creation and implementation of a rehabilitation plan. As a result, state/federal agencies have become more accountable in their efforts to more effectively serve persons with disabilities (Kosciulek, Prozonic, & Bell, 1995). Table 1 has specific mandates and amendments.

Table 1

Rehabilitation Legislation Amendments and Mandates

Law	Year	Specific Mandates
Vocational Rehabilitation Act	1973	(a) Extended civil rights protection to individuals with disabilities through equal opportunity and nondiscrimination. (b) Required the development of the individualized written rehabilitation plan (IWRP) (c) Consumer choice
Amendment	1986	Supported Employment
Amendment	1992	Concept of “presumption of benefits”; all individuals could benefit from VR services
Amendment	1998	Reemphasized presumption of benefits and informed choice Promoted self-determination for students with disabilities Renamed the IWRP to the individualized plan for employment (IPE)
Americans with Disabilities Act	1990	Extended civil rights from the public sector to private sector employment and all public services, including transportation, public accommodations and telecommunications
	2008	Corrected the narrow definition of disabilities occurring through court interpretations

According to mandates in the 1986 amendments of the Rehabilitation Act and supported by mandates in the Americans with Disabilities Act that prohibits discrimination on the bases of a disability in both employment and public access; the use of vocational evaluation provided rehabilitation professionals with objective measures of performance, thus adding to the credibility and accountability required by law. With a greater focus on consumer choice, and legislation prohibiting discrimination in the workforce, the field of vocational evaluation requires evaluators who are both qualified and competent in established evaluation techniques.

Vocational Evaluation Techniques

Lesnik (1983) noted the most frequently utilized vocational evaluation techniques to be (a) interviewing, (b) psychometric testing, (c) work samples, (e) situational samples, (f) job site evaluation, and (g) job tryout. Evaluators will choose from the array of available techniques based on the consumer's readiness to participate in the approach, and the type of information needed requiring a response. It is often necessary to provide the proper blend of techniques in order to meet the varying readiness of individual participants and their variety of information needs (Lesnik, 1983).

Interviewing

An intake interview is required in all rehabilitation agencies (Power, 1984). Farley and Rubin (1982) defined the intake interview as a conversation between the counselor and the consumer with mutually acceptable purposes. The purpose of the interview may differ from consumer to consumer, but usually it (a) develops rapport between the professional and the consumer, (b) gives the consumer necessary information about the role and function of the agency, available services, and consumer responsibilities, (c) helps consumers to identify their own strengths and weaknesses, as well as to recognize and be aware of personality traits,

abilities, and aptitude that may facilitate achieving rehabilitation goals, (d) helps the consumer to feel more comfortable about the rehabilitation process and helps him or her to begin to gain a feeling of self-confidence, and (e) provides the counselor with beginning information for rehabilitation training intervention planning, and effective programming.

There are many ways to conduct an interview. Each method depends on the type of information to be gained, the circumstances in which it is to be obtained, and the individual conducting the interview. As mentioned earlier, rapport is very important in the interviewing process. A relationship must develop between the vocational professional and the consumer (Power, 1984).

Psychometric Testing

Psychometric testing has been used for many years in vocational evaluation as a means of identifying the employment training needs of those with disabilities. Verbal, nonverbal, and performance assessments are provided through standardized psychometric instruments. Many of these instruments such as intelligence, achievement, and aptitude tests have been used for vocational evaluation since World War I (Lesnik, 1983; Wehman & Moon, 1988).

According to Sherman and Robinson (1982), procedures for testing people with disabilities leave much to be desired. Even when assessment measures are appropriately modified, the meaning of the scores is uncertain. Even though psychometric tests have been widely used in education, special education and vocational evaluation there are major limitations of the instruments. Reasons for this, according to Hursh and Kerns (1988), include inadequate norm groups, restrictive standardized administration procedures, inappropriate test content and limited ability to modify testing procedures.

Botterbusch (1978) addressed psychometric testing and the economic issues associated with their use in the evaluation process. Botterbusch explains that of the techniques used in vocational evaluation such as job site evaluation, situational assessment, and work sample techniques, are more expensive than the cost associated with psychometric testing. Also, psychometric testing takes less time to administer than other techniques.

Situational Assessment

Situational assessment uses simulations of entire work environments rather than specific occupational tasks. Situational assessment is conducted in rehabilitation facilities, i.e. community rehabilitation programs where real work, often industrial subcontracts, is performed. Piece-rate wages are paid, and the demands of real work are approximated as closely as possible.

Situational assessments focus on the general behavior and skills important to work in virtually any occupation. These behaviors and skills include attendance, punctuality, productivity, and interpersonal relations on the job (Berven, 1984).

Stensrud (2007) describes a series of focus groups conducted with employers in an effort to establish a framework from within which rehabilitation professionals would be better able to understand the issues facing employers. Stensrud noted a major theme deliberated by employers while discussing the selection phase of the hiring process was that of soft skills of applicants. Employers defined *soft skills* as motivation, getting along with co-workers, accepting supervision, getting to work on time, attending work regularly, giving notice of nonattendance, showing enthusiasm for improving one's performance, and not expecting unreasonable accommodations. This definition is analogous to the main focus of situational assessment noted by Berven (1984) describing basic behavioral skills important to virtually all work environments. Pruitt (1986) explained that the purpose of situational assessment is to acquire information about

the consumer that may not be assessable through other evaluation procedures. The situational assessment may also be used to verify data obtained from other methods such as work samples and psychometric tests. Pruitt further describes five basic assumptions underlying the situational assessment method:

1. All behavior is purposeful. This fact has been a generally accepted concept in psychology since the birth of behaviorism (Boring, 1950). While it is not always apparent as to the purpose of the behavior there is always a cause (p. 138).
2. Behavior is meaningful to the degree made possible by the sensitivity and skill level of the observer. Observational sensitivity is a skill that is developed and improves through practice and experience. This skill involves not only being aware of the behavior that is occurring but also the ability to utilize the observational data in a manner that provides answers to evaluation questions (p. 138).
3. Behavior is determined both by the person and the situation and any attempt to isolate one from the other or to neglect the context results in loss of data or in misinterpretation. A person may behave totally different when taking a test than when performing a work task. These variations may be caused by physical or psychosocial factors and if these variables are attended to and recorded, the significance of these variables may later be inferred (p. 138).
4. Behavior should be interpreted systematically and consistently in terms of theories of human behavior. While there are many theories of human behavior, the most useful are those that deal with the vocational aspects of behavior (p. 139).
5. Interpretation of behavior is valid to the extent the observer is able to evaluate and compensate for the influence of personal bias, values and attitudes during the

evaluation process. If the evaluator is aware of their biases, he/ she will be more likely to make allowances and compensate when working with a consumer whose behaviors, mannerisms and attitudes deviate from the evaluator's expectations (p. 139).

Work Samples

An important step between psychometric testing and situational assessments, according to Cole and Wilkins (1983), is the work sample. They explain that in this technique used in the vocational evaluation process, a carefully selected sample of work is arranged in the evaluation unit, and the consumer is allowed to perform that work sample while being observed by the evaluator. The idea behind this type of evaluation is that the evaluator can predict consumer performance of a given job or group of jobs by generalizing from the measured performance of the consumer in a representative sample of work taken from that job or group of jobs. Of all the techniques utilized in the VE process, the work sample is the most frequently used (Cole & Wilkins, 1983).

Power (1984) explained that work samples differ from situational assessments in that the situational assessment focuses on the general behaviors and skills important to work such as attendance and punctuality while work samples seek to assess ability or skill in performing a specific occupational task. Work samples are well-defined, standardized work activities that use tools, materials, equipment, and supplies found in an actual job and are close simulations to actual industrial operations. They are no different from what a potential worker would be required to perform on an ordinary job (Berven, 1984; Hursh & Kerns, 1988; Power, 1984).

Work samples are defined by the *VEWAA-CARF: Vocational Evaluation and Work Adjustment*

Standards with Interpretive Guidelines and the Vocational Evaluation and Work Adjustment Association Glossary (1978) as:

A well defined work activity involving tasks, materials, and tools, which are identical or similar to those in an actual job or cluster of jobs. It is used to assess an individual's vocational aptitude, worker characteristics and vocational interest. (p. 20)

Pruitt (1986) explains that work sample is a generic term used to describe any sample of work, either real or simulated, irrespective of its purpose or use. A work sample may involve the simulation or mock-up of a job or an instrument for measuring a work trait. According to Pruitt, work samples have been largely American phenomena and used almost exclusively by vocational evaluators. Cole and Wilkins (1983) describe the work sample as an evaluation tool whose main purpose is that of predicting an individual's future job performance. Three examples of this are (a) a work sample can be used for personnel selection needs. Actual job samples would most likely be used in this instance, (b) work samples can be used to aid in evaluating a consumer for a given occupational area. Simulated job samples might be used in this case because it is not restricted to a specific job but instead to a specific occupational area, and (c) work samples can be used to determine worker traits possessed by an individual. Once determined, these traits can be applied to those traits in the world of work in order to determine all the jobs that the individual might be able to perform (Cole & Wilkins, 1983).

Job Site Evaluation/Job Tryouts

Job site evaluations or job tryouts (many times used interchangeably) utilize actual community job sites. A consumer is placed in a job tryout for a limited period of time so that performance can be observed, and a determination can be made regarding the suitability of the job for the consumer. The purpose of job site evaluations is to evaluate the consumer's ability to

acquire a job and perform successfully in a competitive employment situation (Berven, 1984; Hursh & Kerns, 1988). According to the 30th Institute of Rehabilitation Issues (2003), a job tryout:

...provides the opportunity to experience first hand actual work demands and the working conditions. This also exposes individuals to actual situations with co-workers and supervisors to better determine how well they can deal with work in the community. The tryouts typically last for no more than a few days. Employers sign an agreement to arrange for the tryout that explains that there is no obligation or expectations to hire the individual. The VR department assumes worker's compensation responsibility for the individual and pays the individual for their time during the tryout (minimum one day to a maximum of 10 days. (p. 194)

Hursh and Price (1983) explain that the major advantage of using job tryouts for both the consumer and the evaluator is the realistic nature of the work environment and job demands. While in this setting, the consumer has the opportunity to experience the demands of a competitive work environment and the evaluator has the opportunity to measure the consumer's performance, skills, and aptitudes against the performance standards of the competitive work setting. Hursh and Price also emphasize the importance of remembering that a job site evaluation or job tryout is an evaluation and not training or placement. This must be understood by both the consumer and the supervisor prior to a commitment. Although training and/ or placement may occur as a result of the job tryout both are separate and independent.

In summary, work, whether real or simulated is a distinguishing characteristic of the vocational evaluation process as a tool to evaluate the potential for work performance and work adjustment needs of the consumer. The process itself is a comprehensive, interdisciplinary

process of evaluating a person's physical, mental, and emotional ability, limitations, and tolerance in order to identify an optimal outcome for the person. It is a method of acquiring information in order to assist the consumer in identifying their functional competencies and limitations (Pruitt, 1986; Power, 1984).

Review of Relevant Research

A review of relevant literature indicates results that appear to question the importance of vocational evaluations in the overall rehabilitation process. Results from studies that examined the congruence between vocational evaluation recommendations and employment outcomes vary somewhat, i.e., congruence in the studies reviewed ranged from 31% congruence to 85% congruence (Beveridge & Fabian, 2007; Brown, McDaniel, & King, 1995; Caston & Watson, 1990; Kosciulek, Prozonic, & Bell, 1995; Peters, Scalia, & Fried, 1993). The wide range of results in these studies may be attributed to threats to both internal and external validity, as demonstrated in much of the existing research. In many instances the validity of a research study is based on the degree to which one can conclude the causal effects of one variable on another, (e.g. the effects of the independent variable on the dependent variable). When causal effects can be attributed to more than one variable the research begins to lose validity. The inability to account for confounding variables can threaten the validity of research, thereby rendering it invalid.

The following is a review of existing research in vocational evaluation focusing on the congruence between rehabilitation services provided and employment outcomes. The review will address the wide variance of results in view of four specific threats to validity (a) sample size, (b) restricted geographical areas, (c) selection bias, and (d) replication. A small sample may have insufficient power to detect a real effect. A restricted geographical area indicates a

low representation of the overall population. Selection bias occurs when more than one type of individual is represented in the study group. The lack of replication, according to Kennedy (2005), makes any experimental outcome suspect.

It is important to note that in many research studies exploring congruence between rehabilitation services and employment outcomes researchers rely on one or more occupational classification systems to operationalized variables such as (a) job obtained, (b) job recommended in the vocational evaluation report, and (c) the job developed in the individual plan for employment. Occupational classifications systems collect and compile data on different occupations allowing a way for grouping similar occupations into a manageable number of categories (Sharf, 1993; Patterson, 2003). Among the occupational classification systems addressed in this review are (a) the Dictionary of Occupational Titles, (b) the Standard Occupational Classification, and (c) the Dictionary of Holland Occupational Codes.

According to Patterson (2003) the Dictionary of Occupation Titles (DOT) is the most commonly used source for occupational information among vocational rehabilitation counselors. The DOT classifies occupations using a nine digit coding system, i.e., 653.382-010. The first three digits specify an occupational group. For example, the digits 653 indicate a printing machine occupation. The next three digits provide information on worker function ratings. For example, the digits 382 would indicate that this occupation would consist of (3) compiling, (8) taking instruction, and (2) operating-controlling. The final three digits are used to differentiate each occupation making each occupation unique (DOT, 1991).

The Standard Occupational Classification (SOC) system is used by all federal statistical agencies and includes all occupations in which work was performed for pay, thereby omitting occupations unique to volunteers. The SOC uses a four-level classification system consisting of

23 major groups, which encompasses 96 minor groups, 449 broad groups, and 822 detailed occupations. Occupations are classified using a six-digit code, i.e., 31-9092. Each digit has a specific meaning; the first two digits represent a major group, the third digit represents a minor group, the fourth and fifth digits represent a broad occupation, and the final digit denotes the detailed occupation. For example, the Standard Occupational Classification code 31-9092 would indicate a Medical Assistant. Therefore, the first 2 digits, 31 indicate the major group (Healthcare Support Occupations), the third digit, 9 indicates the minor group (Other Healthcare Support Occupations), the fourth and fifth digits, 09 indicate the broad group (Miscellaneous Healthcare Support Occupations), the final digit, 2 indicates the detailed occupation of a Medical Assistant.

The Dictionary of Holland Occupational Codes is a comprehensive list of occupational titles organized by Holland's personality and work environment types. This occupational classification system uses a coding system in which each occupational code includes a combination of three of the following, (R) realistic, (I) investigative, (A) artistic, (S) social, (E) enterprising, or (C) conventional. Three-letter Holland Codes are provided for more than 12,000 occupational titles and are easily converted to DOT codes (Brown & Lent, 2005).

Review of Relevant Studies

In the first study Beveridge and Fabian (2007) examined the relationship between the individualized plan for employment (IPE) goals and vocational rehabilitation employment outcomes to determine whether obtaining a job congruent to the individualized plan for employment (IPE) increased satisfaction and wages. Congruence was determined by an examination of the IPE goals and the Holland, 1996, occupational codes for employment outcomes. The Holland occupational codes are arranged into a three-letter hierarchy (e.g., ISR)

to describe patterns of values, attitudes, and behaviors that represent distinctive ways people think and act (Liptak, 2001). Participants in the Beveridge and Fabian study included 171 individuals who completed vocational rehabilitation services in the State of Maryland, obtained employment, and were successfully closed (status code 26) in 2002. According to the authors the employment outcome for each participant was coded in the Department of Rehabilitation Service's (DORS) data base according to the Dictionary of Occupational Titles, number, e.g. 033.362-010.

To determine congruence between employment outcomes and the individualized plan for employment (IPE), Beveridge and Fabian translated the recommended job DOT code into a Holland occupational code (e.g. ESI) using the Holland Occupational Code. Each participant's IPE employment goal was also assigned a DOT number that was then translated into the corresponding Holland code (e.g. ESR). An employment outcome was coded as congruent if the first letter of the Holland code in the IPE matched the employment outcome. For example, a consumer whose IPE goal was Computer Programmer, DOT number 030.162-010 with a corresponding Holland code of (IRE), who obtained a job as a Certified Networking Engineer, DOT number 033.362-010 with a Holland code of (IRE) would be considered employed in an occupation congruent with the vocational rehabilitation goal, because the first Holland code letters are in agreement (e.g. "I" indicates employment in one of the "Investigative" occupations). The congruent percentages were compared among different demographic predictors including gender, race, disability, and education level. The results of the findings indicate a congruence rate of 84.6% among male participants and 72.5% among the female participants. Congruence among white participants was 79.2% and minorities 78.5%. In the

sample 77 men and 58 women obtained a congruent outcome while 14 men and 22 women obtained employment outcomes not congruent with the rehabilitation IPE goal.

Beveridge and Fabian addressed three limitations in their study, one which relates to threats to internal validity including selection bias. Selection criterion for participation in this study was based, in part, on consumers who had completed and returned a satisfaction survey. Therefore, it is possible that the study sample was biased toward those participants who were both satisfied with the services they received and more satisfied with their job. The number of selection criterion in the study may have contributed to a smaller sample size, e.g., $n = 171$ (6%) from a population of 2,972 who received services and obtained employment. This could indicate that one type of disability was over represented in the study. The resulting sample size is also a threat to internal validity. A second limitation relates to instrumentation and measurement, specifically the job satisfaction survey which contained only one question with no psychometric data available for review. A final limitation related to internal validity was the lack of physical data. All data were electronic with no access to consumer case files.

Threats to external validity were also addressed. The sample included participants from only one state vocational rehabilitation agency and is applicable only to the public vocational rehabilitation population. Issues of selection bias mentioned above may contribute to one disability population being over represented. Thus, results of the study may not be generalized to other populations with disabilities.

The next study by Kosciulek, Prozonic, and Bell (1995) was conducted to assess congruence between vocational evaluation job recommendations, vocational skills training, and jobs obtained. Participation in the study was based on two criterion, (a) consumers who were closed successfully rehabilitated (status code 26), and (b) consumers who received a vocational

evaluation and participated in specialized vocational skills training as part of their VR program. Seventy-eight (24.3%) of 320 successfully closed cases in one state VR program in 1993 met the criteria for inclusion in the final sample. This study investigated questions on congruence in four areas (a) congruence between jobs obtained and vocational evaluation job recommendations, (b) congruence between vocational skills training and vocational evaluation recommendations, (c) congruence between jobs obtained and vocational skills training, and (d) congruence between vocational evaluation job recommendations, vocational skills training, and jobs obtained for successfully rehabilitated consumers.

The relationship between vocational evaluation job recommendations, vocational skills training, and jobs obtained at closure were classified as congruent or incongruent using the first three digits of the occupational classification code of the Dictionary of Occupational Titles (5th ed.). If the first 3 digits of the occupational code for VE job recommendations, training, or job obtained were the same, the two were considered congruent. All 9 digits of the occupational code were required to be the same for congruence to exist across evaluation recommendations, training, and jobs obtained. Levels of congruence were calculated for each of the four questions.

In looking at the relationship between jobs obtained and vocational evaluation job recommendations, Kosciulek, Prozonic, and Bell found congruence (the first three digits of the DOT code matched) in only 46.2% of participants, indicating that less than half of the participants obtained jobs that were congruent with jobs recommended in their vocational evaluation reports. The results also indicated that 61.5% of the participants entered vocational skills training programs congruent with the jobs recommended in their vocational evaluation reports, thus indicating that vocational evaluation job recommendations were implemented on

limited bases. Congruence was found to exist across evaluation recommendations, e.g. all DOT code numbers matched, in 39.7% of the cases.

Kosciulek, Prozonic, and Bell addressed limitations in their study as possible threats to external validity. Participants in the study were selected from one state-federal vocational rehabilitation agency. The sample size used in the study (24.3%) is small, possibly caused by criteria requiring participation in specialized vocational skills training. The small sample size compromises internal validity. The participant population from only one state VR agency indicates results cannot be generalized to other populations with disabilities which compromise external validity.

In another study, Caston and Watson (1990) reviewed 185 closed cases of a state vocational rehabilitation agency. The purposes of this study were (a) to explore the relationship between vocational evaluation services and rehabilitation outcomes, and (b) to examine the validity of vocational evaluations in predicting rehabilitation outcomes. In addition, the inclusion of the Dictionary of Occupational Titles (DOT) data and prognostic statements in vocational evaluations were examined. According to Caston and Watson, the Commission on Accreditation of Rehabilitation Facilities (CARF) has mandated both specific job recommendations and prognostic statements be included in all vocational evaluation reports. In the relationship between vocational evaluation (VE) services and rehabilitation outcomes, the study found that only 47 (25.4%) of the 185 cases reviewed had been provided vocational evaluation services. Of the 47 vocational evaluations only 13 included specific job recommendations. Of those participants who were given specific job recommendations and who were employed at closure, only 31% were working in the type of job recommended, and the remaining 69% were working in jobs other than those recommended. The study also indicated

that of the 185 cases reviewed only 25 were provided with a prognostic statement and the accuracy of those statements were generally poor. As for the inclusion of DOT codes in the evaluations, the study found that DOT codes were seldom listed by counselors or evaluators. Caston and Watson also found the absence of specific job recommendations in most of the evaluation reports. A majority of recommendations focused on service provision (e.g. counseling, work adjustment, and vocational training).

The internal validity of this study is compromised by the small sample. Of the cases examined only 47 of the 185 had been provided vocational evaluation services and of these only 13 included specific job recommendations. With only 13 of the 185 (7%) cases meeting the specific criteria required for analysis, the possibility of one disability being represented more than others increases, thereby contributing to selection bias.

External validity is compromised in this study by assigning participants from only state vocational rehabilitation agency and none for the private sector. Also, there is no evidence indicating this study has been replicated. The small sample size along with the restricted geographic area from where the sample was assigned, and the lack of replication makes it difficult to generalize the results to other populations of disabilities.

Another interesting item found in this study was the authors' assertion that the Commission on Accreditation of Rehabilitation Facilities (CARF) mandates specific job recommendations in all vocational evaluations. Caston and Watson stated,

While guidelines published by the Commission on Accreditation of Rehabilitation Facilities (CARF) mandate specific job recommendations in evaluation reports (either job titles or job families related to existing jobs in the community), such recommendations were often not provided. (p. 3)

Pete Hathaway, Resource Specialist, Employment and Community Services, CARF

International, in a personal communication, indicated that job recommendations in vocational evaluations depend on the referral question presented by the referral source. Mr. Hathaway stated,

... if the referral question seeks specific job recommendation then it would be CARF's expectation that specific job recommendations relevant to the local job market be included in the evaluation report. (Pete Hathaway, personal communication, November 24, 2009)

The purpose of the Vocational Evaluation, according to the definition developed by the Vocational Evaluation and Work Adjustment Association is to "... assist individuals with vocational development" (Dowd, 1993b, p. 28). The argument could be made that all referral questions should "... seek specific job recommendations...."

Peters, Scalia, and Fried (1993) studied the effectiveness of vocational evaluation program recommendations and successful outcomes by disability type. The study was based on the assumption that recommendations generated from the vocational evaluation are usually designed to provide occupational information or enhance employability of an evaluated individual through referral for job placement, training, education, assistive technology, or support services. Peters, Scalia, and Fried used recommendations as outcome measures in one of three categories (a) direct job placement, (b) vocational training or education, and (c) vocationally-related support services. Two research questions were generated for this study, (a) are recommendations more frequently associated with a successful outcome for one type of disability vs. another, and (b) do the types of recommendations made differ for one type of disability vs. another?

Participants for this study included case files of 116 individuals who had been evaluated in a rehabilitation clinic at a western university. The effectiveness of vocational evaluation recommendations was determined by whether the recommendations were associated with successful closures. A successful closure association existed when the evaluated individual was employed, engaged in education or training, receiving support services, or working on a rehabilitation plan toward a vocation goal that had been recommended as a result of the vocational evaluation. An unsuccessful closure association existed when an evaluated individual was not employed, not engaged in training or education, not receiving support services, or working on a rehabilitation plan toward a vocational goal that had not been recommended as a result of the vocational evaluation. Case closures were categorized as (a) successful, (b) unsuccessful, or (c) not eligible for follow-up which was used for those who were on medical hold, not eligible for rehabilitation services, relocated, or currently resolving a workers compensation case when follow-up occurred.

Results of this study show that direct job placement was recommended in 105 cases (89%) while training or education was recommended in 40 cases (34%) and 58 cases (48%) were recommended for supportive services. Successful closures occurred in 63 (53.4%) cases, unsuccessful closure in 23 (19.5%) cases, and not-eligible-for-follow-up occurred in 32 (27%) cases.

Limitation in this study include a compromise to internal validity caused by a small sample size ($n = 116$). A restricted geographical area from where the participants were assigned and the lack of replication compromised the external validity making it difficult to generalize the results to another population of disabilities.

Participants in this study came from both the public and private sectors. The authors indicate additional threats to validity caused by referrals from the private sector. These referrals were often due to workers compensation cases, medical holds pending surgery, or waiting a release for limited duty; all are extraneous variables that impact internal and external validity.

Another issue with this study appears to be an error in calculation. The study indicates that 116 subjects participated, more specifically, 116 closed case files were used. The results of the study indicate that there were 63 successful closures, 23 unsuccessful closures, and 32 not-eligible-for-follow-ups, giving a total of 118 participants, which increases the stated 116 participants by 2.

A study by Brown, McDaniel, and King (1995) was conducted to explore the role of vocational evaluation in the rehabilitation process. Participants in the study included vocational evaluators from the State of Georgia who were employed in either the public or private sector. A survey instrument was developed with questions concerning evaluator characteristics of referred clients, time spent in evaluation, referral questions(s) stated in referral material, evaluation recommendations, and counselor action/outcome. Each evaluator was sent 20 surveys and asked to select randomly from those consumers evaluated during the fiscal year 1992. Each survey was filled out on one of the randomly selected consumers. A total of 33 evaluators returned 587 of 1010 (a return rate of 58%) usable surveys on randomly selected consumers they each had served in the year 1992. The purpose of the study was to investigate vocational evaluation services in relation to the types of recommendations made, the types of consumers served, the relationship between recommendations and outcomes, time spent in the evaluation process, and the differences between evaluations conducted by public and private, not-for-profit evaluators. These relationships were addressed in five research questions developed for this study, (a) are

there differences in the types of disabilities of consumers referred for evaluation across districts and/or across the public and private, not-for-profit sectors, (b) are there differences between the public and private, not-for-profit sectors in the length of time needed to complete all phases of the vocational evaluation process, (c) are there differences between the types of referral (disability) and the time spent in evaluation, (d) do the types of recommendations made vary between public and private sector evaluators, and (e) do the case outcomes and subsequent actions of referring counselors relate to the recommendations made by the evaluator?

For purposes of this review, research question five is of interest because of its implications to congruence between recommendations made by evaluators and consumer outcomes. One strategy used by Brown, McDaniel, and King to determine “hits, perfect hits, or misses” when comparing recommendations to outcomes was to use the recommendations made by the evaluator and compare these to the number of times these recommendations were followed by the referral source. Evaluators had the opportunity to make one or more of nine possible recommendations which included (a) occupational skills training, (b) adjustment, (c) educational outcome, (d) employment, (e) sheltered employment, (f) supported employment, (g) independent living, (h) rehabilitation technology, and (i) other. A “hit” was considered any time a recommendation was followed by the referral source a “perfect hit” occurred when a perfect match was made between all recommendations made and all recommendation followed. A “miss” occurred when none of the recommendations were followed.

To conduct this procedure, all successfully rehabilitated (status code 26) cases (n = 167) were held out of the overall sample. In the remaining 420 cases, a hit occurred in 184 (43.8%) of the cases while a perfect hit occurred in only 25 (5.9%) of the cases. In comparison, of the 167 cases classified as closed (status 26), a hit occurred in 143 (85.1%) of the cases and a perfect hit

occurred in 40 (23.8%) of the cases. There is obviously a strong relationship between recommendations followed and status 26 closures. This would indicate that following evaluator recommendations increases the likelihood of successful closures. Limitations in this study include the restricted geographic area in which the study was conducted (i.e. one southeastern state), and the lack of replication making the results difficult to generalize to other populations with disabilities.

A review of research on the congruence between VE recommendations and positive employment outcomes indicate, in some cases, that recommendations are not always followed, raising questions about vocational evaluation reports. The following is a review of research on the congruence of information between the referral source and the vocational evaluator in an attempt to answer the question of what information the referral source expects to receive in the VE report and what information the vocational evaluator expects to document in the report.

Brown and Sink (1986) addressed the issue of not following recommendations by exploring what information the counselor expected in the VE report and what information the evaluator expected to provide. Results of this study might assist in explaining the low congruence between the employment actions VER and IPE. The results of their study concluded that information expected by the counselor varied somewhat from the information the evaluator expected to provide. In their interpretation of the results, Brown and Sink speculated one of the possible reasons for the incongruence is, "The evaluator may be somewhat more grandiose in their belief regarding what they intend to provide while the referral source expectations may be tempered by realism and a knowledge of what has been received from previous evaluations." Secondly, Brown and Sink indicated that evaluators may be providing too much information. For example, due to the availability of some standardized psychometric tools, evaluators may

tend to administer such assessments routinely to all consumers without considering whether such information is essential. Finally, their study indicated that counselors were uncertain as to whether the evaluator would provide realistic job titles thereby demonstrating a lack of confidence in the vocational evaluation to accomplish its mission (Brown & Sink, 1986).

Results from Brown and Sink (1986) were supported by later research conducted by Lee, Taylor, and Ruben (1994) that examined counselors' perceived value of vocational evaluation information. According to their results, information traditionally considered important by the evaluator relating to consumer aptitudes, interests, and skills was less important to the counselor than assessment of the functional aspects of the consumer.

Brown, McDaniel, and King (1995), explored reasons why counselors use vocational evaluation services and concluded that (a) establishing eligibility or (b) "buying time" for the most difficult consumers are two possible reasons. VR counselors, interested in establishing eligibility may use vocational evaluation services on order to confirm whether or not the consumer meets certain eligibility criteria. According to Ruben and Roessler (2008) a good candidate for vocational rehabilitation services must meet the following criteria, (a) the disability presents a substantial barrier to employment, and (b) it can be reasonably expected that VR services would benefit the consumer in the pursuit of employment. If there is a question as to whether a consumer meets these criteria, the counselor may seek assistance from the vocational evaluation. Also, counselors who are "buying time" for their difficult consumers may be unsure of the impact a certain disability has on a successful employment outcome. Using the services of the vocational evaluator might help in determining if the consumer would benefit from VR services.

Summary of Limitations

A review of the literature indicates similar limitations in many studies designed to investigate the congruency between vocational evaluation job recommendations and vocational outcomes. The limitations include threats to internal validity and external validity such as (a) sample size, (b) restricted geographical areas, (c) selection bias, and (d) replication. Campbell and Stanley, (1963) defined *internal validity* as the degree to which a researcher can be confident that the independent variable is what changed the dependent variable. They defined *external validity* as a question of generalizability by asking, to what population, setting, treatment variable, and measurement variables can the results be generalized? Extraneous variables, those variables in a study not accounted for, that might influence research outcomes become threats to validity.

Another important limitation noted in the research is one of replication (a threat to external validity). Vogt, (1993) defined *replication* as attempts, “to reproduce findings of other investigators so as to increase confidence in (or refute) those findings.” In his definition, Vogt explains that the reason for research replication is, “... because it helps increase external validity” (p. 196). Kennedy (2005) stated that, “... any experimental outcome is suspect until another group of researchers replicate the procedures and findings” (p. 7).

In Beveridge and Fabian (2007) selection bias occurred when only 171 of the 2,972 participants met the criteria for inclusion in the final sample. External validity was compromised by using a population from (a) one state VR agency, and (b) no participants from the private sector. Selection bias occurred in the Kosciulek, Prozonic, and Bell (1995) study when only 78 of the 320 cases met the criteria for inclusion in the final sample. The population for this study came from one state VR agency which limited its external validity. The Caston and Watson

(1990) study is also limited in external validity due to sample selection from only one state VR agency. Peters, Scalia, and Fried (1993) has threats to internal validity due to a limited sample size (n = 116). External validity is compromised due to the sample population taken from only one university rehabilitation clinic. Results of Brown, McDaniel, and King (1995) indicate a restricted geographic area where the study took place indicating that results cannot be generalized to another population with disabilities. Brown and Sink (1986) indicate that threats to validity include a restricted geographical area from which the samples were taken and the lack of replication, both threats to external validity. In their study of rehabilitation counselors' perceived value of vocational evaluation information Lee, Taylor, and Rubin (1994) identified limitations of external validity caused by the small geographical area from which the sample population was taken, and the need for future of replication (see Table 2).

Table 2

Threats to Internal and External Validity

Study	Internal		External	
	Sample Size	Selection Bias	Replication	Geographic Area
Beveridge & Fabian	Weak	Weak	Weak	Weak
Kosciulek, Prozonic, & Bell	Weak	Weak	Weak	Weak
Caston & Watson	Weak	Weak	Weak	Weak
Peters, Scalia, & Fried	Weak	Weak	Weak	Weak
Brown, McDaniel, & King	Strong	Strong	Weak	Weak
Brown & Sink	Strong	Strong	Weak	Weak
Lee, Taylor, & Rubin	Strong	Strong	Weak	Weak

Note. Table 2 is a compilation of threats to internal and external validity as indicated in the studies reviewed.

One final observation addressing the limitations in the reviewed research is the lack of published replication in the area of congruence between vocational evaluation job recommendations and vocational rehabilitation employment outcomes. In an attempt to replicate the procedures and verify results of a study the importance of well defined variables become obvious. Each study reviewed operationalized the dependent variable and the independent variable differently, which may account for the fluctuation in results from one study to another. For example, the dependent variable “congruence” must be defined in concrete terms that can be agreed on as occurring, or not occurring, by those who understand the operational definition. Poorly defined variables threaten internal validity which through replication of the study threatens external validity or its ability to be representative of the larger population of interest.

In summary, the lack of published replication of studies addressing congruence between vocational evaluation recommendations and vocational rehabilitation employment outcomes greatly influences the validity of such studies. Each study addressed in the literature review shared similar threats to both internal and external validity. For example, each study operationalized common variables differently (i.e., congruence and outcomes). The replication of any study will either support or refute the original results thereby adding to its validity. According to Kennedy (2005), the lack of replication makes any experimental outcome suspect.

CHAPTER III. VOCATIONAL EVALUATION: THE IMPACT ON EMPLOYMENT OUTCOMES

Over the last four decades lawmakers have passed legislation in efforts to increase the employment opportunities for individuals with disabilities. However, a large number of this group remains unemployed and/or underemployed when compared to the general population. Individuals with disabilities are underrepresented in the labor force, particularly in those jobs that provide secure employment, healthy working conditions, and good benefits (Hagner, 2000; Unger, 2002; Wehman, Inge, Revell, & Brooke, 2007). She and Livermore (2009) explained that of the working-age individuals in the United States who were living in poverty, a large and disproportionate number have disabilities with annual poverty rates 2 to 5 times higher when compared to their counterparts without disabilities. Data from the Bureau of Labor Statistics, in a 2012 news release, indicated the unemployment rate for those with disabilities for the year 2011 was 13.5% while the unemployment rate for those without disabilities was 8.1%. When comparing the employment rates, the Bureau of Labor Statistics indicated the employment rate among those with disabilities in 2011 was 17.9% while the rate of those without disabilities was 63.7% (U.S. Department of Labor, 2012). Additionally, data from the 2008 Current Population Survey indicates that of those with disabilities who are employed, only 27% worked full-time compared to 68% of those individuals without disabilities (U.S. Department of Labor, 2012). Disparities in the employment/unemployment rates between those with disabilities and those without have been attributed to significant attitudinal barriers within society towards those with

disabilities (Marinelli & Dell Orto, 1999; Rubin & Roessler, 1978; Vash & Crewe, 2004).

However, research in the area of employer attitudes toward hiring those with disabilities varies somewhat. Dixon, Kruse and Van Horn (2003) in the *Work Trends Report: Restricted Access*, published by the John J. Heldrich Center for Workforce Development at Rutgers University, found that 17% of employers surveyed reported that the lack of skills and experience on the part of the job seeker were the greatest barriers to employment. Yet, 15% of employers surveyed reported a general reluctance to hire a worker with a disability regardless of experience.

In a review of related literature Hernandez, Keys, and Balcazar (2000) concluded that employers were willing to hire people with disabilities but that in practice little hiring actually occurred. Gilbride and Stensrud (1993) found that employers said they were willing to hire people with disabilities but were unable to recruit them. Stensrud (2007) found in his study on developing relationships with employers, that the lack of soft skills of applicants was a major theme discussed by employers for not hiring those with disabilities. In the work environment, employers define *soft skills* as motivation, getting along with co-workers, accepting supervision, getting to work on time, attending work regularly, giving notice of nonattendance, showing enthusiasm for improving one's performance, and not expecting unreasonable accommodations.

For many people, their first job was not their last. Many move from one job to another until they find a job that seems to "fit". Most people would prefer this self-discovery to occur early in life. Along the way it is understood that the "novice" employee will gain acceptable work habits including the necessary soft skills, as defined above, to enable him/her to compete successfully in the current labor market (Institute of Rehabilitation Issues, 2003). Stensrud's (2007) findings indicate that it is not always easy for those with disabilities to move from job to job in an effort to self-explore. There is a service in vocational rehabilitation settings often used

to assist those with disabilities to shorten this process of job self-exploration, it is known as vocational evaluation. Vocational evaluation utilizes vocationally related tests, interviews, observations, work samples, and on-the-job tryouts in an effort to assist the vocational rehabilitation counselor and the person with a disability to determine their best job fit.

According to Jenkins, Patterson, and Szymanski (1992) the vocational rehabilitation process is “a comprehensive sequence of services, mutually planned by the consumer and rehabilitation counselor, to maximize employability, independence, integration, and participation of persons with disabilities in the work place and the community” (p. 2). Part of the process of planning rehabilitation goals for the person with a disability includes determining the best job fit, thus the need for a comprehensive vocational evaluation.

Pruitt (1986) explained that those with disabilities and other disadvantaged individuals have typically been the primary consumers of the vocational evaluation process. Social/economic systems within society have erected both attitudinal and architectural barriers that prevent or make it difficult for this population to secure and maintain employment. The vocational evaluation is a means to increase an individual’s chances of bypassing these barriers. Even without social barriers to employment, decisions based upon vocational evaluations are far superior to trial and error methods for job selection or choosing a career (Institute of Rehabilitation Issues, 2003; Pruitt, 1986).

The vocational evaluation, as a process to promote self-sufficiency, is critical for those with disabilities. The process was developed in response to an unfilled need to assess the vocational potential of individuals with disabilities by determining the capacity of the individual to successfully participate in the dynamic process that occurs between the person and the work environment (Institute of Rehabilitation Issues, 2003; Nadolsky, 1983). Information obtained

from a vocational evaluation is a valuable tool used in the vocational rehabilitation process. The vocational evaluation result can assist the vocational rehabilitation counselor and consumer in laying a solid foundation on which to build a successful vocational rehabilitation plan.

Therefore, to help enhance more successful employment outcomes, vocational rehabilitation counselors must work collaboratively with their consumers to develop realistic plans for providing rehabilitation services. An important component of the rehabilitation planning process is the recommendations found in the vocational evaluation report. By incorporating vocation evaluation recommendations in the rehabilitation planning process, the chances of successful employment are increased (Brown, McDaniel, & King, 1995; Institute of Rehabilitation Issues, 2003; Nadolsky, 1983; Peters, Scalia, & Fried, 1993).

Statement of Problem

Vocational evaluation appears to serve as a critical component of the overall vocational rehabilitation (VR) process by providing data to rehabilitation counselors for establishing eligibility, designing rehabilitation plans, and conducting appropriate job placement activities. Despite its apparent important function in the VR process, results from outcome studies continue to raise questions as to the importance of vocational evaluation as a tool in employment and job retention among those who use VR services (e.g. a wide variance in results between studies). With this wide difference in outcome results, the importance of vocational evaluation in the rehabilitation process has yet to be fully demonstrated in the rehabilitation research literature (Beveridge & Fabian, 2007; Brown, McDaniel, & King, 1995; Brown & Sink, 1986; Caston & Watson, 1990; Corthell & Griswold, 1987; Kosciulek, Prozonic, & Bell, 1995; Lee, Taylor, & Rubin, 1994; Peters, Scalia, & Fried, 1993). According to Taylor (2000), employment rates among those with disabilities have hovered around 30% for more than four decades. This high

unemployment rate suggests that individuals with disabilities need greater assistance in preparing for, securing, and maintaining employment. If vocational evaluation is a critical part of this process, it must be demonstrated by showing that vocational evaluation recommendations are indeed linked to vocational rehabilitation planning and to successful employment outcomes. The focus of this research therefore was to determine if relationships existed between recommendations made through vocational evaluations and successful employment outcomes for individuals receiving vocational rehabilitation services in Alabama. Previous research in this area explored the influence of vocational evaluations on successful employment outcomes with some studies focusing specifically on the impact of the recommendations made in vocational evaluation reports. Results have varied indicating there may be a discrepancy between vocational evaluation recommendations and successful employment outcomes (Beveridge & Fabian, 2007; Caston & Watson, 1990; Kosciulek, Prozonic, & Bell, 1995; Peters, Scalia, & Fried, 1993).

Purpose of the Study

The purpose of this study was to ascertain the extent to which vocational evaluation recommendations correlate with successful employment outcomes of those receiving vocational rehabilitation services in the state of Alabama. In order to accomplish this purpose, the following research questions were addressed:

Research Question 1: What is the relationship between (a) vocational evaluation recommendations, (b) individual plan for employment goals, and (c) employment outcomes?

Research Question 2: To what extent do the demographic variables of, age, race, gender, and primary disability predict congruence between the (a) vocational evaluation

recommendations, (b) individual plan for employment goals, and (c) employment outcomes?

This question generated the following Null Hypothesis:

H₀1: There is no relationship between vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) and (a) vocational evaluation recommendations, (b) individual plans for employment goals, or (c) employment outcomes.

Research Question 3: To what extent do the demographic variables of, age, race, gender, and primary disability predict congruence between the vocational evaluation recommendations and individual plan for employment goals? This question generated the following Null Hypothesis:

H₀2: There is no relationship between vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) and vocational evaluation recommendations or individual plans for employment goals.

Research Question 4: To what extent do the demographic variables of, age, race, gender, and primary disability predict congruence between vocational evaluation recommendations and employment outcomes? This question generated the following Null Hypothesis:

H₀3: There is no relationship between vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) and vocational evaluation recommendations or employment outcomes.

Research Question 5: To what extent do the demographic variables of, age, race, gender, and primary disability predict congruence between individual plan for employment goals and employment outcomes? This question generated the following Null Hypothesis:

H₀4: There is no relationship between vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) and individual plans for employment goals or employment outcomes.

Methods and Procedures

Sample

The data used in this study were retrieved from the Alabama Department of Rehabilitation Services and consisted of successfully closed cases meeting the following criteria: (a) cases from fiscal years 2009 and 2010; (b) cases that completed a vocational evaluation; and (c) cases that were closed as rehabilitated.

Recommendations for sample selection when using regression analysis include using ratio to subject methods. According to Mertler and Vannatta (2005) special attention should be given to the sample (n) and the number of predictors (k). A recommended ratio of these two factors is about 15 subjects to every predictor (Stevens, 2009). According to Tabachnick and Fidell (1996), a simple rule of thumb for testing individual predictors is $n \geq 104 + k$. For example, the required sample size needed for this study would be $n \geq 104 + 4$ or $n \geq 108$ (Mertler & Vannatta, 2005; Stevens, 2009; & Tabachnick & Fidell, 1996). The initial sample of 400 participants randomly selected for this study exceeds the required 108 generated by applying the above formula.

This study was designed around a specific number of participants meeting the required criteria over an identified two-year period. The sample size was determined by referring to the sample size suggestion table published by the research division of the National Education Association. The table was generated for the purpose of selecting sample sizes from given populations (Krejcie & Morgan, 1970). The table is based on the formula $[s = X^2 NP (1 - P) \div d^2$

$(N - 1) + X^2 P (1 - P)$] where: s = required sample size; X^2 = the table value of chi square for 1 degree of freedom at a 95% confidence level and a 5% margin of error; N = the population size; P = the population proportion; d = the margin of error. The table gives optimal sample sizes based on given population numbers using a desired margin of error and confidence interval, 5% and 95% respectively.

For this study, 2,443 cases met the required criteria. After applying the above formula, it was determined that 331 cases would be an appropriate sample size. In order to maintain a 5% margin of error and a 95% confidence interval, the sample size was increased by 20% giving the total of 397 cases (Glenn Israel, 1992). For the purposes of this study, 400 cases were randomly selected from the 2,443 that met the criteria.

The demographic composition of the 400 individuals in the sample population included: 251 (62.8%) males, 149 (37.2%) females, 278 (69.5%) White, 120 (30%) Black, and 2 (0.5%) Other. Participant age range was 18 to 65 years with 321 (80.2%) between 18 and 30 years and 79 (19.8%) between 31 and 65. These demographic data were compared to the demographic data of the 2,443 in the population from which the sample was drawn. The results of the comparison indicate the sample of 400 is a reasonable representative of the 2,443 cases in the population. The comparison is shown in Table 3.

Table 3

Frequency of Age, Gender, and Race

Variable	Sample	%	Population	%
Age				
18–30	247	80.2	1,938	79.4
31–65	58	19.8	503	20.6
Gender				
Male	191	62.8	1533	62.8
Female	114	37.2	908	37.2
Race				
White	215	69.5	1548	63.4
Black	88	30.0	874	35.8
Other	2	0.5	19	0.8

The demographic composition of the 400 randomly selected individuals that met the required criteria for this study indicate that the typical participant for this study is a White male between the ages of 18 and 39.

Procedures

The Alabama Department of Rehabilitation Services (ADRS) identified 2,443 cases that met the required criteria. These cases became the population from which the sample was drawn. Using the Alabama Department of Rehabilitation Services' standard procedures for randomly selecting cases used in research, a seven digit number was developed consisting of the last four digits of the Social Security Number of each case identified along with the first 3 digits of each

of the identified cases' master identification number. The result was 2,443 cases each having its own seven digit number (the first three of the Social Security Number followed by the first 3 of the case master identification number). All seven digit numbers were then sorted in ascending order and the first 400 were selected for this study.

Information on the 400 randomly selected cases was compiled on an Excel spreadsheet provided by ADRS. Information included on the spreadsheet included, age, race, gender, primary disability, employment outcome, and individual plan for employment goals. The only required information not available in the state database was the vocational recommendations provided by the evaluator. A consumer completes a vocational evaluation, the evaluator provides a vocational evaluation report to the rehabilitation counselor for use in the vocational planning process. The report includes future vocational placement possibilities for the consumer. Each vocational evaluation report is maintained in the consumer's case file located in the VR office where the consumer received services. Once the sample cases were drawn, ADRS contacted the VR counselor for each of the 400 selected consumers and requested a copy of each selected subject's vocational evaluation report. Copies of the VE reports were mailed to the Montgomery office of the Alabama Department of Rehabilitation Services. In order to pull data from these reports and maintain confidentiality, the researcher physically located the reports and compiled all data while working in an office provided by ADRS in their Montgomery facility.

Data Preparation

During this phase of the study the vocational recommendation data from the VE reports was combined with the data collected from the ADRS database. In order to accomplish this, the ADRS spreadsheet was modified by adding columns for the information found in the VE reports. Three columns were added including (a) evaluation, (b) recommendations given, and (c)

recommendation. The column titled “evaluation” (y/n) indicated whether or not each case did in fact have a vocational evaluation report. The column titled “recommendations given” (y/n) indicated if there was a recommendation given in each VE report. The column titled “recommendation” indicated the specific employment recommendation suggested by the evaluator.

After comparing each of the 400 cases in the original sample with the VE reports that were mailed in, 95 cases were rejected. Of the rejected cases, 46 cases had no VE report. This was confirmed by the local VR office supervisors, who indicated that the VE reports could not be located. The remaining 49 cases did, in fact, have VE reports but there were no vocational recommendations given. The lack of a VE report or a vocational recommendation made it impossible to determine congruence; therefore 95 cases were excluded from the study. By rejecting 95 cases the sample was reduced to 305 cases.

Further review of the data collected by the ADRS revealed that the individual plan for employment (IPE) for some cases had multiple amendments, i.e., more than one IPE. According to ADRS representatives, the first plan was developed using information obtained in the vocational evaluation report. Amendments to the original IPE were made for different reasons including consumers opting for jobs that did not match recommendations agreed upon in the IPE, thus the consumers would request an amendment to their IPE. Another reason might be that the job recommendations found in the IPE are located outside the geographic area of the consumer. For the purposes of this study the first IPE was used because it was based on the vocational evaluation given to the consumer.

Employment information gathered from the ADRS database was identified and compared to the employment recommendations found in the VE report. The Individual Plan for

Employment (IPE) and employment outcomes (EO) are identified in the ADRS databases using the Standard Occupational Classification system. In order to determine congruence, the job recommendations found in the VE reports were each numerically translated using this same classification system. According to Patterson (2003), the Standard Occupational Classification (SOC) system is used by all federal statistical agencies to classify occupational information and includes all occupations in which work was performed for pay, thereby omitting occupations unique to volunteers. The SOC uses a four-level classification system consisting of 23 major groups, which encompass 96 minor groups, 449 broad groups, and 822 detailed occupations. Occupations are classified using a six-digit code, i.e., 31-9092. Each digit has a specific meaning; the first two digits represent a major group, the third digit represents a minor group, the fourth and fifth digits represent a broad occupation, and the final digit denotes the detailed occupation. For example, the Standard Occupational Classification code 31-9092 would indicate a Medical Assistant. Therefore, the first 2 digits (31) indicate the major group (Healthcare Support Occupations), the third digit (9) indicates the minor group (Other Healthcare Support Occupations), the fourth and fifth digits (09) indicate the broad group (Miscellaneous Healthcare Support Occupations), the final digit (2) indicates the detailed occupation of a Medical Assistant (Bureau of Labor Statistics, 2010; Patterson, 2003).

During the statistical analysis phase of the project, congruence was determined by comparing the first two digits of the SOC codes across the three employment actions (a) vocational evaluation recommendation (VER); (b) the individual plan for employment (IPE); and (c) employment outcome (EO). For example, if the first two digits matched between the SOC code assigned to the vocational evaluation recommendation (VER) and the employment outcome (EO), they were considered to be congruent. If the first two digits did not match they were

considered incongruent. Congruence/incongruence was determined among any of the four possible combinations of the employment actions (a) vocational evaluation recommendation (VER), individual plan for employment (IPE), and employment outcome (EO); (b) vocational evaluation recommendation (VER) and individual plan for employment (IPE); (c) vocational evaluation recommendation (VER), and employment outcome (EO); and (d) individual plan for employment (IPE) and employment outcome (EO).

Data Analysis

All data collected were stored on a flash drive provided by the ADRS. Data were analyzed using the statistical analysis software Statistical Package for the Social Sciences (SPSS). The data were entered into an SPSS spreadsheet and the necessary statistical analyses were conducted. The data in this study were analyzed using descriptive statistics and logistic regression procedures. Logistic regression is a viable option to use when the dependent variable is categorical or discrete. That is, the dependent or criterion variable in this study was categorical (congruent or incongruent). Those cases that were congruent were coded as 1 and those cases that were incongruent were coded as 0. According to George and Mallery (2000) logistic regression is basically an extension of multiple regression in situations where the dependent variable is not continuous or quantitative in nature. Although similar to multiple regression there are advantages to using logistic regression. One advantage, according to Tabachnik and Fidell (1996) is that the assumption of normal distribution of the predictor variables (independent variables) is not required. Another advantage is that logistic regression cannot produce negative predictive probabilities. In logistic regression all probability values will be positive and will range from 0 to 1. Finally, logistic regression has the capacity to analyze

predictor variables of all types including continuous, discrete, and dichotomous (Tabachnik & Fidell, 1996).

Results of the frequency counts indicated that 81% (247) of the participant sample were between the ages of 18 and 30 while the remaining participants ranged in age from 1.3% (4) participants at 31 years to 0.3% (1) participant at 65 years. Likewise, frequency results from the primary disability variable indicated that 79% (241) participants had cognitive disabilities with the remaining disabilities ranging from 13.1% (40) participants with mobility impairments to 7.9% (24) with sensory impairments. All disabilities were grouped into three categories including (a) cognitive, (b) mobility, and (c) sensory. The variable primary disability was named redisability.

Results

In addressing research question 1: What is the relationship between (a) vocational evaluation recommendations (VER), (b) individual plan for employment goals (IPE), and (c) employment outcomes (EO)? Frequency counts were calculated to determine congruence among the four possible combinations of the following employment actions (a) VER, IPE and EO; (b) VRE and IPE; (c) VRE and EO; and (d) IPE and EO. Of the 305 cases reviewed 38.4% (117) did not meet congruence among any of the combinations of employment actions, therefore on the first two SOC code numbers, none matched on (a) VRE, IPE and EO; (b) VRE and IPE; (c) VRE and EO; and (d) IPE and EO. Of the 305 cases, 11.8% (36) were congruent across VRE, IPE and EO. Of the 305 cases, 6.9% (21) were congruent across VER and EO. Of the 305 Cases 11.8% (36) were congruent across VER and IPE. Of the 305 cases 31.1% (95) of the cases reviewed were congruent across IPE and EO. Results are listed in Table 4.

Table 4

Congruence

Employment Actions	Number	%
VRE, IPE and EO	36	11.8
VRE and IPE	36	11.8
VRE and EO	21	6.9
IPE and EO	95	31.1
Not congruent	117	38.4

For the remaining research questions, logistic regression was used to identify which demographic variable(s) best predicted congruence in the four possible combinations of the employment actions (a) VRE, IPE and EO; (b) VRE and IPE; (c) VRE and EO; and (d) IPE and EO.

The first null hypothesis was formulated to answer research question 2.

H₀1: Vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) does not predict congruence among (a) vocational evaluation recommendations, (b) individual plan for employment goals, and (c) employment outcomes.

Binary logistic regression was conducted to determine which independent variables (age, race, gender, and primary disability) were predictors of congruence between the employment actions (a) vocational evaluation recommendations (VER), (b) individual plan for employment goals (IPE), and (c) employment outcomes (EO). Regression results indicated an overall model fit (-2 Log Likelihood = 216.896; Goodness-of-Fit = 8.627). The -2 Log Likelihood (216.896), according to Mertler and Vannatta (2005), is a statistic that provides an index of model fit. A

perfect model fit would have a -2 Log likelihood of 0. Therefore, the lower the value, the better the model fits the data. According to Tabachnik and Fidell (1996), the goodness-of-fit (8.627) is a statistic used to evaluate significant decreases or increases in the log-likelihood with the addition or deletion of predictors. The model correctly classified 82.2% of the cases. Table 5 shows the percent of cases correctly classified.

Table 5

Percent of All Cases Correctly Classified

		Predicted			
		VER-IPE-EO		Percentage	
Observed		Not Congruent	Congruent	Correct	
Step 1	VER-IPE-EO	Not Congruent	269	0	100.0
		Congruent	36	0	.0
Overall %				88.2	

Tabachnik and Fidell (1996) noted that “If an acceptable model is found, the statistical significance of each of the coefficients is evaluated using the Wald test where the coefficient is divided by its standard error...” (p. 581). The *Wald* statistic indicated that none of the regression coefficients significantly predicts congruence. Table 6 shows regression coefficients for predictors.

Table 6

Regression Coefficients for Predictors

	B	Wald	df	p	Odds ratio
Age	.026	2.643	1	.104	1.026
Gender	-.327	.758	1	.384	.721
Redisability	-.184	.540	1	.462	.823
Race	.176	.213	1	.644	1.193
Constant	1.149	.047	1	.828	3.154

In addressing the null hypothesis formulated to answer research question 2, the results failed to reject the null hypothesis, indicating that consumers' demographic information (age, race, gender, and primary disability) does not predict congruence among (a) vocational evaluation recommendations, (b) individual plan for employment goals, and (c) employment outcomes.

The second null hypothesis was formulated to answer research question 3.

H₀2: Vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) does not predict congruence between (a) vocational evaluation recommendations and (b) individual plan for employment goals. Binary logistic regression was conducted to determine which independent variables (age, race, gender, and primary disability) were predictors of congruence between the employment actions (a) vocational evaluation recommendations (VER) and (b) individual plan for employment goals (IPE). Regression results indicated an overall model fit (-2 Log Likelihood = 212.194; Goodness-of-Fit = 9.646). The -2 Log Likelihood (212.194), according to Mertler and Vannatta (2005), is a statistic that provides

an index of model fit. A perfect model fit would have a -2 Log likelihood of 0. Therefore, the lower the value, the better the model fits the data. According to Tabachnik and Fidell (1996), the goodness-of-fit (9.646) is a statistic used to evaluate significant decreases or increases in the log-likelihood with the addition or deletion of predictors. The model correctly classified 88.5% of the cases. Table 7 shows percent of cases correctly classified.

Table 7

Percent of Cases Correctly Classified

		Predicted			Percentage Correct
		VER-IPE		Congruent	
		Not Congruent	Congruent		
Observed					
Step 1	VER-IPE	Not Congruent	270	0	100.0
		Congruent	35	0	.0
	Overall %				88.5

Tabachnik and Fidell (1996) noted that “If an acceptable model is found, the statistical significance of each of the coefficients is evaluated using the Wald test where the coefficient is divided by its standard error... ” (p. 581). The *Wald* statistic (3.913, $p = .048$) indicated that none of the regression coefficients significantly predicts congruence. Table 8 shows regression coefficients for predictors.

Table 8

Regression Coefficients for Predictors

	B	Wald	df	p	Odds ratio
Age	.031	3.913	1	.048	1.032
Gender	.246	.386	1	.535	1.278
Redisability	.117	.340	1	.560	1.124
Race	.229	.353	1	.552	1.257
Constant	-5.878	1.887	1	.170	.003

In addressing the null hypothesis formulated to answer research question 3, the results rejected the null hypothesis, indicating that age significantly predicted congruence between (a) vocational evaluation recommendations, and (b) individual plan for employment goals.

The third null hypothesis was formulated to answer research question 4.

H₀₃: Vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) does not predict congruence between (a) vocational evaluation recommendations and (b) employment outcomes. Binary logistic regression was conducted to determine which independent variables (age, race, gender, and primary disability) were predictors of congruence between the employment actions (a) vocational evaluation recommendations (VER) and (b) employment outcomes (EO). Regression results indicated an overall model fit (-2 Log Likelihood = 142.737; Goodness-of-Fit = 8.452). The -2 Log Likelihood (142.737), according to Mertler and Vannatta (2005), is a statistic that provides an index of model fit. A perfect model fit would have a -2 Log likelihood of 0. Therefore, the lower the value, the better the model fits the data. According to Tabachnik and Fidell (1996), the

goodness-of-fit (8.452) is a statistic used to evaluate significant decreases or increases in the log-likelihood with the addition or deletion of predictors. The model correctly classified 93.1% of the cases. Table 9 shows percent of cases correctly classified.

Table 9

Percent of Cases Correctly Classified

		Predicted			
		VER-EO		Percentage	
Observed		Not Congruent	Congruent	Correct	
Step 1	VER-EO	Not Congruent	284	0	100.0
		Congruent	21	0	.0
Overall %				93.1	

Tabachnik and Fidell (1996) noted that “If an acceptable model is found, the statistical significance of each of the coefficients is evaluated using the Wald test where the coefficient is divided by its standard error ... ” (p. 581). The *Wald* statistic indicated that age (3.91, $p = .048$) and gender (4.44, $p = .035$) significantly predicted congruence between vocational evaluation recommendation and employment outcomes. Table 10 shows regression coefficients for predictors.

Table 10

Regression Coefficients for Predictors

	B	Wald	df	p	Odds ratio
Age	-.108	3.914	1	.048	.898
Gender	-.984	4.444	1	.035	.374
Redisability	.050	.027	1	.870	1.051
Race	.206	.176	1	.675	1.229
Constant	-.796	.016	1	.901	.451

In addressing the null hypothesis formulated to answer research question 4, results rejected the null hypothesis, indicating that both age and gender significantly predicted congruence between vocational evaluation recommendation and employment outcomes.

The fourth null hypothesis was formulated to answer research question 5.

H₀4: Vocational rehabilitation consumers' demographic information (age, race, gender, and primary disability) does not predict congruence between (a) individual plan for employment goals and (b) employment outcomes. Binary logistic regression was conducted to determine which independent variables (age, race, gender, and primary disability) were predictors of congruence between the employment actions (a) individual plan for employment goals (IPE) and (b) employment outcomes (EO). Regression results indicated an overall model fit (-2 Log Likelihood = 370.065; Goodness-of-Fit = 2.932). The -2 Log Likelihood (370.065), according to Mertler and Vannatta (2005) is a statistic that provides an index of model fit. A perfect model fit would have a -2 Log likelihood of 0. Therefore, the lower the value, the better the model fits the data. According to Tabachnik and Fidell (1996), the goodness-of-fit (2.932) is a statistic used to

evaluate significant decreases or increases in the log-likelihood with the addition or deletion of predictors. The model correctly classified 68.9% of the cases. Table 11 shows percent of cases correctly classified.

Table 11

Percent of Cases Correctly Classified

		Predicted			
		IPE-EO		Percentage	
Observed		Not Congruent	Congruent	Correct	
Step 1	IPE-EO	Not Congruent	210	0	100.0
		Congruent	95	0	.0
Overall %				68.9	

Tabachnik and Fidell (1996) noted that “If an acceptable model is found, the statistical significance of each of the coefficients is evaluated using the Wald test where the coefficient is divided by its standard error ...” (p. 581). The *Wald* statistic (5.04, $p = .025$) indicated that redisability (primary disability) significantly predicted congruence between individual plan for employment goals and employment outcomes. Table 12 shows regression coefficients for predictors.

Table 12

Regression Coefficients for Predictors

	B	Wald	df	p	Odds ratio
Age	.002	.020	1	.888	1.002
Gender	.237	.749	1	.387	1.267
Redisability	-.459	5.044	1	.025	.632
Race	-.172	.383	1	.536	.842
Constant	9.008	4.379	1	.036	8164.657

In addressing the null hypothesis formulated to answer research question 5, results rejected the null hypothesis, indicating that primary disability significantly predicted congruence between individual plan for employment goals and employment outcomes.

Conclusion

The purpose of this study was to ascertain the extent to which vocational evaluation recommendations impact successful employment outcomes of those receiving vocational rehabilitation services in the state of Alabama.

In addressing research question 1: What is the relationship between (a) vocational evaluation recommendations (VER), (b) individual plan for employment goals (IPE), and (c) employment outcomes (EO)? Descriptive statistics were used to determine congruence in the areas of (a) VRE, IPE and EO; (b) VRE and IPE; (c) VRE and EO; and (d) IPE and EO. Of the 305 cases reviewed 38.4% (117) did not meet congruence among (a) VRE, IPE and EO; (b) VRE and IPE; (c) VRE and EO; and (d) IPE and EO. Of the 305 cases, 11.8% (36) were congruent across VRE, IPE and EO. Of the 305 cases, 11.8% (36) were congruent across VER and IPE. Of

the 305 cases 6.9% (21) were congruent across VER and EO. Of the 305 cases 31.1% (95) of the cases reviewed were congruent across IPE and EO.

Research questions 2 through 5 examined the predictive value of demographic variables (age, gender, race, and primary disability) on congruence among any combination of the following employment actions: VER, IPE, and EO. In addressing research questions 2, results from a binary logistic procedure failed to reject the null hypothesis by demonstrating no statistical significance on the variables, age, race, gender, and primary disability, indicating that none of the variables would predict congruence across VER, IPE, and EO. However, research questions 3, 4 and 5 did reject the null hypothesis by indicating statistical significance. Results from research question 3 indicated statistical significance on the variable age indicating that age is a predictor of congruence between vocational evaluation recommendations (VER) and individual plan for employment goals (IPE). Results from research question 4 indicated statistical significance on the variables age and gender indicating that both age and gender are predictors of congruence between vocational evaluation recommendations (VER) and employment outcomes (EO). Results from research question 5 indicated statistical significance on the variable primary disability indicating that primary disability is a predictor of congruence between the individual plan for employment goals (IPE) and employment outcomes (EO).

Discussion

The purpose of this study was to ascertain the extent to which vocational evaluation recommendations impact successful employment outcomes with a focus on the lack of information related to vocational evaluation recommendations and successful employment outcomes of individuals receiving vocational rehabilitation services in Alabama.

Prior to discussing the major findings of this study, it is important to first address two interesting observations revealed through the descriptive statistical analysis process concerning participant demographics. One interesting observation is in reference to primary disabilities. The results indicated that those with cognitive impairments made up 79% of participants in the study. Cognitive impairments, according to the federal disability categories, includes those disabilities involving learning, thinking, processing information, and concentration. The second interesting observation concerns participant age. The results indicated that 81% of the participants were between the ages of 18 and 30 with the majority of those being 21 years old. Less than 20% of the participants were between 31 and 65 years old. These observations indicate that the majority of successfully closed cases are composed of young adults between the ages of 18 and 30 with cognitive impairments. A plausible explanation for this might be drawn by comparing these data with the employment outcome data, specifically the types of jobs obtained by the majority of those cases successfully closed.

After a review of the frequency counts on employment outcomes, it was determined that the top three jobs for all participants were (a) 17% (52) food preparation and serving occupations, (b) 14.4% (44) personal care and service occupations, and (c) 11.5% (35) transportation and material moving occupations. These outcomes are supported in other studies that address employment outcomes of those with disabilities (Hagner, 2000; “New Office for Disability Issues”, 2006; Walls & Fullmer, 1997). According to Walls and Fullmer (1997), the top five occupations held by those individuals of all disability types achieving competitive employment through the state-federal vocational rehabilitation system were considered to be in the secondary labor market, (a) janitorial, (b) cook, (c) attendant, (d) porter/cleaner, and (e) kitchen worker. These occupations are considered to be in the secondary labor market because

they offer lower pay, require fewer skills, and offer little or no benefits (Berger & Piore, 1980; Doeringer & Piore, 1971; Hagner, 2000; Walls & Fullmer, 1997). An article in the 2006 Learning Disability Practice addressed recent improvements in the employment rates among individuals with cognitive impairments as compared to those with other disabilities. While there are better employment outcomes for those with cognitive impairments, the article states that employment options for these individuals are many times limited to those jobs characterized as “food, filth, flowers, and fetching” (New Office for Disability Issues, 2006). Results from the studies conducted by Hagner (2000) and Walls and Fullmer (1997) appear to support the findings in this study, which indicate that those participants with some form of cognitive impairment had more successful employment outcomes. These studies may also support the findings in this study that those individuals between the ages of 18 and 30 had more successful employment outcomes. In this age group the majority are 21 years old. This fact coupled with cognitive impairments and the concept of those jobs in the secondary labor market characterized as “food, filth, flowers, and fetching”, i.e., entry level positions, low skill positions, and low pay may indicate a large population of transition students.

This study examined the extent of congruence among any of the four combinations of the following employment actions (a) vocational evaluation recommendations (VER), (b) individual plans for employment (IPE), and (c) employment outcomes (EO). This study also addressed the extent to which demographic variable(s) best predict congruence across any combination of the same employment actions.

Overall Congruence

In addressing congruence, a review of the results indicated that of the 305 cases in the sample 38.4% (117) were not congruent across any of the four combinations of the employment

actions. This indicates that the consumer obtained employment that was not recommended in the vocational evaluation report or in the individual plan for employment. One plausible explanation might be the consumer exercising his/her choice to not follow the collaboratively developed IPE goal(s). Another explanation might be vocational recommendations and/or employment goals do not match available occupations within the geographic area where the consumer resides. The issue of transportation is another possible explanation. According to Gilbride and Stensrud (2003), transportation has been a persistent challenge to many with disabilities even though, according to a study by Gilbride (2000), one of the most common support services provided by rehabilitation professionals is transportation. Although rehabilitation providers often advocate for improvements in public transportation within local communities, transportation remains a significant issue (Gilbride, 2000; Gilbride & Stensrud, 2003).

Congruence VER, IPE, and EO

In addressing congruence among the four employment actions, results indicate that only 11.8% (36) of the cases were congruent across vocational evaluation recommendations (VER), individual plan for employment goals (IPE), and employment outcomes (EO). This suggests that in 36 of the 305 cases the VE recommendations were incorporated in the IPE and the consumer was successfully placed and closed in the job recommended. The low congruence rate among the remaining 269 cases might be explained by addressing the issues of age, education, and experience. Of the 305 participants in this study 81% were between the ages of 18 and 30. Because of their ages, it is possible that many might be lacking the required experience and education level required for the jobs recommended by the evaluator and counselor. For example, the job recommendation made by the evaluator may be incorporated into the IPE, but if the recommended job requires a high school diploma, GED, and/or prior experience, placement in

that job may be hindered if the consumer fails to meet these requirements. Any one of these issues can block job placement. Many jobs require prior experience, some of which can be obtained early in life. Results from their study, Dixon, Kruse and Van Horn (2003) indicated that 17% of the employers surveyed listed the lack of experience as a barrier to employment. According to the Institute of Rehabilitation Issues (2003) many people begin their careers by working in different jobs until they find a job that fits. This process enables the person to acquire acceptable work habits including the necessary soft skills as well as primary transferable skills. Stensrud (2007) found that those with disabilities have more difficulty moving from job-to-job in an effort to obtain these primary transferable/soft skills. This along with the attitudinal and architectural barriers erected by social/economic systems can increase the chances for unsuccessful closures (Pruitt, 1986). It might possible that some young adults with disabilities may lack the required experience for recommended jobs.

Another possible explanation for the high incongruence among the VER, IPE, and EO could be the lack of a “real” high school diploma. The education level of prospective hires is used as a screening tool for many positions in the workforce. According to Thurlow and Johnson (2003) many employers require applicants to have a regular/standard diploma or the equivalent for job entry. For example, many job postings require a high school diploma or the GED in order to be considered for positions. Many students with disabilities may opt to GED in lieu of a high school diploma.

The General Education Development (GED) is a series of five tests developed and administered by the American Council on Education that assess academic skills and knowledge typically developed in a four-year program of high school education. Upon completion the individual receives a Certificate of GED. In 2001 over 500,000 students in the U.S. graduated

with a GED accounting for 12% of all high school credentials awarded that year (American Council on Education, 2007; Crissey & Bauman, 2012; Quinn, 2002). Many high school students with disabilities bypass both the standard high school diploma and the GED and choose to graduate with an alternative diploma. Results from a study conducted by Thurlow and Johnson (2003) found that 34 of the 46 states that participated in their study offered multiple diploma options. Thurlow and Johnson also noted that few states involved either postsecondary education representatives or employers – two critical groups of stakeholders – in discussions concerning alternative diplomas. One diploma option currently offered four states in the U. S. including Alabama is an occupational diploma. According to Holder (2002), the Alabama Occupational Diploma (AOD) was approved by the Alabama State Board of Education in 1996 as an alternative diploma option for students with disabilities. It was designed to prepare students for competitive employment. The AOD option allows a student to enter employment or continue employment directly upon leaving school. Additionally the occupational diploma was approved as a means of reducing the high dropout rate among students with disabilities which, according to the National Council on Disability (2004) is three to four times higher than the dropout rates of those students without disabilities. Of all youth 18 years and older who do not complete high school 36% have learning disabilities and 59% have emotional/behavioral disabilities. This issue was addressed by Thurlow, Sinclair, and Johnson (2002) who questioned whether or not Title 1 of the No Child Left Behind Act (NCLB) is responsible, in part, for the high dropout rates. They explained that NCLB requires school systems to demonstrate yearly improvements in performance. Students with disabilities are a subgroup within school systems included in the NCLB's accountability system. Although yearly improvements may be evident in students with disabilities, their improvements may not meet the level required by the NCLB,

thereby reducing the school's chances of meeting yearly performance goals. Thurlow, Sinclair, and Johnson suggest that threats to performance goals may encourage some schools to push students with disabilities to drop out of school (Holder, 2002; National Council on Disability, 2004; Thurlow, Sinclair, & Johnson, 2002). According to Holder (2002) by the end of the 1999–2002 school year, over 9,000 students were participating in the AOD option with more than 3,500 graduates. Unfortunately, students who graduate with the AOD will not meet minimum requirements for many jobs because the AOD is not recognized as a valid diploma by many employers. Therefore, graduates with an AOD are screened from the hiring process for many jobs (Holder, 2002; Thurlow & Johnson, 2003).

In summary, the low congruence rate across vocational evaluation recommendations (VER), individual employment plan (IPE) goals, and employment outcomes (EO) might be attributed to (a) standards established by potential employers that include the requirement for prior experience and/or a standard high school diploma; and (b) the education system for promoting alternative diploma options as a viable option for students with disabilities. Possible options for increasing the congruence across VER, IPE, and EO might include (a) increasing awareness among counselors and evaluators of the impact of recommendations and employment plans in the context of alternative diploma options available to consumers, (b) re-evaluate stakeholder involvement in the development of alternative diplomas, and (c) consider the requirements for prior experience in the occupational recommendations made by the evaluator, and (c) develop the IPE using a multi-tier employment goal approach; allowing the consumer to work his/her way up to the recommendations made in the VE report.

Congruence VER and IPE

In examining the congruence between the employment actions; vocational evaluation report (VER) and individual plan for employment (IPE) it was determined that only 36 of the 305 cases or 11.8% were congruent. This suggests that vocational rehabilitation counselors are choosing not to follow recommendations found in the vocational evaluation report. It is also possible that the referral questions neglect to request information on vocational possibilities from the evaluators.

In this study the issue of referral questions requesting specific vocational objectives was addressed. According to the Commission on Accreditation for Rehabilitation Facilities (CARF), referral questions are not always concerned with vocational objectives. In this case, referral questions can be accurately answered and addressed without the need for providing possible vocational objectives (Pete Hathaway, personal communication, November 24, 2009). Information gathered in the evaluation process that does not address specific vocational potential could render any information gathered in the process unusable in developing employment goals, i.e., incongruent. Information in the VE report, according to Ruben and Roessler (2008), "... should not be characterized by vague or ambiguous recommendations. Instead, they should clearly specify feasible vocational objectives for the person to pursue" (p. 327). Therefore, without feasible vocational objectives, the VE report may be of little use in the development of the individual plan for employment goals thus adding to the possibility of incongruence.

Brown and Sink (1986) addressed the issue of not following recommendations by exploring what information the counselor expected in the VE report and what information the evaluator expected to provide. Results of this study might assist in explaining the low

congruence between the employment actions VER and IPE. The results of their study concluded that information expected by the counselor varied somewhat from the information the evaluator expected to provide. In their interpretation of the results, Brown and Sink speculated one of the possible reasons for the incongruence is, “The evaluator may be somewhat more grandiose in their belief regarding what they intend to provide while the referral source expectations may be tempered by realism and a knowledge of what has been received from previous evaluations.” Secondly, Brown and Sink indicated that evaluators may be providing too much information. For example, due to the availability of some standardized psychometric tools, evaluators may tend to administer such assessments routinely to all consumers without considering whether such information is essential. Finally, their study indicated that counselors were uncertain as to whether the evaluator would provide realistic job titles thereby demonstrating a lack of confidence in the vocational evaluation to accomplish its mission (Brown & Sink, 1986). These findings were supported by later research conducted by Lee, Taylor, and Ruben (1994) that examined counselors’ perceived value of vocational evaluation information. According to their results, information traditionally considered important by the evaluator relating to consumer aptitudes, interests, and skills was less important to the counselor than assessment of the functional aspects of the consumer. Brown, McDaniel, and King (1995) explored reasons why counselors use vocational evaluation services and concluded that (a) establishing eligibility or (b) “buying time” for the most difficult consumers are two possible reasons. VR counselors, interested in establishing eligibility may use vocational evaluation services in order to confirm whether or not the consumer meets certain eligibility criteria. According to Ruben and Roessler (2008), a good candidate for vocational rehabilitation services must meet the following criteria: (a) the disability presents a substantial barrier to employment, and (b) it can be reasonably

expected that VR services would benefit the consumer in the pursuit of employment. If there is a question as to whether a consumer meets these criteria, the counselor may seek assistance from the vocational evaluator. Also, counselors who are “buying time” for their difficult consumers may be unsure of the impact a certain disability has on a successful employment outcome. Using the services of the vocational evaluator might help in determining if the consumer would benefit from VR services.

In summary, the high rate of incongruence (88%) between vocational evaluation recommendations (VER) and individual plan for employment (IPE) goals suggest, as did Brown and Sink (1986), the possibility of a difference between the expectations of the counselor and the evaluator. The primary goal of the VR process is to increase an individual’s independence through competitive employment. Successful employment through job development and job search assistance is at the heart of vocational rehabilitation services (Bruyere & Brown, 2003; Hagner, 2003; Ruben & Roessler, 2008). As a vital component of the VR process, the vocational evaluation should be utilized in order enhance the chances for successful employment outcomes. One possible option for increasing employment outcomes is for better communication between the VR counselor and the evaluator. All communications between the counselor and the evaluator, including referral questions, should be focused on the common goal of providing vocational opportunities to all consumers (Ruben & Roessler, 2008 p. 327). This can be accomplished by (a) standardizing the procedure by which referrals are made, including how referral questions are formatted and the expected results; (b) standardizing the procedure by which VE reports are formatted and presented including specifics on possible vocational options for each consumer; (c) increasing awareness among counselors and evaluators of the impact of recommendations and employment plans in the context of alternative diploma options available

to consumers; (d) considering the requirements for prior experience in the recommendations made by the evaluator; and (e) developing the IPE using a multi-tier employment goal approach; allowing the consumer to work his/her way up to the recommendations made in the VE report.

Congruence VER and EO

In examining congruence between the two employment actions of VER and EO it was determined that only 21 of the 305 cases reviewed or 6.9% were congruent. This finding is supported by results from a study conducted by Kosciulek, Prozonic, and Bell (1995) that found VE recommendations were followed in approximately 50% of the cases. Caston and Watson (1990) found similar results in their study that indicated only 31% of the cases reviewed were working in jobs recommended by in the VE report. Both studies speculated that possible reasons for the low congruence rate might include (a) the counselor decided not to follow the VE recommendations and/or (b) the consumer decided not to follow the VE recommendation. The issue of counselors choosing not to follow recommendations made by the evaluator is supported in studies by Brown and Sink (1986) and Lee, Taylor, and Ruben (1994).

Other reasons for incongruence between the VE recommendations and employment outcomes might include (a) consumer age, (b) prior work experience, and (c) education level of the consumer. Approximately 81% of participants in this study were between the ages of 18–30 years indicating the possible lack of prior experience in the workforce necessary for meeting the minimum requirements of VE recommended jobs. Also, students choosing to graduate from high school with an alternative diploma may make them ineligible to apply for jobs that require a high school diploma or GED. For example, students who graduate with an alternative diploma i.e., the Alabama Occupational Diploma (AOD) will not meet minimum requirements for many jobs because the AOD is not recognized as a valid diploma by many employers. Therefore,

graduates with an AOD are screened from the hiring process for many jobs (Holder, 2002; Thurlow & Johnson, 2003).

In summary, the high rate of incongruence (93%) in this study between vocational evaluation recommendations and employment outcomes suggest, as did Brown and Sink (1986) and Lee, Taylor, and Ruben (1994), the possibility of differences among the expectations between the VR counselor and the evaluator. The primary goal of the VR process is to increase an individual's independence through competitive employment. Successful employment through job development and job search assistance is at the heart of vocational rehabilitation services (Bruyere & Brown, 2003; Hagner, 2003; Ruben & Roessler, 2008). As a vital component of the VR process, the vocational evaluation should be utilized in order enhance the chances for successful employment outcomes.

One possible option for increasing employment outcomes is to encourage better communication between the VR counselor and the evaluator. All communications between the counselor and the evaluator should be focused on the common goal of providing vocational opportunities to all consumers (Ruben & Roessler, 2008 p. 327). This can be accomplished by (a) standardizing the procedure by which referrals are made, including how referral questions are formatted and the expected results; (b) by standardizing the procedure by which VE reports are formatted and presented including specifics on possible vocational options for each consumer; (c) by increasing awareness among counselors and evaluators of the impact of recommendations and employment plans in the context of alternative diploma options available to consumers; (d) by considering the requirements for prior experience in the recommendations made by the evaluator; and (e) developing the IPE using a multi-tier employment goal approach; allowing the consumer to work his/her way up to the recommendations made in the VE report.

Congruence IPE and EO

In examining congruence between the employment actions IPE and EO it was determined that 95 of the 305 cases reviewed or 31.15% were congruent. This low rate of congruence could be based on consumers exercising their right to reject recommendations developed in their employment plan. Reasons for accepting employment outside the IPE might include an urgent need of the consumer to accept the first job available. Another plausible reason for incongruence between the individual plan for employment (IPE) goals and employment outcomes (EO) might include (a) consumer age, (b) prior work experience, and (c) education level of the consumer.

Approximately 81% of participants in this study were between the ages of 18–30 years indicating the possible lack of prior experience in the workforce necessary for meeting the minimum requirements of IPE recommended jobs. Also, students choosing to graduate from high school with an alternative diploma may make them ineligible to apply for jobs that require a high school diploma or GED. For example, students who graduate with an alternative diploma i.e., the Alabama Occupational Diploma (AOD) will not meet minimum requirements for many jobs because the AOD is not recognized as a valid diploma by many employers. Therefore, graduates with an AOD are screened from the hiring process for many jobs (Holder, 2002; Thurlow & Johnson, 2003).

Possible options for increasing congruence between the IPE and EO might include (a) standardizing the procedure by which IPE is developed and presented including specifics on possible vocational options for each consumer; (b) increasing awareness among counselors of the impact of employment plans in the context of alternative diploma options available to consumers; (c) considering the requirements for prior experience in the recommendations made in the IPE; and (e) developing the IPE using a multi-tier employment goal approach; allowing

the consumer to acquire the necessary prior experience i.e., work his/her way up to the recommendations developed in the IPE.

Summary

The overall results of research question 1 suggest low congruence rates among the four combinations of the employment actions: VER/IPE/EO; VER/IPE; VER/EO; and IPE/EO. These results appear to be supported by prior research with similar results including low levels of congruence between jobs acquired and recommendations either in the individual plan for employment or the vocational evaluation recommendation (Beveridge & Fabian, 2007; Brown, McDaniel, & King, 1995; Caston & Watson, 1990; Kosciulek, Prozonic, & Bell, 1995; Peters, Scalia, & Fried, 1993). Results in past research noted possible causes for the low congruence to include (a) poor communication between the referring counselor and the evaluator, (b) different expectations as to what information is needed in a VE report, (c) a lack of confidence in the evaluation process by the referring counselor, and (d) consumer choice not to follow recommendations in the VE report or the IPE (Beveridge & Fabian, 2007; Brown, McDaniel, & King, 1995; Caston & Watson, 1990; Kosciulek, Prozonic, & Bell, 1995; Peters, Scalia, & Fried, 1993). Other plausible explanations might include issues with consumer age, educational level, and work experience. The majority of participants in this study were between the ages of 18 and 30 with the majority of these 21 years old. According to Stensrud (2007) and the Institute of Rehabilitation Issues (2003), many of those with disabilities do not have the same opportunities as those without disabilities to acquire transferable skills, making it more difficult to acquire better jobs. High incongruence may be attributed to job recommendations, either in vocational evaluation recommendations or individual plan for employment goals requiring prior experience in order to be qualified to apply. This same concept can be applied to the educational level

attained by this group. According to Holder (2002) and Thurlow and Johnson (2003) students with disabilities who graduate with an alternative diploma, i.e., an Alabama Occupational Diploma are less likely to be hired because many companies will only consider applicants with a high school diploma or GED. If the vocational evaluation recommendations or the individual plan for employment goals suggest jobs that require prior experience and/or a high school diploma then there is a better chance of incongruence. Thus, incongruence can be caused by any number of issues including problems with communications and collaboration between any combination of the following (a) vocational evaluators, (b) VR counselors, (c) education system, (d) business community, and (e) post-secondary institutions.

Binary Regression Results

Research questions 2 through 5 examined the predictive value of demographic variables (age, gender, race, and primary disability) on congruence among VER, IPE, and EO. Logistic regression procedures were utilized to address this.

Findings related to the predictive values of consumer demographics on congruence between employment actions indicated that 117 of the 305 cases (38.4%) obtained employment in jobs different than those recommended by the vocational evaluator or by the vocational rehabilitation counselor. Caston and Watson (1990) found similar results which indicated that 69% of participants in their study found jobs different than those recommended by the evaluator or VR counselor, i.e., only 31% of the cases were congruent among the variables (a) vocational evaluation recommendations (VER), (b) individual plan for employment goals (IPE), and (c) employment outcomes (EO).

In this study, when addressing those demographic variables that best predicted congruence, statistical significance was found in research questions 3, 4 and 5. In addressing

research question 2, the results indicated there was no demographic variable that was statistically significant in predicting congruence among vocational evaluation recommendation (VER), individual plan for employment (IPE), and employment outcomes (EO). Results from research question 3 found that the variable age was statistically significant in predicting congruence between vocational evaluation recommendation (VER) and individual plan for employment (IPE). In addressing research question 4, the results indicated statistical significance on both variables age and gender (i.e., young males) in predicting congruence between vocational evaluation recommendation (VER) and employment outcomes (EO). Results from research question 5 indicate statistical significance on the variable primary disability in predicting congruence between individual plan for employment (IPE), and employment outcomes (EO).

Any statistical significance indicated in this study must be evaluated within the context of the low congruence rates among any of the possible four combinations of the employment actions. For example, the variable age was determined to be statistically significant in predicting congruence between the employment actions of vocational evaluation recommendation (VER) and individual plan for employment goals (IPE), yet, only 11.8% were congruent between the variables VER and IPE. Until the low congruence rates are addressed any statistical significance will be suspect. Also, any statistical significance indicated in this study must be evaluated within the context of the overrepresentation of one population found within the sample. It was determined that the majority of those cases meeting the required criteria for participation in this study were white (70.5%), males (62.6%), 18–30 years old (81%) with cognitive disabilities (79%). Therefore, any statistical significance would indicate a White male, 18–30 with a cognitive disability.

Limitations

In studies addressing vocational evaluation as a function of employment outcomes, it is difficult to identify all the potential causes for the successes and failures. The inability to control for all extraneous variables in any research study can impact validity. One limitation of this study is the threat to external validity made possible by using a sample from only one state VR agency located in one geographic area. This makes it difficult to generalize the results to other populations with disabilities. A second limitation is the sample size. As reported earlier, even though the original sample size of 400 cases met the criteria established by Krejcie and Morgan (1970), at least 95 of the 400 were rejected because, even though there was a vocational evaluation, these cases did not have vocational evaluation reports or they lacked vocational recommendations. Excluding these cases from the study reduced the sample size to 305, which is 26 cases less than the required 331, thereby indicating a possible threat to internal validity through attrition or mortality. Other limitations include threats to internal validity caused by confounding variables; those variables that exist beyond the confines of the rehabilitation process such as (a) the geographic area of the consumer to vocational recommendations, (b) the current labor market, and (c) fluctuations in the economy. Additional threats to internal validity include possible selection bias caused by an over representation of one group in the random sample. In this study the random sample was determined to be over represented by white males, 18–30 years old with cognitive disabilities.

Results from this study provide direction for future research designed to improve employment outcomes for vocational rehabilitation consumers. For example, the replication of this study in other states would allow for a direct comparison of results to determine if similar congruency rates exist in other regions of the country. Another example might include those

studies that involve a qualitative component that allows for follow-up research through the use of interviews with counselors and successfully rehabilitated consumers. Results of these studies could help identify key factors affecting congruency in the rehabilitation process. Other studies might include further research in the area of evaluator and counselor perceptions on the purpose of the vocational evaluation and what kinds of information should be included in a vocational evaluation report. Such studies would better clarify what information is needed as well as what information produces the most successful employment outcomes.

Recommendations

Results of this study help support other research noting the lack of congruence between vocational evaluations recommendations and individual plans for employment goals. While there may be any number of extraneous variables that contribute to the low congruence rate, the fact remains that for some reason few vocational recommendations made by the evaluator are being incorporated into the individual plan for employment and thereby influencing, either directly or indirectly employment outcomes. One recommendation for future research would be to standardize how variables are operationalized. For example, the variable congruence is operationalized differently across studies and includes being defined as (a) visible recognition by the primary investigator, (b) by matching all or part of the occupational codes found in the Dictionary of Occupational Titles (DOT), (c) by matching all or part of the occupational codes found in the Holland Occupational Codes, (d) by a combination of both Holland and DOT codes (Beveridge & Fabian, 2007; Caston & Watson, 1990; Kosciulek, Prozonic, & Bell, 1995; Peters, Scalia, & Fried, 1993). It is recommended that future research the term congruence be operationalized in the same way, i.e., congruence is defined as a match of the first two digits of the SOC codes. According to Patterson (2003), the Standard Classification Code (SOC) is the

occupational classification system used by all federal statistical agencies, making this the logical system to use in operationalizing the term congruent. It is also recommended that congruence be based solely on employment outcomes and not on training or education that might lead to employment. By standardizing the variables are used in research, the results will better indicate areas in need of attention.

Other recommendations include encouraging state vocational rehabilitation agencies to define more clearly the goal of the vocational evaluation in the vocational rehabilitation process. For example, determine if the evaluation is a tool to assist the counselor in determining the eligibility of the consumer or is it a tool to provide recommendations for specific vocational objectives, or a combination of both. Once defined, this goal should be clearly communicated to both the counselor and the evaluator. Additional recommendations include encouraging state vocational rehabilitations agencies to develop policies and procedures that establish standardized formats for vocational evaluation reports as well as policies that address the recommendation process. A final recommendation would be to develop a better means of tracking vocational recommendation in order determine if vocational evaluation recommendations are a viable source for successful employment outcomes. This could be accomplished by requiring (a) specific use of the SOC codes when referring to any vocational objectives; (b) the VE report to address specific vocational objectives; (c) the IPE goals to include VE recommendations; (d) requiring all vocational objectives and employment outcomes be added to the state database; and (e) requiring all amendments to the IPE be added, in terms of vocational objectives, to the state data base.

CHAPTER IV. CONCLUSION

Policy makers over the past four decades have passed legislation intended to increase the employment opportunities for individuals with disabilities. However, a large number of this population remains unemployed and/or underemployed when compared to the general population. Individuals with disabilities are underrepresented in the labor force, particularly in those jobs that provide secure employment, healthy working conditions, and good benefits (Hagner, 2000; Unger, 2002; Wehman, Inge, Revell, & Brooke, 2007).

Vocational evaluation, as a process to promote self-sufficiency, is critical for those with disabilities. Information obtained from a vocational evaluation is a valuable tool used in the vocational rehabilitation process. The vocational evaluation can assist the vocational rehabilitation counselor in laying a solid foundation on which to build a successful vocational rehabilitation plan. An important component of the rehabilitation planning process is the recommendations found in the vocational evaluation report. By incorporating vocational evaluation recommendations in the rehabilitation planning process the chances of successful employment are increased (Institute of Rehabilitation Issues, 2003; Pruitt, 1986).

The purpose of this study was to ascertain the extent to which vocational evaluation recommendations impact successful employment outcomes of those receiving vocational rehabilitation services in the state of Alabama. In order to accomplish this purpose, the following research questions were addressed:

Research Question 1: What is the relationship between (a) vocational evaluation recommendations, (b) individual plan for employment goals, and (c) employment outcomes?

Research Question 2: To what extent do the demographic variables of age, race, gender, and primary disability predict congruence between the (a) vocational evaluation recommendations, (b) individual plan for employment goals, and (c) employment outcomes?

Research Question 3: To what extent do the demographic variables of age, race, gender, and primary disability predict congruence between the vocational evaluation recommendations and individual plan for employment goals?

Research Question 4: To what extent do the demographic variables of age, race, gender, and primary disability predict congruence between vocational evaluation recommendations and employment outcomes?

Research Question 5: To what extent do the demographic variables of age, race, gender, and primary disability predict congruence between individual plan for employment goals and employment outcomes?

The overall results of this study indicate a congruence of less than 32% on any of the four possible combinations of the employment actions (VER, IPE, and EO; VER and IPE; VER and EO; and IPE, EO). The predictive values of the four independent variables age, gender, race, and primary disability indicated statistical significance on age, gender and primary disability. Results from the binary logistic regression procedures should be evaluated within the context of the low congruence rates among the employment actions.

In studies addressing vocational evaluation as a function of employment outcomes, it is difficult to identify all the potential causes for the successes and failures. The inability to control for all extraneous variables in any research study can impact validity. One limitation of this

study is the threat to external validity made possible by using a sample from only one state VR agency located in one geographic area. This makes it difficult to generalize the results to other populations with disabilities. A second limitation is the threat to internal through attrition or mortality caused by the need to reject 95 of the 400 due to the lack of vocational evaluation information. Other limitations include threats to internal validity caused by confounding variables such as (a) the geographic area of the consumer to vocational recommendations, (b) the current labor market, and (c) fluctuations in the economy. Additional threats to internal validity include possible selection bias caused by an over representation of one group in the random sample. In this study the random sample was determined to be over represented by White males, 18–30 years old with cognitive disabilities.

Results from this study provide direction for future research designed to improve employment outcomes for vocational rehabilitation consumers. For example, the replication of this study in other states would allow for a direct comparison of results to determine if similar congruency rates exist in other regions of the country. Another example might include those studies that involve a qualitative component that allows for follow-up research, through the use of interviews, with counselors and successfully rehabilitated consumers. Results of these studies could help identify key factors affecting congruency in the rehabilitation process. Other studies might include further research in the area of evaluator and counselor perceptions on the purpose of the vocational evaluation and what kinds of information should be included in a vocational evaluation report. Such studies would better clarify what information is needed as well as what information produces the most successful employment outcomes.

Recommendations for this study include (a) standardize how terms are operationalized in future research, (b) defining the goal of vocational evaluations, (c) develop policies and

procedures that establish standardized formats for vocational evaluation reports as well as policies that address the recommendation process, (e) develop a better means of tracking vocational recommendation in order determine if vocational evaluation recommendations are a viable source for successful employment outcomes.

REFERENCES

- American Council on Education. (2007). History of the GED Test. Retrieved from http://www.acenet.edu/Content/NavigationMenu/ged/about/history_GED_Tests.htm
- Anthony, W. A. (1980). A rehabilitation model for rehabilitating the psychiatrically disabled. *Rehabilitation Counseling Bulletin, 24*, 6–14.
- Anthony, W. (1994). Characteristics of people with psychiatric disabilities that are predictive of entry into the rehabilitation process and successful employment. *Psychosocial Rehabilitation Journal, 17*(3), 3–13.
- Barnartt, S., & Scotch, R. (2001). *Disability protests: Contentious politics 1970–1999*. Washington DC: Gallaudet University Press.
- Berger, S., & Piore, M. (1980). *Dualism and discontinuity in industrial societies*. New York: Cambridge University Press.
- Berven, N. L. (1984). Assessment practices in rehabilitation counseling. *Journal of Applied Rehabilitation Counseling, 15*(3), 9–14.
- Beveridge, S., & Fabian, E. (2007). Vocational rehabilitation outcomes: Relationship between individualized plan for employment goals and employment outcomes. *Rehabilitation Counseling Bulletin, 50*(4), 238–246.
- Bitter, J. A. (1979). *Introduction to rehabilitation*. St. Louis: C. F. Mosby.
- Bolton, B. (1979). *Rehabilitation counseling research*. Baltimore: University Park Press.

- Bolton, B. (1987). Outcome analysis in vocational rehabilitation. In M. H. Fuhrer (Ed.), *Rehabilitation outcomes: Analysis and measurement* (pp. 57–70). Baltimore: Brookes.
- Bolton, B. F., Bellini, J. L., & Brookings, J. B. (2000). Predicting client employment outcomes from personal history, functional limitations, and rehabilitation services. *Rehabilitation Counseling Bulletin, 44*(1), 10–21.
- Boring, E. G. (1950). *A history of experimental psychology*. New York: Appleton-Century, Crofts, Inc.
- Botterbusch, K. F. (1978). *Psychological testing in vocational evaluation*. Menomonie, WI: Materials Development Center, University of Wisconsin-Stout.
- Brabham, R., Mandeville, K., & Koch, L. (1998). The state-federal vocational rehabilitation system. In R. M. Parker & E. M. Szymanski (Eds.). *Rehabilitation counseling: Basics and beyond* (3rd ed., pp. 41–70). Austin, TX: PRO-ED.
- Brown, S. D., & Lent, R. L. (2005). *Career development and counseling: Putting theory and research to work*. Hoboken, NJ: John Wiley & Sons, Inc.
- Brown, C., McDaniel, R., & King, W. (1995). The role of vocational evaluation in the rehabilitation process. *Vocational Evaluation and Work Adjustment Bulletin, 28*, 91–98.
- Brown, C. D., & Sink, J. M. (1986). Congruence of expectations between referral source and vocational evaluator on selected vocational factors. *Vocational Evaluation and Work Adjustment Bulletin, 19*(3), 129–133.
- Brubaker, D. (1979, spring). Guest editorial: a dialogue on certification of vocational evaluators and adjustment services (work adjustment specialists). The appraisal of one rehabilitation counselor leader. *Vocational Evaluation and Work Adjustment Bulletin, 12*(1), 2–1.

- Bruyere, S. M., & Brown, J. A. (2003). Legislation affecting employment for persons with disabilities. In E. Szymanski, & R. Parker (Ed.), *Work and disability: Issues and strategies in career development and job placement* (pp. 27). Austin, TX: PRO.ED Inc.
- Bureau of Labor Statistics (2010). Standard occupational classification. Retrieved from <http://www.bls.gov/SOC/>
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. USA: Rand McNally.
- Capella, M. E. (2002). Inequities in the VR system: Do they still exist? *Rehabilitation Counseling Bulletin*, 45(3), 143–153.
- Cassell, J. L., & Mulkey, W. S. (1985). *Rehabilitation caseload management: Concepts and practices*. Austin, Texas: PRO-ED.
- Caston, H. L., & Watson, A. L. (1990). Vocational assessment and rehabilitation outcomes. *Rehabilitation Counseling Bulletin*, 34(1), 61.
- Chubon, R. (1992). Defining rehabilitation from a systems perspective: Critical implications. *Journal of Applied Rehabilitation Counseling*, 23(1), 27–32.
- Code of Federal Regulations (34 CFR 361.45).
- Coffey, D. (1978). Vocational evaluator competencies and their relative importance as perceived by practitioners and educators. *Unpublished doctoral dissertation*. Auburn, AL: Auburn University.
- Cole, J. C., & Wilkins, R. D. (1983). The use of work samples in evaluation. In R. A. Lassiter, M. H. Lassiter, R. E. Hardy, J. W. Underwood, & J. G. Cull (Eds.), *Vocational evaluation, work adjustment, and independent living for severely disabled people* (pp. 65–78). Springfield IL: Charles C. Thomas, Publisher.

- Commission of the Accreditation of Rehabilitation Facilities. (1978). Standards manual for rehabilitation facilities. Chicago: Author.
- Cook, D., Bolton, B., Bellini, J., & Neath, J. (1997). A statewide investigation of the rehabilitation counselor generalist hypothesis. *Rehabilitation Counseling Bulletin, 40*, 192–201.
- Corthell, D. W., & Griswald, P. P. (1987). *The use of vocational evaluation in VR*. Memphis, TN: Fourteenth Institute on Rehabilitation Issues.
- Crissey, S. R., & Bauman, K. J. (2012). Measurement of high school equivalency credentials in census bureau surveys: SEHSD working paper number 2012-3. U.S. Census Bureau Social, Economic, and Housing Statistics Division.
- Davis, R. D. (1986 July, August, September). The vocational evaluation and work adjustment association. *Journal of Rehabilitation, 52*(3), 54–58.
- Dictionary of Occupational Titles (1991). Indianapolis, IN: JIST Works, Inc.
- Dixon, K. A., Kruse, D., & Van Horn, C. E. (2003, March). Restricted access: A survey of employers about people with disabilities and lowering barriers to work. *Work trends: American's attitudes about work, employers and government, 3*(6), John J. Heldrich Center on Workforce Development, Rutgers, The State University of New Jersey.
- Doeringer, P. B., & Piore, M. J. (1971). *Internal labor markets and manpower analysis*. New York: M. E. Sharpe, Inc.
- Dowd, L. (Ed.). (1993b). VEWAA glossary of terminology for vocational assessment, evaluation and work adjustment. Menomonie, WI: University of Wisconsin-Stout, Materials Development Center.

- Egerman, K., & Gilbert, J. L. (1969). The work evaluator. *Journal of Rehabilitation*, 35(3), 12–14.
- Farley, R. C., & Rubin, S. E. (1982). The intake interview. In R. T. Roessler, & S. E. Rubin. *Case management and rehabilitation counseling*. Baltimore: University Park Press.
- Featherston, J. F. (2005). *Vocational evaluation and self-efficacy*. Unpublished master's thesis, University of Texas Southwestern Medical Center as Dallas.
- Fry, R., & Harrand, G. (1992, Summer). Vocational evaluation as a career. *American Rehabilitation*, 18(2), 28–30.
- George, D., & Mallery, P. (2000). *SPSS for Windows step-by-step: A simple guide and reference* (2nd ed.). Boston: Allyn and Bacon.
- Gilbride, D. (2000). Going to work: Placement trends in public rehabilitation. *Journal of Vocational Rehabilitation*, 14, 89–94.
- Gilbride, D., & Stensrud, R. (1993). Challenges and opportunities for rehabilitation counselors in the Americans with Disabilities Act era. *NARPPS Journal*, 8, 67–74.
- Gilbride, D., & Stensrud, R. (2003). Job placement and employer consulting: Services and strategies. In E. Szymanski, & R. Parker (Ed.), *Work and disability: Issues and strategies in career development and job placement* (pp. 407). Austin, TX: PRO.ED Inc.
- Hagner, D. (2000). Primary and secondary labor markets: Implications for vocational rehabilitation. *Rehabilitation Counsel Bulletin*, 44, 22–29.
- Hagner, D. (2003). Job development and job search assistance. In E. Szymanski, & R. Parker (Ed.), *Work and disability: Issues and strategies in career development and job placement* (pp. 343). Austin, TX: PRO.ED Inc.

- Hamilton, M., & Shumate, S. (2005). The role and function of certified vocational evaluation specialists. *Journal of Rehabilitation*, 77(1), 5–19.
- Hernandez, B., Keys, C., & Balcazar, F. (2002). Employer attitudes toward workers with disabilities and their ADA employment rights: A literature review. *Journal of Rehabilitation*, 66(4), 4–16.
- Heward, W. L. (2003). *Exceptional children: An introduction to special education* (7th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.
- Holder, C. (2002). The Alabama occupational diploma a promising program option for many. AFCEC Online Journal. Retrieved from http://www.afcec.org/pubs/journal/vol1/04F_Holder.pdf
- Hursh, N. C., & Kerns, A. F. (1988). *Vocational evaluation in special education*. Boston MA: Little, Brown and Company.
- Hursh, N. C. and Price, F. S. (1983). Techniques of vocational evaluation. In R. A. Lassiter, M. H. Lassiter, R. E. Hardy, J. W. Underwood, & J. G Cull (Eds.), *Vocational evaluation, work adjustment, and independent living for severely disabled people* (pp. 96–113). Springfield IL: Charles C. Thomas, Publisher.
- Institute of Rehabilitation Issues 30th. (2003). *A new paradigm for vocational evaluation: Empowering the VR consumer through vocational information*. Arkansas: University of Arkansas.
- Iowa Vocational Rehabilitation Services. (2010). Case service manual, general casework guidelines. Retrieved from <http://www.ivrs.iowa.gov/CaseServiceManual/CaseServiceManualIndex.htm>

- Israel, G. D. (1992). Determining sample size. University of Florida. Retrieved from <http://edis.ifas.ufl.edu/pd006>
- Jenkins W., Paterson, J.B., & Szymanski, E. M. (1992). Philosophical, historical, and legislative aspects of the rehabilitation counseling profession. In R. M. Parker & E. M. Szymanski (Eds.). *Rehabilitation counseling: Basics and beyond* (2nd ed., pp. 1–40). Austin, TX: PRO-ED.
- Joint Task Force on Alternative Certification. (2009). Report to VECAP/VEWAA boards.
- Kennedy, C. H. (2005). *Single-case designs for educational research*. Boston, MA: Pearson Education Inc.
- Kosciulek, J. F., Prozonic, L. A., & Bell, D. (1995 October, November, December). On the congruence of evaluation, training, and placement. *Journal of Rehabilitation*. 20–23.
- Krejcie, R. V. & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607–610.
- Langton, T. (2010). CCWAVES situation: What does this mean? Retrieved from http://www.vewaa.com/profdev/CCWAVES_VEWAA-position.htm
- Leahy, M., Chan, F., & Saunders, J. (2003). Job functions and knowledge requirements of certified rehabilitation counselors in the 21st century. *Rehabilitation Counseling Bulletin*, 46, 66–81.
- Lee, D., Taylor, D. W., & Rubin, S. E. (1994). Rehabilitation counselors' perceived value of vocational evaluation information. *Vocational Evaluation and Work Adjustment Bulletin*, 27(1), 33–37.
- Lesnik, M. J. (1983). Techniques of vocational evaluation. In R. A. Lassiter, M. H. Lassiter, R. E. Hardy, J. W. Underwood, & J. G Cull (Eds.), *Vocational evaluation, work adjustment*,

- and independent living for severely disabled people* (pp. 30–39). Springfield IL: Charles C. Thomas.
- Liptak, J. J. (2001). *Treatment planning in career counseling*. Belmont, CA: Wadsworth/Thomas Learning.
- Lynch, B. (2007, Fall). Frank Bowe (1947-): A profile of the “Father of Section 504”.
Perspectives: News from the Disability Resource Center at the University of California, Santa Cruz.
- Mandeville, K., & Brabham, R. (1987). The federal-state vocational rehabilitation program. In Randall M. Parker (Eds.), *Rehabilitation Counseling: Basics and beyond* (pp. 31–64). Austin, Texas: PRO-ED.
- Marinelli, R. P., & Dell Orto, A. E. (1999). *The psychological & social impact of disability* (4th ed.). NY: Springer Publishing Co. Inc.
- Martin, E. J. (2001). Significant disability: Issues affecting people with significant disabilities from a historical, policy, leadership, and systems perspective. Springfield, IL: Charles C. Thomas, LTD.
- McCray, P. M. (1982). *Vocational evaluation and assessment in school settings*. University of Wisconsin-Stout: Research and Training Center.
- McGuire, A. (2006). New office for disability issues may boost job hopes. *Learning Disability Practice*, 9(5), 7.
- Mertler, C. A., & Vannatta, R. A. (2005). *Advanced and multivariate statistical methods: Practical applications and interpretation* (3rd ed.). Glendale, CA: Pyrczak Publishing

- Missouri's Division of Vocational Rehabilitation (2005). The VR caseload (status) coding system for the state of Missouri. Retrieved from <http://dps.missouri.edu/resources/orient/refrnc/encycl/vrprocess.htm>
- Muthard, J. E., & Salomone, P. R. (1969). Roles and functions of the rehabilitation counselor [Special issue]. *Rehabilitation Counseling Bulletin*, 13.
- Nadolsky, J. M. (1971). Vocational evaluation theory in perspective. *Rehabilitation Literature*, 32(8).
- Nadolsky, J. M. (1983). The development of vocational evaluation services. In R. A. Lassiter, M. H. Lassiter, R. E. Hardy, J. W. Underwood, & J. G. Cull (Eds.), *Vocational evaluation, work adjustment, and independent living for severely disabled people* (pp. 11–16). Springfield IL: Charles C. Thomas, Publisher.
- National Council on Disability (2004). *Improving educational outcomes for students with disabilities*. Washington, DC: National Council on Disability
- Neff, W. S. (1970). Vocational assessment-theory and model. *Journal of Rehabilitation*, 36, 27–29.
- Neff, W. S. (1966). Problems of work evaluation. *Personnel and Guidance Journal*, 24, 682–688.
- Newman, I., Waechter, D., Nolte, D., & Boyer-Stephens, A. (1998, Fall and Winter). An assessment of knowledge domains for vocational evaluators: A precursor to a national licensure examination. *Vocational Evaluation and Work Adjustment Bulletin*, 31(34), 71–79.

- North Carolina Division of Services for the Blind Policies and Procedures. (2008). Case status codes, section C. Retrieved from <http://info.dhhs.state.nc.us/olm/manuals/dsb/VR/man/Case%20Status%20Codes.pdf>
- O'Brien, C. L., & O'Brien, J. (2000). *The origins of person-centered planning: A community of practice perspective*. Responsive Systems Associates, Inc. Retrieved from http://thechp.syr.edu/PCP_History.pdf
- O'Hara, S. (2000 spring). The disability rights and independent living movement. Bene Legere Newsletter of the Library Associates, University of California, Berkeley.
- Patterson, J. B. (2003). Occupational and labor market information: Resources and applications. In E. Szymanski, & R. Parker (Ed.), *Work and disability: Issues and strategies in career development and job placement* (pp. 247). Austin, TX: PRO.ED Inc.
- Peters, H. H., Scalia, V. A., & Fried, H. H. (1993). The effectiveness of vocational evaluation program recommendations and successful outcome by disability type. *Vocational Evaluation and Work Adjustment Bulletin*, 26(2), 47–52.
- Power, P. W. (1991). *A guide to vocational Assessment* (2nd ed.). Austin, Texas: PRO-ED.
- Power, P. W. (1984). *A guide to vocational assessment*. Baltimore: University Part Press.
- Power, P. W. (2000). *A guide to vocational Assessment* (3rd ed.). Austin, Texas: PRO-ED.
- Pruitt, W. A. (1972). *Task analysis of the vocational rehabilitation graduate major with an emphasis in work evaluation: A comparative study of two groups of work evaluators*. Menomonie WI: Graduate College, University of Wisconsin-Stout.
- Pruitt, W. A. (1986). *Vocational evaluation* (2nd ed.). Menomonie, WI: Walter Pruitt Associated.
- Quinn, L. M. (2002). An institutional history of the GED. Retrieved from <http://www4.uwm.edu/eti/reprints/GEDHistory.pdf>

Rehabilitation Act of 1973 (PL 93-112).

Rehabilitation Act Amendments of 1992 (PL 102-569).

Rehabilitation Act Amendments of 1998 (29 U.S.C. 749d).

Rehabilitation Services Administration (2001). Policy Directive RSA-PD-01-03. Retrieved

November 24, 2009. from, <http://www.ed.gov/policy/speced/guid/rsa/pd-01-03.pdf>

Riggar, T. F., Maki, D. R., & Wolf, A. W. (1986). *Applied rehabilitation counseling*. New York:

Springer Publishing Co.

Roberts, R. (1992). Vocational evaluation and planning. In C. J. Long & L. K. Ross (Eds.),

Handbook of head trauma: Acute care to recovery (pp. 371–397). Plenum Press: New

York

Roessler, R. T., & Rubin, S. E. (1982). *Case management and rehabilitation counseling:*

Procedures and techniques. Baltimore: University Park Press.

Rubin, S. E., & Roessler, R. T. (1978). *Foundations of the vocational rehabilitation process*.

Baltimore, MD: University Park Press.

Rubin, S. E., & Roessler, R. T. (2008). *Foundations of the vocational rehabilitation process* (6th

ed.). Baltimore, MD: University Park Press.

Saxon, J. P., Spitznagle, R. J., & Kennison, J. E., (1999 spring). Vocational evaluation:

Perceived professional status. *Vocational Evaluation and Work Adjustment Bulletin*,

32(1), 3–13.

Sharf, R. D. (1993). *Occupational information overview*. Pacific Grove, CA: Brooks/Cole.

She, P., & Livermore, G. A. (2009). Long-term poverty and disability among working-age

adults. *Journal of Disability Policy Studies*, 19(4), 244–256.

- Sherman, S., & Robinson, N. (Eds.). (1982). *Ability testing of handicapped people: Dilemma for government, science, and public*. Washington, DC: National Academy Press
- Shumate, S., Hamilton, M., & Fried, J. (2004). *Vocational Evaluation and Career Assessment Professionals Journal*, 1(1), 25–39.
- Sitlington, P., Clark, G., & Kolstoe, O. (2000). *Transition education and serviced for adolescents with disabilities* (3rd ed.). Needham Heights, MA: Allyn & Bacon.
- Sink, J. M., & Porter, T. L. (1978). Convergence and divergence in rehabilitation counseling and vocational evaluation. *Journal of Applied Rehabilitation Counseling*, 9(1), 5–20.
- Smith, F. (2010 February). A message from you president. *VECAP Newsletter* Retrieved from http://vecap.org/index.php?/site/publications_categories/C25/
- Spieser, A. (1967). The role of the evaluator in a sheltered workshop. In Stout State University, Vocational evaluation curriculum development workshop. Menomonie, WI: Author.
- Spiznagel, R. J., (1995, July–September). A historical perspective. *Journal of Rehabilitation*, 61(3), 54–57.
- Stensrud, R. (2007). Developing relationships with employers means considering the competitive business environment and the risks it produces. *Rehab Counseling Bulletin*, 50(4), 226–237.
- Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences* (5th ed.). New York: Routledge Taylor & Francis Group.
- Tabachnik, B. G. & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). Hillsdale, NJ: HarperCollins.

- Taylor, D. W., Bordieri, J. E., & Lee, D. (1993, Winter). Job tasks and functions of vocational evaluators: A national study. *Vocational Evaluation and Work Adjustment Bulletin*, 146–154.
- Taylor, D. W., Bordieri, J. E., Crimando, W., & Janikowski, T. P. (1993, Summer). Job tasks and functions of vocational evaluators in three sectors of practice. *Vocational Evaluation and Work Adjustment Bulletin*, 39–46.
- Taylor, H. (2000). Conflicting trends in employment of people with disabilities 1986–2000. [Electronic version]. The Harris Poll #59, October 7, 2000. Retrieved from http://www.harrisinteractive.com/harris_poll/printerfriend/index.asp?PID=121
- Test, D. T., Aspel, N. P., & Everson, J. M. (2006). *Transition methods for youth with disabilities*. Upper Saddle River, NJ: Merrill/ Prentice Hall.
- Thomas, S. (1996). A position paper supporting the continued funding of vocational evaluation training by the Rehabilitation Services Administration. *Vocational Evaluation and Work Adjustment Bulletin*, 29(12), 4–8.
- Thurlow, M. L., & Johnson, D. R. (2003). A national study on graduation requirements and diploma options for youth with disabilities. (Technical Report 36). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes. Retrieved from <http://www.cehd.umn.edu/nceo/OnlinePubs/Technical36.htm>
- Thurlow, M. L., Sinclair, M. F., & Johnson, D. R. (2002). *Students with disabilities who drop out of school: Implications for policy and practice*. National Center on Secondary Education and Transition. Retrieved from <http://www.ncset.org/publications/viewdesc.asp?id=425>

- Unger, D. D. (2002). Employers' attitudes toward persons with disabilities in the workforce: Myths or realities. *Focus on Autism and Other Developmental Disabilities, 17*(1), 2-10.
- U. S. Bureau of the Census (2001, March). 2001 Current populations survey. Bureau of the Census for the U.S. Bureau of Labor Statistics, Washington, DC. Retrieved from <http://www.census.gov/aprd/techdoc/cps/cpsmar01.pdf>
- U. S. Census Bureau (n.d.). Disability data from CPS ASEC: CPS 2008 labor force status of persons 16-74. Retrieved from <http://www.census.gov/hhes/www/disability/disabcps.html>
- U. S. Department of Labor. (1999). *Futurework: Trends and challenges for work in the 21st century*. Washington, D.C.
- U. S. Department of Labor, Bureau of Labor Statistics. (2012, January 6). The employment situation – December 2011, Washington, D.C. Retrieved from <http://www.bls.gov/news.release/pdf/empsit.pdf>
- Vash, C. L., & Crewe, N. M. (2004). *Psychology of disability* (2nd ed). New York: Springer Publishing Co. Inc.
- Vocational Evaluation Project: Final Report Part 1 [Special issue]. (1975). The tools of vocational evaluation. *Vocational Evaluation and Work Adjustment Bulletin, 8*, 49–64.
- Vocational Evaluation and Career Assessment Professionals Association (2004). Retrieved from <http://vcap.org/index.php?/site?>
- Vocational Evaluation and Work Adjustment Association, Commission on Accreditation of Rehabilitation Facilities, University of Wisconsin Stout Materials Development Center. (1978). *VEWAA-CARF: Vocational evaluation and work adjustment standards with interpretive guidelines and the vocational evaluation and work adjustment association*

- glossary*. Menomonie, WI: Stout Vocational Rehabilitation Institute Materials Development Center.
- Vogt, W. P. (1993). *Dictionary of statistics and methodology: A nontechnical guide for the social sciences*. Newbury Park, CA: Sage Publications.
- Walls, R., & Fullmer, S. (1997). Competitive employment: Occupations after vocational rehabilitation. *Rehabilitation Counseling Bulletin, 41*, 15–25
- Wehman, P. (1996). *Life beyond the classroom: Transition strategies for youth with disabilities*. Baltimore, MD: Paul H. Brookes.
- Wehman, P., & Moon, M. S. (1988). *Vocational rehabilitation and supported employment*. Baltimore: Paul H. Brookes Publishing.
- Wehman, P., Inge, K. J., Revell, W. G. Jr., & Brooke, V. A. (2007). *Real work for real pay: Inclusive employment for people with disabilities*. Baltimore: Paul H. Brookes Publishing.
- Whitehouse, F. A. (1975). Rehabilitation clinician. *Journal of Rehabilitation, 41*(3), 24–26.
- Workforce Investment Act of 1998 (PL 105220).
- Wright, G. N. (1980). *Total rehabilitation*. Boston: Little, Brown