

The Effects of an Intensive Vocational Evaluation  
Involving Work Samples on Career Indecision, Self-esteem,  
and State Anxiety in Rehabilitation Clients

by

Mark D. Nelson

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APPROVED:

Thomas H. Hohenshil, Chair

Susan Asselin

Harriet Cobb

Martin Gerstein

James Impara

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## Abstract

The work sample approach to vocational evaluation attained prominence in rehabilitation settings largely as a result of dissatisfaction with traditional evaluation methods. Although the predictive validity of work sampling is assumed superior to paper and pencil testing, it is the career development functions that makes work sampling particularly attractive. Frequently writers have extolled the career and self exploration components of work samples.

Among the specific variables work samples are assumed to positively affect are anxiety about making a career choice, career decidedness, and self-esteem. However these career development benefits like the predictive validity of work sampling have largely been unexamined. This study is an initial exploratory investigation of these proposed career development functions. It seeks to determine if undergoing a work-sample-based evaluation is associated with (a) a reduction in anxiety connected with career decision-making, (b) lessened career indecision, and (c) enhanced self-esteem.

To accomplish the aforementioned, 60 clients of a comprehensive rehabilitation center were administered the A-State Scale of the State-Trait Anxiety Scale, the Career Decision Scale, and the Self-Esteem Inventory prior to beginning a comprehensive work-sample-based vocational

evaluation, and again after the evaluation was completed. Three different handicapping conditions were studied with an equal number of subjects in the three groups: (a) mentally retarded, (b) learning disabled, and (c) emotionally disturbed.

Using a repeated measures multivariate analysis of variance, a change in dependent measures scores from pretesting to posttesting was observed. Evaluation activities did not interact with type of handicapping condition to affect these scores. Post hoc analysis indicated positive changes occurred in anxiety associated with career decision-making and self-esteem.

Super's (1983) model of career maturity was employed to examine the career development effects of a work-sample-based vocational evaluation. This model cites the counterproductive effects of anxiety and low self-esteem on career planning, both of which have been validated empirically. Consequently the change in the sample's anxiety and self-esteem are assumed to enhance the probability of career planning. The time between the vocational evaluation and posttesting may have been insufficient for career indecision levels to have changed.

The limitations of the study, are addressed as are the implications of the study for future research.

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## Chapter 1

### Introduction

Vocational evaluation has taken many forms since its inception during the early part of this century. Initially psychometric testing was the preferred method of matching man and job. The early individual intelligence tests and group tests developed for the Department of Labor and the military such as the Army Group Examination Alpha are examples of tests felt to hold great promise for predicting occupational performance (Cronbach, 1970; Neff, 1968). As the psychometric approach developed so did job analysis as a means of pairing work and worker. By functionally assessing man and job demands, job analyst felt positions could be successfully filled (Neff, 1968).

After World War II, vocational evaluation became closely linked to rehabilitation agencies serving disabled war veterans. In this setting both psychometric and functional analysis approaches were found inadequate (Nadolsky, 1969, 1971b; Neff, 1985). Amidst this dissatisfaction, work samples were developed and have since become the preferred approach by those working in rehabilitation settings (Miller and Alfano, 1974; Neff 1985). Work samples are job mockups intended to require clients to perform the same behaviors and tasks in an

evaluation center that would be required on the job site in a corresponding occupation (Neff, 1968). For example, an electronic assembly work sample would involve the manipulation of small tools and components in the actual construction of a circuit board or other electronic device.

The 1960s and 1970s saw a growing interest in career development among vocational evaluators that corresponded to similar interests in other fields. Work samples became viewed by evaluators not only as a predictive assessment device, but as a means to foster rapid career development in adolescents and young adults with little or no work history. Increased occupational knowledge, enhanced self-esteem, reduced anxiety associated with career decision-making, and greater self-awareness were linked to work sampling by advocates of this approach (Nadolsky, 1976b; Sinick, 1962).

The intuitive appeal of work samples and its proposed outcomes can be viewed from a theoretical perspective. Super in proposing his model of career maturity (Super & Thompson, 1979), suggested low self-esteem, anxiety, and a lack of self knowledge and career information hinder career planning and development. These counterproductive characteristics can be reduced or minimized in effect according to proponents of work sampling (Nadolsky, 1969; Sakata and Sinick, 1965; Sinick, 1962) with the likelihood

of career planning correspondingly enhanced. A willingness for career planning or as labelled in the longitudinal Career Pattern Study as acceptance of responsibility (Super & Overstreet, 1960) must, according to Super (1983), precede decision-making. Perhaps in recognition of this, evaluators using work samples seek active client involvement in the evaluation process (Nadolsky, 1969).

As would be predicted from Super's career maturity model (Super, 1983), anxiety and low self-esteem have repeatedly been found empirically related to career indecision (Hartman & Fuqua, 1982; Hartman, Fuqua, & Blum, 1985; Hawkins, Bradley, & White, 1977; Walsh & Lewis, 1972) and an unsatisfying career choice (Korman, 1966, 1967, 1968). These studies also confirm the well-known link between anxiety and avoidance (Bandura & Walters, 1963; Eysenck & Rachman, 1965), is applicable to career planning.

Vocational evaluators note that although work sampling does not directly address anxiety, work sample assessment does not allow a client to act on his/her anxiety by avoiding considering the appropriateness of certain careers (Nadolsky, 1976b). This along with the concrete nature of work sampling has lead some proponents to suggest disruptive anxiety is counteracted by a vocational evaluation involving work samples (Sakata & Sinick, 1965). Certainly the client is confronted with job tasks that resemble those of actual

jobs but in a less threatening way than temporary job placement. With work samples a client may remain anxious, but by their nature work samples promote learning about a task and one's attitude towards it, despite earlier avoidance of career planning.

From a logical/intuitive basis or from Super's theory of career maturity, a work-sample-based vocational evaluation should enhance the likelihood of serious career decision-making.

#### Statement of the Problem

Work represents one of life's major developmental tasks and receives its greatest emphasis in America (Neff, 1985). Only the importance attached to family can rival that attached to work (Murphy, 1973). Identity is so closely linked to one's vocation that most people when asked what they are, respond with what they do vocationally. Erickson (1968) tells us work fulfills one's identity.

Even with the strong emphasis on work, the preparation of youth for the world of work is frequently inadequate (Tennyson, Hansen, Klaur, & Antholz, 1980). The transition from education to work is often neither smooth nor gradual (Stern, 1977). For many, formal education ends by default before the acquisition of necessary life skills (Brolin & Elliot, 1984). Others will prematurely terminate their education in part because present school experiences are not

perceived as preparing them for work (Tennyson, et.al., 1980). Many years go by before some secure employment while others may have only a history of temporary jobs well into their 20s (Will, 1984). Statistics clearly indicate the handicapped have trouble moving from school to work (Benz & Halpern, 1986; Humes, 1982) and are disproportionately represented in the ranks of the unemployed and underemployed (Brolin, 1982; U.S. Commission on Civil Rights, 1983).

Research shows the employment difficulties of the handicapped so apparent when formal education ends are preceded by years of less obvious but persistent career immaturity and indecisiveness (Bingham, 1975, 1978, 1980; Goldberg, 1981; Karayanni, 1981). In response to this research, numerous educational programs have been developed to promote the career development of handicapped adolescents prior to school completion (Brolin, 1983; Hummel & Humes, 1984). Frequently included in these programs are vocational evaluation activities, usually work sampling, specifically designed to foster career development (Johnson, 1979; Peterson, 1985b).

Although career education programs are hoped to have a substantial positive impact on future employment statistics of the handicapped, career indecision may persist for many - some who have not benefitted from programs and others without access to career development activities while in

school (Brolin & Elliott, 1984). Heightened anxiety, low self-esteem, and a lack of confidence may lead such persons to postpone any serious career exploration (Bingham, 1981) and planning (Humes & Hohenshil, 1985). With a probability of lengthy unemployment these individuals are likely at some point to come in contact with agencies like vocational rehabilitation and undergo a vocational evaluation. The evaluation, in addition to determining vocational capabilities, is thought by evaluators to reduce anxiety, raise self-esteem, and promote career decidedness which ultimately increases the probability of employment (Sakata & Sinick, 1965). These logical assumptions are relatively untested. Consequently one cannot say with confidence that work samples do or do not reduce anxiety associated with career decision-making, decrease career indecision or enhance the self-esteem of handicapped individuals.

This study is an initial effort exploring the effects of an intensive vocational evaluation on these variables with mildly mentally retarded, learning disabled, and emotionally disturbed unemployed adolescents and young adults. The interaction of the treatment with handicapping condition on the instruments measuring the dependent variables is additionally investigated.

#### Research Questions

Designed to address two questions, this study examines

the effects of an intensive vocational evaluation on three career development/psychological variables. These questions are as follows:

1. In the time period taken to complete a work-sample-based vocational evaluation, is anxiety associated with career decision-making reduced, self-esteem enhanced, and career decidedness promoted in handicapped adolescents and young adults?

2. Does the type of handicapping condition mediate the effects of a work-sample-based vocational evaluation on state anxiety, self-esteem, and career decidedness? Handicapping conditions studied are mental retardation, learning disabilities, and emotional disturbances/character disorders.

#### Definitions of Terms

For the purposes of this study, the following operational definitions are used:

##### State Anxiety Associated with Career Decision-Making.

Transitory emotional experiences that "increase in response to various kinds of stress and can be determined for a specific area" (Pushkoff cited in Berger-Gross, Kahn, & Weaver, 1983, p. 213). Feelings of tension, apprehension, and autonomic arousal are characteristic of state anxiety (Smith & Lay, 1974). In this study the higher the score on the A-State Scale of the Spielberger State-Trait Anxiety



Inventory (Spielberger, Gorsuch, & Lushene, 1970), the more intense the state anxiety. As the directions of the STAI have been altered, the state anxiety associated with career decision is measured.

Career Indecision. A condition of not having established a career preference or having little confidence in the tentative choice made. Indecision in this study is reflected by high scores on the 15 Indecision items of the Career Decision Scale (Osipow, 1980). Career decidedness is a term implying the opposite of career indecision.

Self-Esteem. The attitudes one has towards the self (Coopersmith, 1967) with high scores on the Self-Esteem Inventory (Coopersmith, 1967) reflecting greater self-esteem than low scores. In the psychological literature, self-esteem has been described as:

. . . associated with other terms as self-respect, superiority, pride, self-acceptance, and self-love (narcissism). Negative self-appraisal or low self-esteem, is often equated with inferiority, timidity, self-hatred, lack of personal acceptance, and submissiveness. (Coopersmith, 1967, p. 26)

Mentally Retarded. Those Virginia Department of Rehabilitative Services (DRS) clients included in this study who have a disability code of 12. The DRS guidelines are such that any person earning a score more than one standard

deviation below the mean on measures of global intelligence may be considered as mentally retarded.

Learning Disabled. Those Virginia DRS clients included in this study who have a disability code of 13.

Emotionally Disturbed/Character Disordered. Those Virginia DRS clients who have a disability code of 14 - emotional disorder, or 15 - personality disordered and are subjects in this study.

Intensive Vocational Evaluation. For the purposes of this study, an intensive vocational evaluation is that done by Woodrow Wilson Rehabilitation Center (WWRC), a comprehensive rehabilitation center. The average evaluation at WWRC lasts 15 days. A vocational evaluation is defined by the Vocational Evaluation and Work Adjustment Association (1975) as:

A comprehensive process that systematically uses work, real or simulated, as the focal point for assessment and vocational exploration, the purpose of which is to assist individuals in vocational development.

Vocational evaluation incorporates medical, psychological, social, vocational, educational, cultural, and economic data in the attainment of the goals of the evaluation process. (p. 86)

Work Sampling. A vocational evaluation approach using job mockups or close simulations of actual work activity

associated with a particular occupation or position. Work sampling incorporates observations over an extended period of time as well as standardization and statistical rigor (Neff, 1968).

#### Organization of the Dissertation

In Chapter One, a rationale for the study is presented in addition to a general overview. A survey of relevant career choice and vocational evaluation literature is contained in Chapter Two followed by research methodology in Chapter Three. The results of the study and a discussion of the findings are found in Chapters Four and Five respectively. For the reader's benefit, the contents of each chapter are briefly presented at the beginning of each chapter.

## Chapter 2

### Review of the Literature

Topics related to the present study are discussed in this chapter. A brief review of theories of vocational choice, presented first, serves as an introduction to the relationship of vocational evaluation and career choice. A closer examination of Super's self-concept notion of career development (Super, 1957) follows. This theory provides a framework or perspective for relating an intensive, work-sample-based evaluation to career development. Specifically, Super (1983) has made self-esteem and anxiety prominent factors in career planning. The empirical relationships of anxiety and self-esteem to career decision making, constitute the third area of review. Concluding Chapter II is a review of the different approaches to vocational evaluation and an examination of the three measures used in this study.

#### Theories of Vocational Choice

Three models of vocational guidance are examined in this section. The trait-factor approach is examined first because of its historical importance. A review of psychological theories follow with a special emphasis on the typological theory of Holland (1959). Holland's model, although in many respects an elaboration of the trait-factor

approach, is considered a psychological theory (Fredrickson, 1982). Because assessment maintains a prominent position in this approach, its relevancy when discussing vocational evaluation is obvious. Culminating this section are the developmental approaches, including Super's developmental model of career maturity (Super, 1983), as it is from this theory that the effects of a vocational evaluation are viewed.

### Historical Overview

According to Neff (1985), the industrial age gave rise to scientific inquiry into how people choose a vocation. Prior to the late 1800s, he reports, a young person had few viable occupational alternatives. The number of occupations were few in number and most labor was devoted to the immediate production of food. With automation and mechanization, diverse and specialized occupations developed that increased the number of work options while simultaneously interrupting the previous near automatic transition into the occupations of family members. This further increased the political, social, and economic factors related to vocational development and logically became an area of interest, research, and even national concern.

### Parsons and Vocational Guidance

The discontinuous movement from childhood to work was

made especially difficult in America because of the huge influx of people from diverse backgrounds during the late 1800s and early 1900s (Neff, 1968). Frank Parsons, the recognized father of vocational guidance, began working with youth during the first decade of this century in the area of vocational choice. His work evolved into the first systematic approach to vocational guidance (Crites, 1969). The first step in Parsons's three step model involved counseling the client to gain a clear understanding of him/herself. This included aptitudes, interests, ambitions, and limitations. Gaining knowledge of many different lines of work including physical and mental requirements, economic advantages and disadvantages, and opportunities constituted the second step. The final step Parsons proposed was integrating the knowledge of the self and work. By applying true reason to this information, an intelligent and appropriate vocational choice was thought likely (Parsons, 1909).

The matching of men and jobs quite evident in Parson's model, became known as the trait-factor approach. Its impact on vocational guidance has and continues to be considerable (Osipow, 1973). The testing movement that began earlier this century was largely part of the efforts to match men or students with appropriate jobs or programs (Cronbach, 1970). The General Aptitude Test Battery

(GATB)(U.S. Training & Employment Service, 1946), recently revised (U.S. Department of Labor, 1970) developed as an obvious outgrowth of this approach (Cronbach, 1970).

Complimenting the matching process has been the development of literature concerning the world of work like the Dictionary of Occupational Titles (U.S. Department of Labor, 1939) and the Occupational Outlook Handbook (U.S. Department of Labor, 1949), both of which are periodically revised. The efforts to develop means of addressing the first two steps of Parsons' model illustrate the Employment Service's adoption of the matching model (Fredrickson, 1982; Miller, 1973).

#### Psychological Theories of Vocational Choice

Despite the popularity of the trait-factor approach, the matching of abilities and job requirements has been described as overly simplistic and mechanistic (Fredrickson, 1982; Super, 1983). Psychologists have since developed theories that place greater emphasis on such factors as personality, interests, and child rearing on vocational choice. Implicit in psychological theories is the notion people select jobs for reasons other than they have the capabilities of performing the particular job-related tasks. Job satisfaction is viewed as a dynamic construct dependent upon the inter-relationships of a host of factors; consequently counselors operating from a psychological

theory of vocational choice look beyond abilities. Yet as Super (1954) and Fredrickson (1982) have noted, most approaches to vocational guidance are ultimately employing a matching model, even those categorized as psychological theories. The apparent dissimilarities between trait-factor and psychological theories are due to the type and number of traits and factors emphasized.

Roe's Psychological Theory. Among the more popular psychological theories of vocational choice are those of Roe (1956) and Holland (1966). Roe stressed the importance of childhood experiences, including parental childrearing practices on the development of needs. Unmet childhood needs, she theorized, are met or satisfied by one's occupational choice. Because persons with similar needs choose similar occupations, vocational choice can, according to Roe, be predicted.

Holland's Typological Theory. Like Roe, Holland theorized vocational preferences are influenced heavily by childhood experiences. He suggested six different personality types are formed by differences in childhood experiences. These six basic worker personalities correspond to six occupational environments. According to Holland (1959), a person seeks and selects an occupation consistent with his worker personality. The more differentiated a person's personality, the greater the



likelihood of job satisfaction if a match of job and basic personality is achieved (Holland, 1968). A number of empirical studies have supported these notions (Holland, 1968; Nafziger, Holland, Helms, & McPartland, 1974; Walsh & Lewis, 1972).

### Developmental Theories

Ginsberg Developmental Approach. In the 1940s, the economist Ginsberg studied the field of vocational guidance and found it to be without a guiding theory. From this conclusion a developmental theory based heavily on the work of the German psychologist Buehler was spawned. The theory developed concurrently with Ginsburg's own study of male students and their career development (Ginsberg, Ginzburg, Axelrad, and Herma, 1951). From this field research, Ginsberg and his associates concluded vocational development begins early in life when a young child fantasizes and explores numerous occupations. The individual develops, increasing in his knowledge of work and simultaneously narrowing his career alternatives. Exploration and career decision-making intensify until a vocational choice is made. This choice culminates a continuous process extending over nearly the first twenty years of life. Later, Ginsberg (1972) revised this early theorizing and stated that development is lifelong and does not climax in early adulthood nor is it immune from compromises at many points.

Super's Self-Concept Theory. While Ginsburg was developing his theory, Super was also borrowing heavily from the work of Buehler in formulating his own theory (Super, 1957). He (1963) notes that:

In expressing vocational preference, a person puts into occupational terminology his idea of the kind of person he is; that in entering an occupation, he seeks to implement a concept of himself; that in getting established in an occupation he achieves self-actualization. (p. 1)

Very explicit in Super's theory is the importance of knowing oneself, formulating a concept of the self. He writes that a self-concept does not exist without the individual being able to express who he is in some rudimentary fashion (Super, 1963). An inability to express concepts about the self would make it impossible to implement these important values and attributes. Without implementation of the self-concepts, job dissatisfaction is likely. Dissatisfaction, anxiety, and low self-esteem may then permeate all areas of living given the pervasive impact work has on human behavior (Hohenshil, Hummel, & Maddy-Bernstein, 1980; Murphy, 1973). However, Super has theorized that negative work experiences, if occurring early in life, may actually facilitate the translation of the self-concept into occupational terms (Super, 1963). For

this reason role-playing and early work experiences are considered exploratory behaviors leading to vocational choice and occupational establishment. Of course there are those who may still fail to formulate and implement a self-concept, most likely to occur if role playing and early work experiences are limited. One would also assume vocational decidedness would increase and the quality of the choice improve with increased hands on exploratory experiences.

A developmental self-concept theory such as Super's, offers several advantages over other theories in examining the vocational development of atypical youth and adults. Trait-factor approaches do not account for differences in the readiness of individuals to make a career choice despite studies demonstrating significant differences in vocational maturity (Jordaan & Heyde, 1979; Super & Overstreet, 1960). Group differences between normal and handicapped youth are also well-documented (Bingham, 1980, 1981; Karayanni, 1977). If one accepts the notion that vocational choice is an implementation of the self-concept, premature choices are cause for concern. A developmental model acts as a tool in determining developmental readiness while simultaneously providing a framework for enhancing readiness. The development of many career education materials and programs are based on the assumption career maturity can be

enhanced.

Determining readiness for vocational choice is more than answering a single question or examining one variable. The model of career maturity developed by Super (1983) outlines precursors to vocational decision-making. According to this model, autonomy, self-esteem, and a time perspective are necessary ingredients of planfulness. When these components are present, there is a willingness to engage in career planning. This acceptance of responsibility, as labelled in the Career Pattern Study (Super & Overstreet, 1960), is unlikely if self-esteem and autonomy are at such low levels there are few beliefs one is competent to control his/her future.

When there is little self-esteem and an external locus of control exists, anxiety may also be present (Hartman, Fugua, & Blum, 1985). This may further decrease the likelihood of serious career planning as fear, anxiety, and avoidance are highly related (Bandura & Walters, 1963). One would also assume a vocational self-concept is unlikely to develop under such conditions and correspondingly there is little likelihood of a commitment to a vocational choice.

#### Self-Esteem, Anxiety, and Career Decision-Making

The inter-relationships between self-esteem, anxiety, and career decision-making has moved beyond a theoretical formulation to a research issue. A growing number of

empirical studies have verified this relationship. The following sections examine the impact of first, self-esteem and then anxiety on the career decision-making process.

### Self-Esteem

As with any psychological construct, there is some although limited debate on how to define self-esteem. Coopersmith (1967) describes self-esteem as "evaluative attitudes toward the self" (p. 2). Wylie (1974) similarly defines self-esteem as "self-regarding attitudes" (p. 128). Frequently the congruence between ideal and perceived self defines self-esteem.

Gelfand (1962) illustrates his concept of what self-esteem is by contrasting low self-esteem with high self-esteem. He writes that self-esteem is:

. . . a person's characteristic evaluation of himself and what he thinks of himself as an individual; low self-esteem is characterized by a sense of personal inadequacy and an inability to achieve need satisfaction in the past; high self-esteem is defined by a sense of personal adequacy and a sense of having achieved need satisfaction in the past. (p. 259)

Although the self-evaluation aspects are quite evident, Gelfand's definition also stresses need satisfaction.

Self-esteem's relationship with other psychological variables is well-documented in the psychological

literature. Its importance in mental health is fundamental and obvious. The correlation between self-esteem and academic achievement has been thoroughly studied with a moderate relationship consistently found (Black, 1974; Bodwin & Bruck, 1961; Brookover, LePere, Hamachek, & Thomas, 1965; Gaudry & Spielberger, 1971). More recently research has been directed at correlations with vocational and career variables, particularly career choice. Korman (1966; 1967) in a series of studies found the career choice of college students with low self-esteem incompatible with their abilities. In contrast, high self-esteem subjects did select careers consistent with their self-judged attributes. The low self-esteem subjects also selected careers incongruent with their own stated needs unlike high self-esteem subjects.

Korman concludes from his studies (1966, 1967) that consistency theory is applicable to career choice. Simply, low self-esteem persons select occupations that will provide negative feedback consistent with their own negative perceptions of the self. High self-esteem individuals will do the opposite finding careers that will meet their needs, match their abilities, and further enhance their self-esteem. Explicitly Korman suggests low self-esteem individuals will experience increasingly less satisfying employment with each job change.

The Korman studies are convincing, given the striking differences found between low and high self-esteem groups and the consistency in results found across samples. Even in view of his numerous replications, caution must be exercised in interpreting results. Korman's subjects were primarily college students and his only measure of self-esteem was scores from the Self Assurance Scale (Ghesilli, 1971). Had he replicated his findings with diverse populations his results would be more convincing. Also despite the popularity of the Self Assurance Scale in industrial psychology research, its reliability and correlations with self-esteem measures used commonly in educational and mental health settings are quite low (Hamilton & Elliott, 1979).

Acknowledging these flaws, Korman's studies are basically sound and cited frequently, however they remain inconsistent with Super's theoretical model. Whereas Korman cites self-esteem as a crucial moderating variable in the selection of a satisfying career, Super's model (1963) suggests a failure to define and implement self-concepts is at work when career indecision is present. The role of self-esteem is important because it is related to a willingness to do career planning (Super, 1983). Korman on the one hand suggests low self-esteem directly causes a nonneed satisfying vocational choice, while on the other

Super's model suggests only an indirect relationship. In other words, low self-esteem may lead to indecision which may in turn result in a nonsatisfying choice. Korman concludes low self-esteem persons intentionally do not implement a self-concept so their work situation will be consistent with their own negative view of themselves. His theory does not address differences that may be due to the absence of a clearly defined self-concept.

Studies directly examining the inconsistencies between Korman's studies (1966; 1967) and Super's proposals (1963) are few. One noteworthy exception, a study by Barrett (Barrett & Tinsley, 1977a, 1977b) with 102 college students, found undecided students tended to have less crystallized self-concepts and lower levels of self-esteem based on an instrument devised for the study. The results were in agreement with Super's formulation relating self-esteem and career planning. However Korman's proposals were not without support. High self-esteem individuals were found more likely to be need satisfying decision-makers, exactly as Korman (1967) found earlier.

Despite considerable study of career indecision, anxiety and low self-esteem, counseling psychology and vocational guidance less so, have given scant attention to the link between low self-esteem and a poor vocational choice. Super's theory predicts that vocational planning,



career decision-making, and exploration may be reduced by lower levels of self-esteem, and implies at least some relationship between unsatisfying work and these variables. Korman's studies (1966, 1967, 1968, 1969), published in industrial psychology journals, offer empirical support for this relationship of unsatisfying career choice and low self-esteem. However Korman attributes this lack of congruence between perceived self abilities and intended vocation requirements as intentional. On the other hand, if operating from Super's model, one would see a poor choice as due to insufficient planning and not that self-esteem per se leads to a poor career choice. Despite the conflicting conclusions of Super and Korman, both give importance to self-esteem in the career selection process.

Besides correlating with seemingly poor vocational choices, self-esteem correlates with choice anxiety, including career indecision. Numerous studies (Barret & Tinsley, 1977a, 1977b; Maier & Herman, 1974; Resnick, Fauble, & Osipow, 1970) have found college students who are most undecided in their career plans have lower levels of self-esteem than career deciders. This has been found especially true for those with chronic choice anxiety. These relationships between anxiety, career indecision, and self-esteem will be examined next.

### Anxiety and Career Indecision

The role of anxiety in career decision-making has been an interest for many researcher in the area of career development. Repeatedly a relationship between the two has been found (Berger-Gross, Kahn, & Weare, 1983; Hartman & Fuqua, 1982; Hartman, Fuqua, & Blum, 1985; Hawkins, Bradley, & White, 1977; Walsh & Lewis, 1972).

Using a simple instrument asking college subjects to rate their level of career decidedness and satisfaction with that decision, Kimes and Troth (1974) found those high in state anxiety were less likely to have made a career choice. They were also less likely to be satisfied with their career choice if one were made. State anxiety was measured using the the A-State Scale from the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970).

In a similar study but one that used the Omnibus Personality Inventory (Heist, McConnell, Webster, & Yonge, 1968) to measure anxiety and the Vocational Preference Inventory (Holland, 1970) to measure vocational interest, Walsh and Lewis (1972) obtained similar results. Their sample was composed entirely of college students.

Some research has found the very act of considering a career choice anxiety arousing. For example, liberal arts students showed elevated state anxiety scores on the State-Trait Anxiety Inventory after completing a

questionnaire on career planning (Berger-Gross, Kahn, & Weare, 1983). Post test administration of the anxiety measure following the completion of a marketing survey found anxiety to be reduced.

The problem of anxiety and avoidance of career planning has been called a vicious circle (Hawkins, Bradley, & White, 1977). Specifically, anxiety leads to avoidance of vocational planning but the avoidance increases concerns and anxiety which makes future planning more threatening and unlikely. Hawkins (et.al., 1977) did find a correlation between anxiety and vocational uncertainty.

From these studies one can conclude that many college students and presumably others that have difficulty choosing a career or major, may experience general and pervasive indecisiveness. Concern has been raised that traditional vocational development and counseling activities including information dissemination are insufficient for these people including providing career information (Fuqua & Hartman, 1983; Salomone, 1982). With choice anxiety as a central feature, avoidance of commitment is present (Goodstein, 1972). Logically it follows such anxiety must be addressed before a counseling may proceed to the career decision-making process (Crites, 1969).

Studies examining either the relationship of self-esteem to career indecision or anxiety to the same

variable are remarkably similar. Chronic vocational indecision is likely accompanied by anxiety related to all types of decision-making and low self-esteem. Studies examining both anxiety and self-esteem clearly bear this out. Theoretically this is expected as anxiety is experienced when there is a threat to a person's self-esteem (Coopersmith, 1967). Unfortunately researchers have not examined if changes in self-esteem and anxiety are accompanied by a corresponding change in career choice, career decidedness, or willingness to do career planning. Such research would clarify the nature of the relationship of these variables. Although present research implies a casual relationship, it maybe that all three variables are affected by another but unknown factor.

#### Vocational Evaluation

The developing status of vocational evaluation is reflected by its recent development as a separate discipline (Nadolsky, 1983). Just 25 years ago its own professional organization, the Vocational Evaluation and Work Adjustment Association, was founded (Couch, 1973). This organization has historically been closely linked with rehabilitation agencies but this may change with the increased attention given to vocational evaluation by public secondary schools (Peterson, 1985a).

Handicapped or disadvantaged clients of public schools

and rehabilitation agencies have historically been the beneficiaries of vocational evaluations (Neff, 1985). The length and methods of these evaluations vary widely depending on the adopted approach. If predominantly psychometric in nature, one would expect heavy reliance on familiar personality, intelligence, and interests tests. Paper and pencil tests like the General Aptitude Test Battery (U.S. Department of Labor, 1970) or a test of motor coordination like the Pennsylvania Bi-Manual Worksample (Roberts, 1969) are examples of instruments used when the psychometric approach is the preferred one. The time necessary to complete this type of evaluation would vary but quite likely testing could be completed in a day or less. With group tests and machine scoring, staff time is minimized and the number of clients evaluated maximized.

Despite its time efficiency, vocational evaluators and career educators have expressed concerns over an evaluation that relies heavily on psychometric tests (Brolin, 1982; Couch, 1973; Nadolsky, 1971a; Neff, 1970, 1985). Tests have been criticized for having a middle class orientation, as anxiety provoking with disadvantaged persons, for lacking face validity (thereby lowering the motivation of clients), and of questionable validity and reliability for atypical populations (Nadolsky, 1971a, 1971b). Neff (1970) notes that even well-developed tests with excellent psychometric

properties do not account for more than 20-30% of the variance in predicting job success. For this reason he suggests vocational evaluations be situational in nature. By assessing a person in a real or simulated work environment, he argues one observes such important vocational attributes as interpersonal skills, job attitudes, hygiene, and adherence to safety practices. Trial placement in an actual work environment like a sheltered workshop or work station is one form of situational assessment.

A third approach to vocational evaluation much like situational assessment involves work sampling. A work sample is a job mockup (Neff, 1968) that simulates an actual job in as many respects as possible. It is assumed by advocates of this approach that assessment practices used to predict vocational success should resemble the criterion as much as possible (Rosenberg, 1973). Correspondingly, if one wished to predict success as a baker's helper or plumber's helper, a separate sample related to each occupation would be needed. Commercially prepared work samples have been standardized and norms are available to enhance predictive efficiency. These packaged assessment devices include tasks from a variety of jobs and performance on these samples are purported to be useful in predicting performance on hundreds of other jobs. Vocational evaluators often develop their

own work samples to match the local labor market. In such cases the evaluator would be responsible for norming the work sample and the predictive validity could be expected to vary depending on the care given to the development of the sample (Neff, 1985)

Studies on vocational assessment involving more than a small number of standardized tests are few with little research comparing the different approaches to evaluation. This was noted 20 years ago (Sakata & Sinick, 1965), and holds true for the present (Chandler, 1983). In the absence of empirical research, work samples have gained the support of rehabilitation agencies (Stout, 1973). A survey of rehabilitation counselors found overwhelming preference for evaluations largely dependent upon work samples (Miller & Alfano, 1974). Respondents voiced greater confidence in results including recommendations when work samples were used. Apparently the increased costs of a work-sample-based evaluation over one using traditionally psychometric instruments (Rosenberg, 1973), were felt to be worth it.

The popularity of work sampling is not simply a reaction against the perceived unfairness or inadequacies of psychometric instruments. Barton (1970) advocates work sampling because of its career development functions. Specifically work samples allow an individual an opportunity to explore occupations that may have previously been unknown

to him (Herr & Cramer, 1979). More importantly, the evaluatee has an opportunity to interact with job tasks and ascertain his/her interests and capabilities in a firsthand fashion (Hoffman, 1969). In other words, self-evaluation can occur which may lead to a formation of a clearer and more realistic vocational self-concept than would otherwise be possible with psychometric testing alone.

The emphasis on career development is reflected in a recent definition of vocational evaluation. Davis and Ward (1978) state, "vocational assessment is a systematic process whereby students gain insight into their vocational potential - abilities, interests, and the work environment best suited to them" (p. 22). Agreeing, McCray (1980) has labeled exploration as the primary goal of vocational evaluation. Sax (1971) writes that self-evaluation is the major asset of work sampling. For career exploration purposes, work sampling has major advantages over other methods as it is systematic and enhances self-awareness.

In addition to exploration of the self and the world of work, other outcomes of work sampling according to Sinick (1962) are reduced anxiety and enhanced self-esteem, especially to those who have not experienced vocational success. The anxious or indecisive student may feel less uncertainty due to the confrontive nature of work sampling, as the evaluatee directly investigates a task and experiences



his own reaction to it (Rosenberg, 1973). Although reduced anxiety and increased self-esteem are by themselves desired outcomes of work samples, it is the positive influence of these variables on career decision-making that potentially makes work sampling a valued career development tool.

Even with the many proposed career development benefits of an intensive vocational evaluation involving work sampling, empirical research has yet to investigate the existence or magnitude of these benefits. There have been numerous calls from the rehabilitation field for empirical research on work sampling but with little response to date (Sinick, 1962; Sakata & Sinick, 1965; Couch, 1973). As a result, the field of vocational evaluation operates from a logical or quasi-theoretical base, not an empirical one (Gellman, 1968).

Reasons for the lack of research are many. It has been suggested that because vocational evaluators work almost exclusively in applied settings, they individually lack the time and interest in gathering data for publication (Couch, 1973). Related to this is the diversity in educational backgrounds of evaluators. Few are specifically trained to be evaluators or may themselves lack the commitment to the field found in other more clearly defined professional groups (Nadolsky, 1971c; Neff, 1970). Yet another hindrance is the ambiguous nature of evaluation and instruments used

(Ghesilli, 1955). Predicting job success is only straight forward if one uses an all or none approach. In other words, securing and holding a job for which one was recommended is considered a success and all others failures. Such a simplistic classification schema does not account for shifts in the local or national economy, what would have happened in the absence of any vocational evaluation, and many other factors that may mask the effectiveness of vocational evaluations.

Attempts to measure the career development benefits associated with vocational evaluation would experience problems. Evaluation involving work samples, even if intensive, requires 2-4 weeks to complete (Neff, 1985). Changes in vocational self-concept, career decidedness, anxiety, and self-esteem would need to occur rapidly to be measured. Even should changes occur, available instruments may be too insensitive to measure them. An additional measurement difficulty is determining when such changes occur. It could be that such changes are immediate or the true effects of a vocational evaluation may develop long after the actual completion of the evaluation. Such complexities also discourage research.

#### Instruments Measuring the Career Development Outcomes of an Intensive Vocational Evaluation

The career education movement that was given a major

impetus by the interest and financial support of the federal government in the 1970s (Stern, 1977) has given rise to a number of instruments designed to measure career development and related factors, one of which is included in this study. In this section instruments used in this study are reviewed as well as more general measurement issues surrounding the constructs examined. The instruments that constitute the dependent measures in this research are the Career Decision Scale (Osipow, Carney, & Barak, 1976), the Self-Esteem Inventory (Coopersmith, 1967), and the State Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983).

#### State-Trait Anxiety Inventory

The Anxiety-State (A-State) Scale of the State Trait Anxiety Inventory (STAI) is a 40 item, two scale test developed to measure state anxiety and trait anxiety (Spielberger, et.al., 1983) It is theory-based and assumes there is a distinction between the trait and state notions of anxiety (Cattell & Scheier, 1961). By definition, trait anxiety is stable across environments and as such is resistant to events surrounding the individual. In practical terms, trait anxiety describes how a person generally feels and reflects overall anxiety proneness. In contrast state anxiety is the degree of tension an individual experiences at the moment.

The two scales are highly similar. When completing the Anxiety Trait Scale (A-Trait) of the STAI, an individual is asked to respond using a four point Likert scale based on how he/she generally feels. Items on the Anxiety State Scale (A-State) of the STAI are very similar but examinees are asked to consider how they feel at the moment. Spielberger (Spielberger, et.al., 1983) suggests that directions for the A-State Scale be altered to "evaluate the intensity of S-Anxiety for any situation or time interval of interest to an experimenter or clinician" (p.3).

Numerous empirical studies support the theoretical distinction between trait and state anxiety. The convincing evidence are the high test-retest reliabilities of the trait scale and relatively low reliabilites for the state scale. Also as one would predict from theory, state anxiety can be manipulated by controlling environmental stressors whereas trait anxiety remains comparatively constant. A review of a small number of studies involving the STAI follows to concretely present its statistical properties. It is noted the STAI has been well researched. The Eighth Mental Measurement Yearbook cites 366 studies and journal articles involving the STAI (Buros, 1978).

A series of studies were conducted by Kendall (Kendall, Finch, Auerbach, Hooke, & Mikulka, 1976) on the statistical properties of the STAI and underlying theoretical

assumptions. As expected, factor analysis showed little overlap of the scales on the three derived factors. Specifically, items on the A-Trait scale loaded exclusively on Factor I and A-State state anxiety items exclusively on the two other factors. Further study found A-State but not A-Trait scores affected by a manipulated variable, a college final exam, strong evidence that the STAI does measure trait and state variables. Kendall's studies also found, as predicted, that persons high in trait anxiety were especially affected by stress, in this case watching graphic films of auto crashes.

In a thorough study of the STAI, Bartusch (1976) found the factor structure to be essentially the same as Kendall (Kendall, et.al., 1976) even when directions for both scales were deleted. Also, like Kendall, Bartusch found his college student subjects' stress anxiety levels were affected by current transistory and manipulated events but A-Trait scores remained unchanged. The A-State scores of study participants tested when imagining a beach scene were lower than those of a control group. This showed that state anxiety could decrease as well as increase depending on current conditions.

Unlike the aforementioned analog studies, Newmark (1974) investigated the effects of short term therapy on state anxiety. He found 23 hours of marathon group therapy

significantly reduced the A-State Scale scores of 84 female narcotic addicts in a residential treatment program. as compared to a control group. Trait anxiety remained unchanged. As the changes were striking, this study suggests significant reductions in state anxiety possible with relatively brief interventions.

### Career Decision Scale

The Career Decision Scale (CDS) was developed to identify barriers preventing an individual from making career decisions (Osipow, 1980). Since its inception as an outgrowth of a proposed modular system to promote counseling about career indecision (Osipow, Winer, Koschier, & Yanico, 1975) it has been used frequently in research with vocationally indecisive students.

The CDS employs a four point likert-type format for all of its 19 items. Respondents are asked if the presented statement is like or dislike him/herself. The last item asks the respondent if the previous items describe him and asks for a self-description by the respondent. This is a clinical item and does not figure into the overall scoring. Otherwise the CDS includes two subscales, the first comprised of items #1 and #2, indicate certainty of choice. The second subscale composed of 16 items inquires about career indecision and possible barriers to a decision. For reason of convenience, summed responses on these subscales

are labelled the Certainty and Indecision scores respectively.

Research with the Career Decision Scale is limited with findings not always consistent. Two early studies reported by Osipow, Carney, and Barak (1976) obtained satisfactory test-retest reliability scores of .902 and .819 with small college student samples. The interval between administrations was two weeks with a much lower figure of .70 obtained by Slaney (Slaney, Palko-Nonemaker, & Alexander, 1981). Osipow (1980), in examining the difference, noted that the decisional status of Slaney's subjects may have changed in the time period between scale administrations. The lower retest obtained by Slaney can be conceived as supporting Osipow's contention. The small sample sizes hinders comparisons between studies.

Factor analytic investigations of the CDS have obtained somewhat similar findings, although some differences have been noted. With the standardization sample four factors accounted for 81% of the total variance (Osipow, Carney & Barak, 1976). Eight items, numbers 5, 7, 8, 10, 11, 13, 14, and 17 loaded heavily on Factor I which indicated a lack of structure and confidence in vocational decision-making. The second factor, defined best by items 3, 12, 16, and 18, appeared related to external barriers to a preferred choice. An approach-approach conflict best described the

third factor of five items, numbers 4, 5, 16, 17, and 18. Osipow labeled a fourth factor of items 6 and 7 as a personal conflict factor.

Using a varimax solution, Slaney and others (Slaney, Palko-Nonemaker, & Alexander, 1981) found three factors emerging from their data on over 800 college students. The factors accounted for 53% of the variance, significantly below the .81 figure reported by Osipow (Osipow, et.al., 1976). The first factor was nearly equal to that found by Osipow (Osipow, Carney, & Barak, 1976) in clarity and item loading. The overlap of the other factors prompted the authors to describe them as "virtually uninterpretable" (p. 97). In yet another sample (Slaney cited in Osipow, 1980), factor structure was similar to found with the standardization sample.

Unlike most studies involving the CDS, Hartman and Hartman (1982) used the CDS in investigating the decisional status of high school seniors. Using scores on three statistically derived factors, the authors were able to predict with an 80+% hit rate students who would be remain career decided and who would remain undecided one year from graduation. A second discriminate analysis conducted one year later again obtained a high hit rate but only two factor scores were significant contributors (Hartman, Fuqua, & Hartman, 1983). A number of possibilities exist why the



third factor failed to predict decisional status two years later. Primary among these was the considerable overlap of the third factor with other factors. Also because only two highly dissimilar conditions were predicted, (a) having the same career choice at graduation and at followup and (b) remaining undecided on both occasions, a small number of variables could account for most of the nonrandom variance.

Although factor analytic studies have obtained somewhat similar findings, significant differences are present. Dividing the CDS into subscales based on factor analysis is unsupported. Further research investigating the validity of the CDS by using different samples and factor analysis would further promote the understanding of this instrument and interpretation of factor scores.

#### Coopersmith Self-Esteem Inventory

The Self-Esteem Inventory (SEI) is just one of numerous instruments purported to measure self-esteem. In a multitrait-multimethod study of frequently used self-esteem instruments, substantial convergent validity was found for the construct of self-esteem (Tuinen & Ramaniah, 1979). Based on this study using college students, the researchers concluded the SEI was "a good choice if one is looking for a short global self-esteem inventory" (p. 23). Crandall (1973) included the SEI in his list of the ten best instruments measuring self-esteem.

Coopersmith (1967) developed the inventory to measure attitudes toward the self in a study of the self-esteem of fifth and sixth graders. Items were drawn from the work of Rogers and Dymond (1954) and the author's own previous research. Initial standardization was accomplished on a sample of 125 children with a a 50 item scale. The scale was reduced to 25 items that had a correlation of .95 with the original scale (Coopersmith, 1967). This later scale was then modified for use with adults. Correlations between the adult-form and the shortened original form exceeds .80 (Coopersmith, 1981).

Individual items on the Self-Esteem Inventory include a short phrase which the respondent indicates as being like or unlike him/herself. Concerns involving peers, family, school/work, and one's personal interests are addressed by individual items. An attempt at balance has been made as high self-esteem is indicated with the response "like me" on 8 items and "unlike me" on 17 items. Inter-item correlations were quite low in a study of 453 college students with average absolute correlation between items near .13 (Taylor & Reitz, 1968). The test-retest reliabilities for five week and three year intervals were .88 and .70 respectively (Coopersmith, 1967). Both figures were obtained with samples of children.

Although Coopersmith developed his scale to report a

unitary construct, factor analysis has been attempted. Crandall (1973), in two separate studies uncovered four factors that he has labelled as self-derogation, leadership-popularity, family-parents, and assertiveness-anxiety. The factor labelled family-parents was found to be the strongest but Crandall does not report in detail the item loadings and how factor scores may be used.

The developed body of literature on the Self-Esteem Inventory suggests it is a reliable measure that correlates strongly with other popular measures of the same construct. Although developed for pre-teenage children, studies of its use with college samples indicate it to be appropriate for adolescents and young adults as well as young children.

## Chapter 3

### Methodology

The purpose of this exploratory study was twofold. First it examined changes in vocational rehabilitation clients who participated in an intensive vocational evaluation on selected psychological and career development variables. Specifically, it sought to determine if clients' (a) anxiety associated with career decision-making, (b) career indecision, and (c) self-esteem changed in a positive direction during the time in which they participated in an intensive work-sample-based vocational evaluation. Second, this study intended to ascertain if such an evaluation differentially affected these variables based on type of handicapping conditioning. In other words, did vocational evaluation activities uniformly affect the state anxiety, career decidedness, and self-esteem of research subjects regardless of handicapping condition? Three handicapping conditions, mild mental retardation, emotional disturbance/character disorder, and learning disabled were compared. The vocational evaluation was work-sample-based.

There have been repeated claims in the career education and rehabilitation literature of the positive effects a work sample evaluation has on a number of variables that promote career development. These factors include career

decidedness, self-esteem, and anxiety (Heer & Cramer, 1979; Peterson, Madden, & Ley-Siemer, 1981; Sakata & Sinick, 1965). However, few if any studies have attempted to determine empirically if such results occur or if type of handicapping condition influences the effects a vocational evaluation has on these variables. These issues were examined in the present exploratory study. The balance of this chapter is a description of research procedures including summaries of the research site, study participants, the dependent variables, and data gathering activities. The data analytic steps are additionally outlined.

#### Research Site

Data were gathered at Woodrow Wilson Rehabilitation Center (WWRC) in Fishersville, Virginia. The Center is a comprehensive rehabilitation facility which includes among its many programs vocational training, vocational evaluation, physical rehabilitation, and development of independent living skills. At any one time roughly 500 individuals are served through the Center's programs. All but a few of these live in the Center's hospital or dormitories. The subjects of this study resided on the Center's campus during the time necessary to complete their respective evaluations.

### Research Population

The 60 research subjects in this study were clients of WWRC undergoing an intensive vocational evaluation through the Center's vocational evaluation department. Equal numbers of mentally retarded, emotionally disturbed/character-disordered, and learning disabled subjects were included. Every client entering the vocational evaluation department after the initiation of the study who met the criteria for inclusion in this study were asked to be participants included until each handicapping condition was represented by 20 clients.

Besides restricting the subject pool to those who had one of the three indicated handicaps, participation was further limited to clients between the ages of 17 and 25, of at least borderline ability and without significant work history. The later was defined as 12 continuous months of full-time employment in one position. Some subjects in addition to being clients of the rehabilitation center were concurrently enrolled in high school.

The 20 mentally retarded (MR) subjects did not necessarily meet the criteria for being classified as mentally retarded according to standards of the American Association on Mental Deficiency (Grossman, 1973) or American Psychiatric Association (APA, 1980), two widely accepted nosologies. The Virginia Department of

Rehabilitative Services classifies and serves clients as mentally retarded who have earned intelligence quotients one or more standard deviations below the mean. The more inclusive rehabilitation standards in essence includes slow learners in the mentally retarded category. The MR group was further restricted to those clients with borderline ability or within one standard error of this range. This translates to scores of 67 or above on Wechsler Scales (Wechsler, 1974, 1982) or 66 (Sattler, 1982) on the Stanford-Binet (Terman & Merrill, 1960). These cutoff scores were established to develop a more nearly homogeneous group and eliminate individuals that may have had significant difficulty comprehending and responding to items on the measures of the dependent variables.

Reported in Chapter IV are demographic data on the groups (mentally retarded, learning disabled, and emotionally disturbed). Included are sex, age, handicapping condition, intelligence test scores (when present), and reading levels. Frequencies, means, and standard deviations of scores on research instruments for the entire sample and by handicap group are also presented.

#### Instrumentation

Scores from the A-State Scale of the State-Trait Anxiety Inventory (STAI), Career Decision Scale (CDS), and Self-Esteem Inventory (SEI), served as dependent measures.

Commercially printed forms of each instrument were used. The original CDS form as modified by Hartman and Hartman (1982) for high school populations is more appropriate for this study than the original. As the principal author of the CDS does not now permit modifications in the test form (personal communication, see Appendix B), subjects were advised to interpret references to college major in items 12 and 18 as vocational training or employment but only if they initiated an inquiry. These changes were similar to those of Hartman and Hartman (1982). Responses to items 3 through 18 are summed to form the CDS Indecision score. Higher scores on the CDS reflect greater vocational indecision. Items 1 and 2 form the Certainty Scale which has received little attention from the author or other career development researchers. For this reason responses on items 1 and 2 were not part of the principal analyses although scores are reported and discussed in Chapter Four and Five respectively.

The commercially marketed adult form of the Self-Esteem Inventory used in this study has instructions printed on the front side with the 25 scale items on the back. Respondents either endorse or reject the items as characteristic of themselves by marking "Like Me" or "Unlike ME." Scoring is accomplished by totaling the checks in the "Unlike Me" column for items 4, 5, 8, 10, 14, 19, 20, and 24 plus the



checks in the "Like Me" column for all other items. Higher scores indicate higher levels of self-esteem. The inventory takes ten minutes on the average to complete (Robinson & Shaver, 1973).

The 20 question STAI A-State Scale has items balanced to control for response set bias (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). Responses on items 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20 are inverted before being summed and added to the other items to obtain the A-State score. Higher scores are suggestive of more intense anxiety. Directions for completing the STAI were altered to reflect state anxiety regarding career decision-making and not general anxiety at the moment of administration. The A-State scale was designed for this purpose. The authors (Spielberger, et.al., 1983) have previously noted:

. . . instructions for the S-Anxiety Scale may be modified to evaluate the intensity of S-Anxiety for any situation or time interval of interest to an experimenter or clinician. Most people have no difficulty responding to the S-Anxiety items according to how they felt in a specific situation or at a particular moment in time, provided the feelings were recently experienced and the person is motivated to cooperate with the examiner. (p. 3)

The directions actually used with the STAI in the

present study were designed to measure emotions felt when considering a career. They read as follows:

A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel at the present time when considering your career choices. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings the best.

#### Design

##### Research Question #1

The first tested question concerned changes in self-esteem, anxiety associated with career decision-making, and career decidedness during the time period taken by subjects to complete a work-sample-based, intensive vocational evaluation. To accomplish this, the pre-evaluation scores of clients on the dependent measures were compared to post-evaluation scores. This pretest-posttest same sample design measures changes occurring in a particular time period and not changes attributed to any single event or variable manipulation occurring during that time.

The independent variable was an intensive vocational evaluation involving work samples. Included were all

aspects of the evaluation. The three dependent measures were scores from the Career Decision Scale, Self-Esteem Inventory, and A-State Scale of the State-Trait Anxiety Scale. Each instrument yielded one score.

With a single independent variable and three dependent measures, the hypothesis that positive changes on these three measures occurred was tested using a repeated measures multivariate analysis of variance (MANOVA). Such an analysis avoided inflating the probability of a Type I error associated with repeated univariate testing. Additionally a multivariate analysis was selected as it is sensitive to changes that univariate analysis may not uncover. Post hoc followup testing of MANOVA main effects had an alpha level of .10. This was identical to that set for main effect testing and is a somewhat liberal figure consistent with the exploratory nature of the study.

#### Research Question #2

In assessing how handicapping condition interacted with a work-sample-based vocational evaluation to effect state anxiety, self-esteem and career decidedness, the same data and analytic procedures used in addressing the first research question were employed. The intent of the analysis was to determine if during the time period taken to complete the vocational evaluation, some activity differentially affected dependent measure scores based on handicapping

condition. A significant interaction of time and group as ascertained by the MANOVA procedure would be supportive evidence that handicapping condition did in some way interact with vocational evaluation activities to impact on state anxiety, career decidedness, and self-esteem.

#### Statistical Analysis

The Virginia Tech Computer Center, Statistical Package for the Social Sciences X (SPSS, 1983), and Number Cruncher Statistical System (Hintze, 1986) aided in the analysis of data. The latter is a software package for personal computers.

#### Independent Variable

The intervention or independent variable in this study was an intensive vocational evaluation involving work samples as routinely done at the research site. As participants in an applied study, procedures used to evaluate subjects were unaltered from the Center's general evaluation practices. The lone exception was that study participants were asked to complete the three instruments used as dependent measures both at the beginning (pretest) and end (posttest) of their individual evaluations. The vocational evaluators who guided clients through the work samples, were made knowledgeable of the general nature of the study through a brief, informal contact with the researcher. Subjects' files, available to evaluation

department staff, were marked to remind counselors post-testing was necessary. Responses made by subjects on the independent measures were not made available to evaluators.

Persons undergoing vocational evaluation arrive at the rehabilitation center on Sunday, Monday or Wednesday afternoon at which time they receive a general orientation to the facility. Three new groups are begun during every two week period. Groups starting their evaluations on Wednesdays contain mature individuals considered more employable than those starting at other times. Their evaluations are relatively brief and for that reason were not included in the study. Numerous disabilities are represented in the groups starting on Sundays or Mondays with only about one-third of the evaluation department clients meeting the criteria for inclusion in this study.

Prior to the initiation of work sample assessment, clients spend a day and one-half in what is called orientation to evaluation. Besides a tour of the evaluation area and audio-visual presentations on vocational evaluation, clients are administered academic tests and a performance measure of intelligence. The results of these tests are used by evaluators as they plan assessment procedures for use with a particular client. For example, nonreaders are given oral directions while written

directions are presented to their reading counterparts. The orientation exercises conclude with a group discussion of evaluation and career aspirations. Each client then indicates on a checklist work samples he/she wishes to try. Selections are reviewed with the assigned counselor. (See Appendix C for the list of work samples available at the rehabilitation center.) Evaluatees are encouraged to request at least three work samples and to add occupations that may not appear on the checklist. Evaluators will construct samples for such occupations.

After orientation was completed and prior to beginning work samples, research subjects were administered the dependent measures. Subjects agreed to inclusion in the study, including giving signed consent (see Appendix D for a copy of the consent form for inclusion in the study) after the study was outlined and their participation solicited. Staff members of the Center but not evaluators, administered the instruments after receiving training from the experimenter. Since the instruments were designed to require no additional instructions than those on the test forms, training focused on the general mechanics of what to administer, the directions given, and the type of assistance to be made available. Subjects whose reading levels were below the fifth grade level were read the items of each scale. Subjects' reading skills were determined from tests

administered by the evaluation staff if skill levels were not otherwise available. (Psychological reports, most often containing reading test scores, generally precede a client's arrival to the Center.) The order of administration for the dependent measures was the State Trait Anxiety Inventory first, followed by the Self-Esteem Inventory and the Career Decision Scale respectively.

Research subjects, as all other clients at the research site, were free to choose which work samples they wished to complete. Although encouragement to try certain work samples occurred, the choice was that of the evaluatee. In this respect, the intervention was not standardized as differences among research subjects as to number and type of work samples selected exist. The length of individual evaluations at the Center varies considerably, lasting anywhere from one to more than four weeks. Fifteen days is the facility's average. The Center provides room, board, and recreation on weekends, but no training or evaluation occurs on Saturdays or Sundays.

Most work samples at the study site have been constructed by the Center's vocational evaluators. The commercially produced JEVS Work Sample Evaluation System (Jewish Employment and Vocation Service, 1969) and VALPAR Component Work Sample (Valpar, 1978) are used to a lesser extent. Up to five evaluatees complete a work sample at any

one time under the supervision of one evaluator. The assistance given clients varies considerably. The printed material and diagrams accompanying work samples are sufficient for some clients to complete a task with minimal guidance from an evaluator. Others receive thorough verbal instructions, demonstration, physical guidance, and feedback. Even when assistance is great, the evaluator allows failure to occur where it may so each client can independently assess the quality of his/her performance. Evaluators review work sample performances with clients and disclose to the evaluatee the potential for employments in areas related to the work sample.

Evaluees with multi-abilities and skills are often recommended for a variety of jobs or corresponding training programs. Others may complete their evaluation and receive no recommendation for employment or training in any area. Although career exploration and development are expected outcomes of a vocational evaluation, much emphasis is given to the accurate prediction of future job outcomes based upon the client's work sample performance.

In addition to work sampling and brief academic testing, medical and psychological evaluations are completed by other departments at the Center if such information is considered necessary and otherwise unavailable. Psychological reports completed prior to the arrival of



subjects of this study were available to the evaluation department's staff. Test scores, whether from previous reports or gathered as part of the vocational evaluation are reviewed with clients. Despite the multi-disciplinary and multifaceted approach to evaluation, the most emphasis is given to work sampling. Little time is devoted to psychological and medical assessment with nonphysically disabled clients such as those included as subjects of the present study.

After evaluation procedures have been completed, the evaluatee and his counselor review all available data. The counselor attempts to integrate this information and present it factually to the evaluatee. The client adds to the data what he/she has learned about himself and various occupations. If a recommendation for training has been made, there is a possibility the client may continue his/her association with the Center.

The last activity for subjects in this study was completing the STAI, SEI, and CDS. Procedures for pretesting and posttesting were nearly identical. The lone exception was that the scales were administered individually by the counselor/case manager. This was necessary as subjects completed their evaluations at different times. Again scale items were read to subjects with low reading levels.

### Summary

This exploratory study was designed to address questions related to changes in disabled adolescents and young adults during the period taken to complete an intensive vocational evaluation involving work samples and how type of handicapping condition mediates such changes. To test the first research question, the pre-evaluation scores of all subjects on the Career Decision Scale, Self-Esteem Inventory, and A-State Scale of the State Trait Anxiety Scale were compared to post-evaluation scores on the same instruments. A significant time effect from a repeated measures multivariate analysis of variance (MANOVA) would indicate that a vocational evaluation involving work samples positively affected the state anxiety, career decidedness, and self-esteem of study participants. Post-hoc testing was designed to determine more specifically what changes occurred.

The second research question concerned the interaction of the work-sample-based vocational evaluation and handicapping condition. Essentially, it asked if mentally retarded, learning disabled, and emotionally disturbed/charactered disordered treatment groups were uniformly affected by the intensive vocational evaluation activities? The same data and analytic procedures used in addressing Research Question #1 tested the second question.

A significant MANOVA time x group interaction F value would indicate if there had been an effect. Throughout the analysis, alpha was set at .10 to decrease the possibility of a Type II, a serious threat in exploratory research.

Relevant demographic data on research subjects are presented in Chapter IV including means and standard deviations. Additional qualitative and quantitative examination of the study's data are reported in the next chapters.

## Chapter IV

### Results

Chapter IV details the analysis of the study's data including the results of statistical testing. The analysis addresses these research questions:

(1) In the time period it takes rehabilitation clients to complete an intensive work-sample-based vocational evaluation, is anxiety associated with career decision-making reduced, self-esteem enhanced, and career decidedness promoted?

(2) Does type of handicapping condition mediate the effects of completing a work-sample-based vocational evaluation on state anxiety, self-esteem, and career decidedness? Handicapping conditions compared are mentally retarded (MR), learning disabled (LD), and emotionally disturbed/character disordered (ED).

Prior to reporting the principal analyses, sample characteristics and demographics are presented. The chapter concludes with a qualitative and quantitative examination of relationships of variables, including but not limited to the dependent measures.

#### Sample Demographics

The 60 subjects in this study were Virginia Department of Rehabilitative Services (DRS) clients undergoing a

vocational evaluation at the Department's Woodrow Wilson Rehabilitation Center (WWRC) in Fishersville, Virginia. Participants were sought over a period of nine months until 20 subjects for each of the three handicapping condition had agreed to participate. Table 1 presents information regarding sex of subjects in each group and for the total sample. Male to female ratios are comparable for the groups although males are over-represented if being handicapped is considered a chance occurrence. However the literature clearly indicates males outnumber females in most areas of exceptionality (Clarizo & Phillips, 1986; Leinhardt, Seewald, & Zigmon, 1982.)

The groups are compared on intelligence quotients (IQ), reading levels, and ages in Table 2. The difference between groups in IQ,  $F(2, 57) = 10.23, p < .01$ ; and reading levels,  $F(2, 57) = 6.67, p < .01$ ; using univariate analysis of variance (ANOVA), were expected given that the differential diagnosis of these handicaps is largely dependent upon intelligence and academic skills. Worth noting are the low mean IQs of all groups, especially the LD group. Only 25% of the LD subjects had IQs above 90, the lower limit of the average range. Seemingly the LD subjects as a whole, do not meet the condition of average or above intelligence, a prerequisite for diagnosing a learning disability according to the most popular definition, that from the Education for

Table 1

Male/Female Ratios by Groups

Group	<u>n</u>	Male to Female Ratio
MR	20	13:7
LD	20	14:6
ED	20	15:5
-----		
Total Sample	60	42:18

Note: MR = Mentally Retarded; LD = Learning Disabled;  
 ED = Emotionally Disturbed/Character Disordered.

Table 2

Demographic Data of Handicap Groups

Handicap Group	<u>n</u>	Mean Age	<u>SD</u>	Mean	<u>SD</u>	Reading Level <sup>a</sup>	<u>SD</u>
				IQ			
MR	20	18.70	1.56	72.80	4.67	5.14	2.31
LD	20	18.35	1.04	84.00	8.10	5.23 <sup>b</sup>	2.14
ED	20	20.15	1.93	86.60 <sup>c</sup>	15.57	7.84	3.32
-----							
Total Sample	60	19.07	1.72	80.64	11.42	6.08	2.90

<sup>a</sup> Reading Level figures are reported in grade equivalencies.

<sup>b</sup> No reading level scores on one LD subject. Figures is based on 19 subjects.

<sup>c</sup> On 5 subjects in the ED group no IQ scores were available. Table figures are based on the remaining 15 subjects.

All Handicapped Children Act, P.L. 94-142. Like the LD group subjects, ED subjects as a group had low average intelligence although the variability was much greater.

Table 3 presents two moderately correlated variables, the average number of work samples attempted by subjects in each group and the average length of evaluation in days,  $r(60) = .30$ ,  $p < .05$ . The length of evaluation was determined by counting the days elapsing between arriving and departing the research site. Using ANOVAS to compare the groups, no differences were found for either the number of work samples attempted  $F(2, 57) = .85$ ,  $p > .05$  or length of evaluation  $F(2, 57) = .88$ ,  $p > .05$ .

The research site, during the time data were being gathered, was involved in a project involving public high schools. Specifically, mildly handicapped public school students who were anticipated to have employment difficulties, were evaluated during the summer between the 10th and 11th or 11th and 12th grade years. Seven of the MR group subjects and 10 from the LD group were part of this project. Additionally, one other LD group subject was concurrently enrolled in high school but not part of the project. The ED group contained only subjects who had either finished or dropped-out of school. Probably due to this, a significant difference in mean ages for the three handicap groups exists,  $F(2, 57) = 7.56$ ,  $p < .01$ . The less



Table 3

Means, Standard Deviations, & Ranges for Length of Evaluation  
and Number of Work Samples Attempted Across Groups

Group	$\bar{n}$	Length of Evaluation (Days)		Number of Work Samples Attempted			
		$\bar{X}$	SD	Range	$\bar{X}$	SD	Range
MR	20	18.40	9.20	10 - 30	5.25	2.12	2 - 11
LD	20	16.10	4.68	13 - 32	4.80	1.47	3 - 8
ED	20	15.95	4.73	10 - 26	4.45	2.16	1 - 10
-----							
Total Sample	60	16.82	6.54	10 - 30	4.83	1.94	1 - 11

than two years separating the average age of the youngest group, composed of MR subjects, from the oldest group, the ED group appears minimal. However given the overall developmental delays of even mildly mentally handicapped persons and volatility of late adolescence, one must conclude the age difference symbolizes the dissimilarity between groups

#### Pretest Comparisons of Groups on Dependent Variables

The mean and standard deviations of each dependent measure obtained before and after completing the vocational evaluation are presented in Tables 4, 5, and 6. Changes on these measures, the Anxiety-State Scale from the State-Trait Anxiety Inventory (STAI), the Career Decision Scale (CDS), and Self-Esteem Inventory (SEI), are discussed later in this Chapter and in Chapter Five. The groups did not differ at pre-evaluation as determined by one way ANOVAs on the SEI  $F(2, 57) = 1.66, p > .05$ ; or STAI  $F(2, 57) = .48, p > .05$ . However similar testing on pre-evaluation CDS Indecision scores found the groups did differ,  $F(2, 57) = 3.33, p < .05$ .

#### Normative Examination of Pretest Scores

By reporting demographic data, researchers give readers means of evaluating and comparing the sample's composition to that of other studies or their own clinical population. Most helpful is normative data like intelligence quotients

Table 4

Descriptive Statistics for STAI A-State Scale By Group

Group	<u>n</u>	Pretest Mean	<u>SD</u>	Posttest Mean	<u>SD</u>
MR	20	43.30	9.65	42.80	10.74
LD	20	40.55	8.27	36.00	10.32
ED	20	43.50	13.43	38.05	11.11
-----					
Sample	60	42.45	10.58	38.95	10.93

Table 5

Descriptive Statistics for CDS Indecision Sale

Group	<u>n</u>	Pretest Mean	<u>SD</u>	Posttest Mean	<u>SD</u>
MR	20	40.80	10.24	38.55	11.55
LD	20	37.95	8.45	35.00	9.70
ED	20	33.40	8.63	33.55	8.96
-----					
Sample	60	37.38	9.50	35.70	10.03

Table 6

Descriptive Statistics for SEI

Group	<u>n</u>	Pretest Mean	<u>SD</u>	Posttest Mean	<u>SD</u>
MR	20	51.80	14.94	56.20	17.86
LD	20	54.80	18.99	67.80	21.54
ED	20	62.00	20.29	62.20	21.81
-----					
Sample	60	56.20	18.42	63.40	20.79

and reading levels as reported in previous paragraphs. For similar reasons it is useful to know in a normative sense the performance of the study's subjects on the dependent measures prior to treatment. These are discussed briefly in the following paragraphs.

State Anxiety Associated with Career Decision Making.

Because instructions were significantly altered in administering the STAI, there is no group to whom the study sample can be reasonably compared. It is apparent the mean pre-evaluation STAI score for the sample of 42.45 is substantially higher than average scores obtained with nondistressed adults on the unaltered version of the STAI and slightly higher than average high school students. Spielberger (et.al., 1983) reports an average Anxiety State Scale score of 35 on the standardized STAI for adults and suggests high school students score about 5 points higher. The appropriate comparison group for the sample is unclear given it is a mix of both students and young adults not much older than high school seniors. Since the instructions for the STAI were changed to measure anxiety associated with career decision-making, a problem area for the unemployed, the high anxiety scores of the study participants were to be expected.

Career Indecision. Normative data on the CDS is limited when compared to the STAI or SEI. However Osipow (1980)

reports mean CDS Indecision scores for several moderately sized samples. High school seniors earned average CDS scores of 27.89 and 34.95 in two separate studies. Mean college freshman scores ranged from 27 to 35 based on several studies reported. Most samples scored nearer the lower figure. Statistics are not available for handicapped groups but one logically would expect greater indecision. This is the case with the study's sample whose average CDS Indecision score of 37.38 is higher than that of any group reported by Osipow, including high school students or college freshmen. Although the CDS Indecision scores for the ED subjects were lower than those of the other subjects, these individuals as a group were still less decided than most samples of high school or college students. Norms for unemployed adolescents and young adults are unavailable.

Self-Esteem. Despite the frequent use of the SEI and positive reviews in the literature, Coopersmith (1981) is opposed to publishing or using national norms. Rather he views the SEI as a research instrument and feels local norms are to be preferred over national norms when making comparisons. Consequently large scale standardization has not been attempted. Rather the SEI manual (Coopersmith, 1981) reports means for relatively small samples. Means for samples of late adolescents ranged from 59 to 73 with figures in the upper 60s most common. The sample's mean

pre-evaluation SEI score 56.20 is roughly one standard deviation below means for nonhandicapped populations.

### Principal Analysis

Main Effects. The effect of the time and activities constituting an intensive work-sample-based vocational evaluation on (a) anxiety associated with career decision making, (b) career decidedness, and (c) self-esteem, was determined by using a repeated measures multivariate analysis of variance (MANOVA). The significant F value,  $F(3, 55) = 6.37, p < .001$  for time (grand effect) signals that between pre and posttesting, the research sample did change. The mean changes for the total sample on each dependent measure are shown in Tables 4 - 6. The direction of change for each measure is consistent with predictions made by leaders in the field of vocational evaluation. However mean score changes as noted later in this section are not all significant when each dependent measure is considered individually.

No interaction of handicapping condition and time, the vocational evaluation, are indicated by the MANOVA analysis as the F test exceeded the alpha level preset at .10,  $F(6, 112) = 1.45, p > .20$ . Therefore the second research question "Do the time and activities of an intensive work-sample-based vocational evaluation interact



with handicapping condition," is no based on the statistical analysis. Visual examination of Figures 1, 2, and 3 shows the LD and MR group changed in similar ways on all measures but there was a trend for the ED to be affected differently by the dependent variable. This is most apparent on the SEI on which the ED group changed little from pretesting to posttesting despite substantial changes for the other handicapped groups. In summary the interaction of the vocational evaluation activities and handicapping condition was statistically insignificant but there appeared a tendency for the ED group to be affected differently than either the LD or MR group.

Post Hoc Analysis. Followup analysis finds that the multivariate difference between pre and post evaluation scores on the dependent measures is principally confined to two of the three variables, the SEI and STAI. Univariate t-tests comparing pre and post-evaluation scores found the change significant for the SEI,  $t(59) = 4.16, p < .01$ ; and STAI,  $t(59) = 2.19, p < .05$ ; but insignificant for the CDS,  $t(59) = 1.24, p > .20$ .

The changes in dependent measures scores from pre-evaluation to post-evaluation are graphically illustrated in Figures 1-3. The changes were in line with predictions leaders in the field of evaluation have made. In other words, self-esteem was enhanced, state anxiety

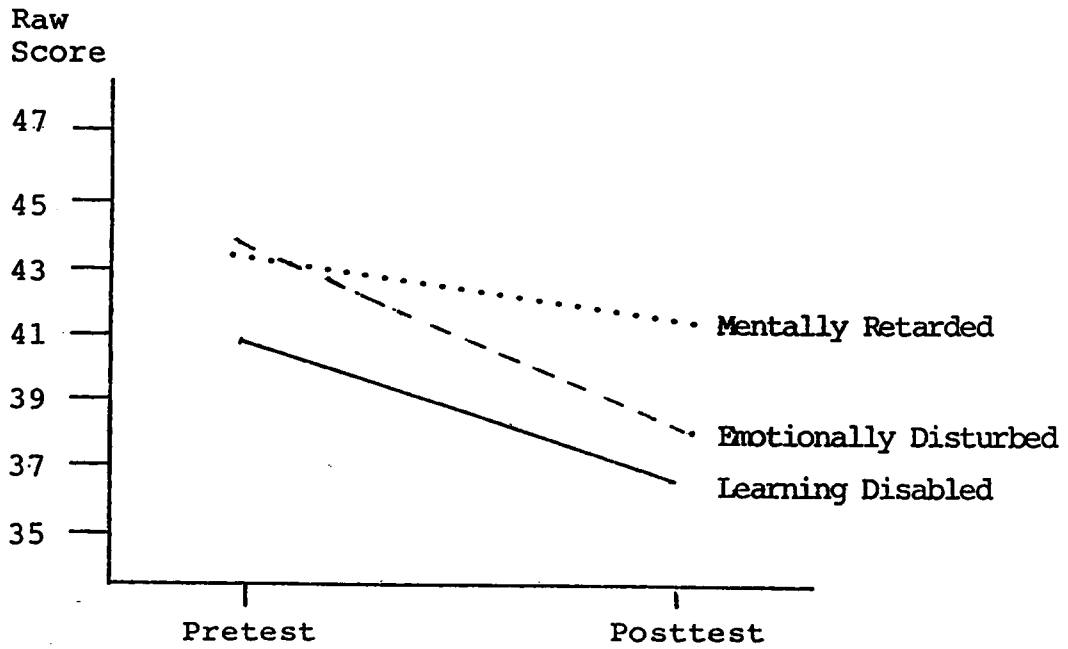


Figure 1

Mean Scores on STAI by Handicap Group

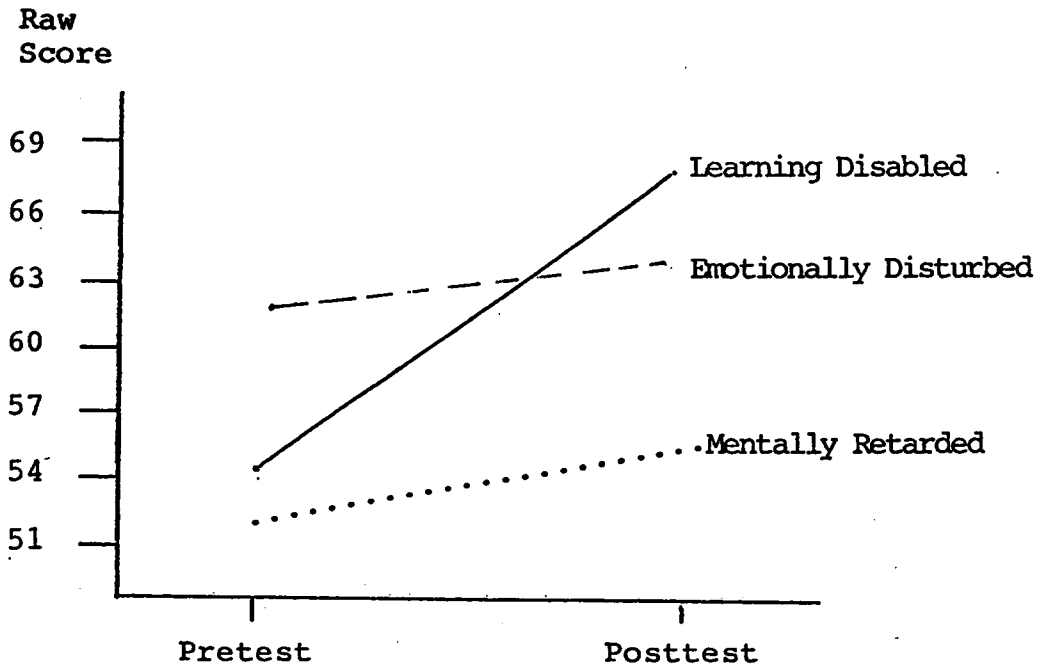


Figure 3

Mean Scores on SEI by Handicap Group

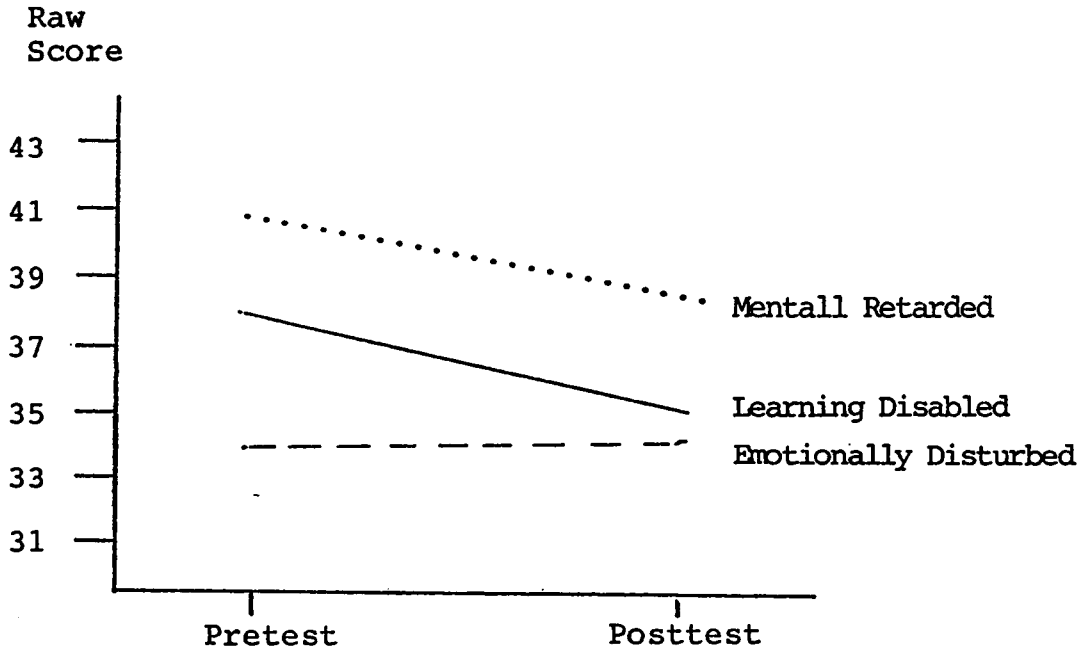


Figure 2  
Mean Scores on CDS Indecision Items  
by Handicap Group

associated with career decision-making reduced, and career indecision decreased. However the latter change was not significant and is therefore at best considered a trend.

### Exploratory Analysis

The following section is devoted to the examination of variables relevant to vocational evaluation but not included in the principal analysis.

Evaluator's Recommendations. In addition to collecting scores on the dependent measures and demographic variables, data regarding the results of subjects' vocational evaluations were gathered. Included were the recommendations of evaluators for each subject. A subject could be recommended for (a) further career exploration/career counseling, (b) to seek training in a particular field, (c) to seek training in one of two or more fields, or (d) to seek competitive employment in a particular area. Subjects who received none of the above recommendations were advised (a) to undergo further evaluation, perhaps in another area, (b) to complete an intensive work adjustment program before further evaluation/training is undertaken, or (c) that at the present employment potential is absent. Some individuals receiving the later may be advised to seek medical assistance or mental health services. Persons receiving no recommendations were few but were those felt not to be

employable nor likely to benefit from further DRS involvement.

Recommendations are presented in Table 7. These are broken down by group and reported for the sample as a whole. For the MR, LD, and ED groups respectively, 12, 17, and 12 subjects were recommended for either training or employment in a particular field. The 11 subjects recommended for work adjustment could possibly enter the research site's own program which is composed predominately of mentally retarded and emotionally disturbed clients.

Career Decision Scale Certainty Items. Items one and two of the Career Decision Scale have been labelled the Certainty Scale (Osipow, Carney, & Barak, 1976). As previously indicated, these items have received scant attention in the literature and were not included in the principal analysis of this study. The pretest and posttest means and standard deviations of the Certainty Scale appear in Table 8 by group and for the total sample. The possible range for this scale is 2-8 as the scale employs a four point Likert scale. The correlations between pre and posttesting scores on the CDS Certainty Scales for the MR, LD, ED, and total sample are .13, .41, .61, and .37 respectively. The latter three correlation are significant at the .05 level.

The lack of change from pretesting to posttesting,

Table 7

Vocational Evaluator's Recommendations

Group	n	None	More Evaluation/ Career Guidance	Work Adjustment	Vocational Training	Job Placement
MR	20	1	2	5	9	3
LD	20	0	1	3	14	2
ED	20	3	2	3	10	2
-----						
Sample	60	4	5	11	33	7

Table 8

Descriptive Statistics for CDS Certainty Subscale

Group	<u>n</u>	Pretest Mean	<u>SD</u>	Posttest Mean	<u>SD</u>
MR	20	5.90	1.89	5.80	1.74
LD	20	5.35	1.46	6.10	1.41
ED	20	5.40	1.90	5.95	1.73
-----					
Sample	60	5.55	1.75	5.95	1.61



$t(59) = -1.64, p > .95$ ; suggests the subjects were as a group no more certain about their vocational choice as a result of the time taken to complete the vocational evaluation. This finding with the Certainty Scale is consistent with the lack of change on the CDS Indecision Scale. Logically if subjects' levels of career indecision did not change, there is unlikely to be an increase in certainty of a vocation choice. However an examination of the figures in Table 9 suggests neither the Certainty nor the Indecision scale appears to be reliable measures given the low correlations between pre/posttest scores of both measures. Of course low test-retest reliability when an intervention occurred between testing does necessarily imply the instrument is unreliable. However with little mean score change between pre and posttesting, there is reason to suspect the Certainty items were unreliable with the study's sample. This and other concerns regarding the CDS are discussed in the following chapter.

Table 9

Correlations Among CDS Certainty & Decidedness Subscales  
at Pre & Post Evaluation Testing<sup>a</sup>

	(1)	(2)	(3)	(4)
	I-Pre	I-Post	C-Pre	C-Post
(1) Indecision-Pre				
(2) Indecision-Post	.421			
	(p .00)			
(3) Certainty-Pre	.357	.219		
	(p .00)	(p .05)		
(4) Certainty-Post	-.031	-.095	.371	
	(p .41)	(p .23)	(p .00)	

<sup>a</sup>All correlations based on 60 cases.

## Chapter V

### Summary and Recommendations

In this chapter the results of the study are summarized, its implications discussed, and directions for future research on vocational evaluation given. Both the strengths and weaknesses of the study are outlined and particular emphasis is given to the relationship of research findings and the practice of vocational evaluation.

#### Overview of the Study

The intent of this study was to address two research questions: (a) Does the anxiety related to career decision-making, career indecision, and self-esteem of rehabilitation clients change during the period taken to complete an intensive, work-sample-based vocational evaluation? and (b) Does the type of handicapping condition mediate the effects a vocational evaluation has on these variables?

The literature suggests work sampling positively impacts on anxiety associated with career decision-making, career indecision, self-esteem and career development in general. For example Sinick (1962) has extolled work samples as reducing anxiety and enhancing self-esteem. Self-evaluation has been described as the major asset of work sampling (Sax, 1971) as has career exploration

(Herr & Cramer, 1979). The avoidance strategies of the handicapped that reduces the effectiveness of many career development efforts (Bingham, 1981), are thought to be minimized by work sampling (Rosenberg, 1973). Although the intuitive appeal of work sampling leads to these assumptions, the need for empirical study has been noted (Couch, 1973; Gellman, 1982; Sakata & Sinick, 1965). It is the career development functions of work sampling that were investigated in this study.

Sixty (60) subjects, 20 in each of the handicapping conditions of mental retardation (MR), learning disabilities (LD), and emotionally disturbed/character disordered (ED), were administered the Anxiety State Scale (A-State) of the State-Trait Anxiety Inventory (STAI), the Career Decision Scale (CDS), and Self-Esteem Inventory (SEI), before and after undergoing a period of intensive vocational evaluation. Study participants ranged in ages from 17 to 25, and had no significant work history. Males outnumbered female subjects by roughly two to one. A repeated measures multivariate analysis revealed a significant time effect, that is scores on some dependent measures changed during the time it took to complete an intensive work-sample-based vocational evaluation. Type of handicapping condition did not interact with the vocational evaluation (treatment) to affect performance on dependent measures. In conclusion,

the answer is yes to the first research question, anxiety related to career decision-making was reduced and some positive changes in self-esteem occurred. Insufficient support was found to say type of handicapping condition interacted with the vocational evaluation, the second principal research question. However examination of mean raw scores showed the ED group was affected somewhat differently by the evaluation activities than either the MR or LD group. (Specifically unlike the MR or LD subjects, the ED subjects as a group changed very little on the CDS and or SEI.) This statistically nonsignificant difference is at best to be considered a trend.

Univariate post hoc testing of the first analysis produced some unexpected results. These are examined and discussed individually by instruments measuring dependent variables in the following section.

#### State Anxiety Related to Career Decision-Making

A univariate comparison of the mean anxiety score for pre and post evaluation testing was significant indicating a change on this dependent measure. The less than four point difference between the pre-evaluation mean score of 42.45 and post evaluation score of 38.95 would appear clinically as a mild change, albeit a positive one.

Because the directions of the A-State Scale of the STAI had been altered to reflect career decision-making, there

are no other groups with which to compare the change of raw scores of this sample. In retrospect a measure of each subject's general anxiety proness such the Anxiety Trait Scale (A-Trait) of the STAI, would have been useful. Logically if the sample was very anxiety prone, the treatment would have greater effect. However that and similar questions remain for future research.

#### Career Decidedness

The total sample's mean CDS Indecision Scores obtained at pretesting and posttesting were 37.38 and 35.70 respectively. Although lower scores are suggestive of less indecision, the difference between these means was not significant. The lack of change was unexpected in light of the overall change as determined by the MANOVA and the nature of the treatment. As nearly two-thirds of the subjects were advised before the second administration of the CDS that they had been recommended for vocational training or placement, seemingly they would be more career decided. If a choice had been made prior to the evaluation, logically one would expect greater confidence in the choice. Also a tentative choice would seem likely where none before existed.

One could theorize that it was the close proximity between reviewing the outcomes of the evaluation to completing the dependent measures that accounts for the lack

of change in career indecision. Subjects could conceivably be relieved and less anxious about their vocational future as a result of the vocational evaluation but yet remain uncertain. Perhaps with time they could internalize the outcomes of their vocational evaluation and begin an identification process with the occupation recommended by the evaluator. A commitment to a career choice cannot develop instantly. Although followup testing would have been extremely difficult with this sample, it might have clarified what the long term effects of work sampling are.

A second hypothesis regarding the lack of change as measured by the CDS is the instrument itself. It may be as Hartman (Hartman, Fuqua, & Jenkins, 1986) suggests, based on a study of college students, that career decidedness is an unstable multi-determined construct. For example if the CDS has a reliability of .60 instead of .90 as reported by Osipow (1980), even a moderate change in career indecision may go undetected. A low .61 reliability was obtained in one no treatment study spanning a two week period (Hartman, Utz, & Farnum, 1979). Unpublished studies by Taylor, Sutera, and Carney (cited in Osipow, 1980) and a published one (Davis & Horne, 1986) report pretest/posttest treatment changes in Indecision scores. This suggests the CDS with some populations is sensitive to changes although this is not guaranteed with all samples.

It should be noted these studies examined changes in career decidedness occurring over the course of several weeks as the result of group counseling or a lengthy career development program. This study examined changes occurring in shorter periods of time but following a more intensive treatment. To summarize, the reliability of the CDS has generally been found adequate but is not assured, especially with noncollege populations.

#### Self-Esteem

The significant change in SEI scores from pre-evaluation to completion was surprising in light of the lack of change on the CDS and the trait-like nature of self-esteem (Utterback, 1979). The means before and after the vocational evaluation were 56.20 and 63.40 respectively. Changes in self-esteem or the larger construct self-concept have not occurred in pretest-treatment-posttest studies or those comparing the treatment group with the control group. Because change is difficult to obtain, self-esteem is often considered an enduring trait rather than some malleable characteristic.

One could hypothesize that the significant self-esteem change in this study reflects a reaction to testing. In considering this possibility, one needs to note that studies with similar pretest/posttest designs involving intensive treatments have not noted change. If the changes are



assumed to be real, they are best explained by the central features of this study. Specifically the importance of work is so strong that a change in employment status or the possibility of change such as with the study sample may have an impact that cannot be obtained with treatments for emotional well-being or interpersonal effectiveness.

An additional but less likely hypothesis regarding the change in self-esteem relates to the possible unrewarding background of the sample. Specifically most of the subjects had recent experiences in educational settings, presumably not the most positive for the educationally handicapped. By changing the focus to a vocational one, a more rewarding future could be envisioned.

Yet another possible reason for change was the opportunity for subjects to live and interact with other handicapped persons during the time of their evaluations. Such extensive contact with other disabled individuals may have led study participants to perceive themselves quite differently than before. Many of rehabilitation clients at the Center have severe handicaps such as quadraplegia or blindness which may in comparison seem to minimize the perceived impact of mild mental retardation, an emotional disorder, or a learning disability on one's vocational development.

### Changes Examined from Super's Career Maturity Model

Super (1983) has suggested that before serious career planning can occur, an individual must have (a) a sense of autonomy, (b) a time perspective, and (c) self-esteem. The latter is especially important as those without sufficient self-esteem are likely to lack a sense of autonomy. This sense of autonomy can be roughly equated to locus of control, which highly correlates with anxiety in studies specifically examining career indecision (Hartman, Fuqua & Blum, 1985).

The changes in self-esteem and anxiety associated with career decision-making that occurred in this study can be viewed from Super's (1983) career maturity model as precursors to changes in career indecision. In a sense, a sequence of steps can be seen as leading to a career choice. If this is the case, changes in career indecision would occur later and not necessarily simultaneously with changes in anxiety and self-esteem. It may also be that certain levels of anxiety and self-esteem must be reached for any change in career indecision to occur. Even at posttesting, the sample remained more anxious and had a less positive attitude toward themselves than nonhandicapped samples indicating such levels may have not been reached. This underscores the desirability of followup data. More complete data would have clarified the adequacy

of examining vocational assessment from Super's career maturity model.

#### Interaction of Handicap and Vocational Assessment

Type of handicapping condition did not interact at a statistically significant level with the treatment, the vocational evaluation, to affect performance on the dependent measures. Consequently, one assumes the vocational evaluation affected the subjects' state anxiety regarding career decision-making, career indecision, and self-esteem in a uniform way independent of handicapping condition. The implications for evaluators of this finding is that no empirical evidence exists for individualizing an evaluation based solely on handicapping condition to affect the dependent variables addressed in this study.

This lack of an interaction effect is in retrospect unsurprising for several reasons. First and foremost is the subjectiveness of the diagnostic criteria for classifying individuals as mentally retarded, learning disabled, and emotionally disturbed. Yesseldyke (Yesseldyke, Algozzine, & Mitchell, 1982) and McDermott (1982) have written on the process and errors associated with diagnosing handicaps in public schools. Definitions of learning disabilities are vague and often ignored by the teams responsible for classification. The problems of classification are evident in the sample by examining the IQs and academic skills of

the LD group subjects. Their fifth grade reading skills are certainly an indication of reading difficulties but such skills are not far from expected levels based upon the group's mean IQ of 84. Seemingly this group is largely composed of slow learners but not quite as slow as the MR group which as noted previously is not necessarily mentally retarded according to the most widely accepted standards.

Like the LD group, the ED group is a heterogeneous group. Represented in this group are neurotic and psychotic individuals as well as those with character disorders. Each of these terms themselves encompass a wide variety of conditions. One can probably safely assume that large intra-group differences preclude an interaction effect of group and treatment.

Any future research to investigate differential effects of a vocational evaluation on psychological variables would do well to separate groups not only by specific handicapping condition but other characteristics as well. Kaufman (Kaufman & Kaufman, 1983) has reviewed research to show reading instruction matched to the mental processing style of disabled readers is more effective than using either of two particular instructional methods indiscriminately. Along similar lines, Hutchins (1984) suggests counseling strategies be based primarily on a client's preferential responding style, either cognitive, emotional, or acting.

The presenting problem or disorder would be of secondary or of no importance within Hutchins' proposed framework. Possible grouping variables for research on vocational evaluation could include intelligence, locus of control, level of chronic choice anxiety, or level of education.

As this study compared only three handicapping conditions, one cannot say that any type of handicapping condition does not mediate the effects of a vocational evaluation on the dependent measures. Studies that include physical and sensory handicaps as well as nonhandicapped groups are needed to clarify how type of handicapping condition might interact with a work-sample-based vocational evaluation to affect career development variables.

#### Limitations of the Study

This section outlines the limitations of the study along two paths. First the methodological weaknesses or those issues concerning internal validity are examined followed by a discussion of factors affecting generalization of results to other populations.

#### Methodological Concerns

The field of vocational evaluation has developed in a near void of empirical research that could guide the daily activities of the evaluator (Stout, 1973). This study is an initial attempt to provide some data and information on work sampling and career development. A well-controlled analog

study seemed premature given the widespread use of work samples and absence of research. Rather the researcher chose to study the effects of a work-sample-based evaluation in an applied setting. Consequently numerous limitations were imposed on the study. Principally among these were the lack of a control group and a loosely standardized treatment, the vocational evaluation. The independent variable in this study is not simply a work-sample-based vocational evaluation but everything that occurred during the time period between pretesting and post-testing. As an applied study, no effort was made to standardized the vocational evaluation or other activities as experienced by subjects.

Without a control group it is not possible to generalize results or more importantly to say with confidence which elements produced the observed changes. Ideally one would have a control group composed of individuals that participated in the same nonevaluation activities as the research subjects. One could then attribute change to work sampling with some confidence. A waiting list control group would have been less than ideal as the present difficulties identifying the elements related to changes on dependent variables would still exist.

In an applied study with minimal experimenter control, threats to internal validity are often numerous (Campbell &

Stanley, 1963), with history, maturation, and testing of particular concern in this study. As alluded to previously, either history or maturation could be the sole reason for the differences measured at posttesting. The relative brief time between pretesting and posttesting does reduce these threats but cannot rule out their effects entirely. Reaction to testing is a more serious threat to internal validity. A recent meta-analysis of studies having both pretest control and no pretest control groups found significant sensitizing effects (Willson & Putnam, 1982). These effects for attitudinal scales like the SEI, were found to be mild in comparison to those for achievement/cognitive measures, but yet still statistically significant.

#### General Limitations

This study concerned itself with the career development effects of a work-sample-based vocational evaluation. It made no attempt to document the predictive validity of work sampling, an issue of major concern to many evaluators and still relatively unknown. The subjects of this study constituted in many ways a homogeneous group which enhanced the probability of obtaining significant results but presents numerous limitations for applying results to other populations. For example subjects all came from one rehabilitation center, were restricted to include only three

handicapping conditions, and most were between the ages of 17 and 19. Not included were the physically handicapped, sensorily disabled, the disadvantaged, or so called normal populations.

Of the three instruments used, the STAI and SEI, appear to measure the constructs of state anxiety and self-esteem adequately. Researchers of future studies may want to use different but similar instruments as results become increasingly more convincing when verified involving a variety of populations, settings, and instruments. Alternative methods of measuring career indecision are needed as the reliability and validity of the CDS in this study are questionable. Unlike self-esteem and anxiety, few alternatives for measuring career indecision exist. Also measures of locus of control and career maturity would aid in determining the applicability of Super's career maturity model for understanding the effects of vocational evaluation. The research of Hartman, Fuqua and Blum (1985) supports their own path-analytic model of career indecision which includes direct effects of state anxiety, self-concept and locus of control on indecision.

Long term followup of subjects who have experienced a work-sampled-based vocational evaluation is needed to determine any persistent effects. Questions regarding future effects on career indecision, success in vocational



training and occupational attainment could then be addressed. Empirical study of these variables would require studies with large sample sizes.

#### Strengths of the Study

The significant threats to internal validity make any application of results to other groups and settings a risky endeavor. Consequently any impact of this study on the practice of vocational evaluation is remote and in essence unwarranted. However the study does raise issues that have implications for vocational assessment. Foremost among these are questions regarding the objectives of work sampling itself. The study suggests that at least in some settings, some variables important to career decidedness can be affected. If this is accepted, efforts to enhance these changes could given a greater emphasis.

This study gives food for thought for evaluators who see work sampling as a career development tool. Unlike literature that has extolled the career development benefits of work sampling, this study provides mild empirical support for these notions. More importantly, a theoretical analysis of the career development effects of work sampling was undertaken. Consequently evaluators may find Super's career maturity model attractive as a guide and impetus in magnifying the career development benefits of the evaluations they conduct. For example, Super (1983) has

outlined variables necessary for career planning and when a career choice maybe premature. Somewhat along the same lines, Nadolsky (1976a) has written on the counseling functions of evaluators.

In summary, definite limitations exist that preclude generalization of results. Results indicate the sample did change on two variables related to career decision-making, but methological issues make application to other groups and settings unwise. The primary reason for this is that the design does not allow one to relate the changes that occurred to any particular event or events occurring during the time it took subjects to complete their respective evaluations. A lack of change on dependent measures would raise serious questions regarding the assumptions made about the career development functions of work sampling. As it is, the results are encouraging to those who sense that work sampling is a career development device. Additionally the study may be the impetus for future researchers who see work sampling as an area for empirical study rather than speculation. If so, this study could be considered that initial and tentative first step in this area.

#### Recommendations for Future Research

Given the paucity of empirical studies of vocational evaluation in general, a clear need for not only refinements of the present study but for empirical research in general

exists. In this section suggestions are made regarding directions this research may take.

### Predictive Efficiency

Despite the more than 40 years of association between work sampling and vocational rehabilitation of the handicapped, the predictive validity of work sampling has only occasionally been examined and then rather crudely. For example, validity studies have looked at the percentage of individuals who completed the training program for which they were recommended (Gordon, 1969) or who successfully secured employment, also in the recommended area (Gannaway, Sink, & Becket, 1980). Although there is generally a positive correlation between work sample performance and employment or success in vocational training, at least one study found many specific job samples unproductive of future vocational success (Gannaway & Sink, 1978). It appears one can assume most work samples are poorly normed (Browning & Inoin, 1981) and have largely unknown validity.

The need is obvious for studies on the validity of work samples for predicting performance in a variety of occupations. Once this basic standardization has been accomplished, real comparison of the work sample approach to evaluation with other approaches can be made. Rather than comparison with performance on a single psychometric measure, it would be more useful to determine to what degree

work sample performance adds to the predictive validity of vocational evaluation. Regression and discriminate analysis are statistical aids that can measure not only overall effectiveness in prediction but also relative contributions of predictor variables.

### Career Development

As this study has concerned itself with the career development functions of work sampling, suggestions for future study have been outlined or implied in previous paragraphs. Any efforts at replication would do well to include most importantly an adequate control group. Ideally a study or studies would compare more varied populations (ie. physically and sensory handicapped, disadvantaged, and normal individuals), and settings.

Although this study examined only three dependent variables, measures of (a) locus of control, (b) trait anxiety, and (c) career maturity may have added to the meaningfulness of the study. Implied from Super's (1983) career maturity model is the importance of an internal locus of control for accepting responsibility to engage in career planning. Although locus of control may not change as a result of work sampling, the inter-relationship of self-esteem, locus of control, and career indecision would be known. Super (1983) has suggested a close relationship of locus of control and self-esteem and these could be

examined in a study similar to the present one.

Up to this point the career development and predictive functions of work sampling have been viewed as independent of each other. This dichotomy holds true in the short term but the distinction is blurred when the ultimate objective of both is successful employment. It is good that self-esteem, career indecision, and anxiety associated with career decision-making are positively affected by work sampling, provided these lead to success in vocational training and/or securing employment. With either orientation to work sampling, success can also be failure. The failure of the career development function is when employment occurs no sooner and is no more successful/satisfying than if no evaluation occurred. The predictive oriented evaluation can be quite successful in its prediction that the evaluatee is unlikely or unable to secure employment in areas assessed. Yet this success of prediction is hardly positive if the individual remains unemployed. This issue of the ultimate effects of work sampling can best be studied through long term research, essentially longitudinal studies with large sample sizes and periodic followup. Important outcomes would include age of securing employment, earnings, job ratings, worker satisfaction, and personal adjustment. Such studies are an ambition undertaking but would shed light on

work-sample-based vocational evaluation.

Research as outlined is crucial to verifying the effectiveness of work sampling in particular and vocational evaluation in general. More importantly such research would point the direction vocational evaluation should take in the future.

## References

- American Psychiatric Association (1980). Diagnostic and statistical manual of mental disorders (3rd ed.) Washington, D.C.: APA.
- Bandura, A., & Walters, R.H. (1963). Social learning and personality development. New York: Holt, Rinehart, & Winston.
- Barrett, T.C., & Tinsley, H.E.A. (1977). Measuring vocational self-concept crystallization. Journal of Vocational Behavior, 11, 305-311.
- Barrett, T.C., & Tinsley, H.E.A. (1977). Vocational self-concept crystallization and vocational indecision. Journal of Counseling Psychology, 24, 301-307.
- Bartusch, T.W. (1976). A manipulative study of the effect of instructional set on the convergent and discriminant validity of questionnaire measures of trait and state anxiety: A comparative factor analytic approach. Educational and Psychological Measurement, 36, 885-898.
- Barton, E.H. Jr. (1970). Vocational evaluation and work adjustment: Vocational development companions. Journal of Rehabilitation, 36, 35-37.
- Berger-Gross, V., Kahn, M.W., & Weare, C.R. (1983). The role of anxiety in the career decision making of liberal

- arts students. Journal of Vocational Behavior, 22, 312-323.
- Benz, M.R., & Halpern, A.S. (1986). Vocational preparation for high school students with mild disabilities: A statewide study of administrator, teacher, and parent perceptions. Career Development for Exceptional Individuals, 9, 3-15.
- Bingham, G. (1975). Career attitudes and self-esteem among boys with and without specific learning disabilities (Doctoral dissertation, Rutgers University, The State University of New Jersey, 1974). Dissertation Abstracts International, 36, 02A-753747.
- Bingham, G. (1978). Career attitudes among boys with and without specific learning disabilities. Exceptional Children, 44, 341-342.
- Bingham, G. (1980). Career maturity of learning disabled adolescents. Psychology in the Schools, 17, 135-139.
- Bingham, G. (1981). Exploration process in career development: Implications for learning disabled. Career Development for Exceptional Individuals, 4, 77-80.
- Black, F. W. (1974). Self-concept as related to achievement and age in learning disabled children. Child Development, 45, 1137-1140.
- Bodwin, R., & Bruck, M. (1962). The relationship between



- self-concept and the presence or absence of scholastic underachievement. Journal of Clinical Psychology, 18, 181-182.
- Brolin, D. E. (1982). Vocational preparation of persons with handicaps. Columbus, OH: Charles E. Merrill.
- Brolin, D.E. (1983). Career education: Where do we go from here? Career Development for Exceptional Individuals, 8, 103-114.
- Brolin, D.E. & Elliott, J.R. (1984). Meeting the lifelong career development needs of students with handicaps. Career Development of Exceptional Individuals, 7, 12-21.
- Brookover, W.B., LePere, J., Hamachek, D., & Thomas, S. (1965). Self-concept of ability and school achievement II: Improving academic achievement through student self-concept enhancement. East Lansing, MI: U.S. Office of Education, Cooperative Research Project No. 2831, Office of Research and Publications.
- Browning, P. & Inoin, L.K. (1981). Vocational evaluation, training, and placement of mentally retarded persons. Rehabilitation Counseling Bulletin, 24, 374-408.
- Buros, O.K. (Ed.), (1978). The eighth mental measurement yearbook. Highland Park, NJ: The Gryphon Press.
- Campbell, L.M., & Stanley, J.C. (1963). Experimental and quasi-experimental designs for research. Chicago: Rand

McNally.

Cattell, R.B., & Scheier, I.H. (1961). The meaning and measurement of neuroticism and anxiety. New York: Ronald Press.

Chandler, A.L. (1983). Selected concerns in 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. 18-29). Springfield, IL: Charles C. Thomas.

Clarizo, H.F., & Phillips, S.E. (1986). Sex bias in the diagnosis of learning disabled students. Psychology in the Schools, 23, 44-52.

Coopersmith, S.E. (1967). The antecedents of self-esteem. San Francisco: Freeman.

Coopersmith, S. (1981). Self-Esteem Inventories (Manual). Palo Alto, CA: Consulting Psychologist Press, Inc.

Couch, R.H. (1973). The vocational evaluation and work adjustment association looks to the future. In R.E. Hardy & J.G. Cull (Eds.), Vocational evaluation for rehabilitation services (pp. 65-105). Springfield, IL: Charles C. Thomas.

Crandall, R. (1973). The measurement of self-esteem and related constructs. In J.P. Robinson & P.R. Shaver (Eds.), Measures of social psychological attitudes

- (45-168). Ann Arbor: Institute for Social Research, The University of Michigan.
- Crites, J.O. (1969). Vocational psychology: The study of vocational behavior and development. New York: McGraw-Hill.
- Cronbach, L.J. (1970). Essentials of psychological testing (3rd ed.). New York: Harper & Row.
- Davis, R.C., & Horne, A.M. (1986). The effects of small-group counseling and a career course on career decidedness and maturity. The Vocational Guidance Quarterly, 34, 255-262.
- Davis, S., & Ward, M. (1978). Vocational education of handicapped students. Reston, VA: The Council for Exceptional Children.
- Erikson, E.H. (1968). Identity: Youth and crisis. New York: W.W. Norton.
- Eysenck, H.J., & Rachman, S. (1965) The causes and cures of neurosis. San Diego: Rober R. Knapp.
- Fredrickson, R.H. (1982). Career information. Englewood Cliffs, NJ: Prentice-Hall.
- Fuqua, D.F., & Hartman, B.W. (1983). Differential diagnosis and treatment of career indecision. Personnel and Guidance Journal, 62, 27-29.
- Gannaway, T., & Sink, J. The relationship between the vocational evaluation system by Singer and employment

- success in occupational groups. Vocational Evaluation and Work Adjustment Bulletin, 17(2), 38-45.
- Gannaway, T.W., Sink, J.M. & Becket, W.C. (1980). A predictive validity study of a job sample program with handicapped and disadvantaged individuals. The Vocational Guidance Quarterly, 29, 4-11.
- Gaudry, E., & Spielberger, C.D. (1971) Anxiety and educational achievement. New York: John Wiley & Sons.
- Gelfand, D.M. (1962). The influence of self-esteem on rate of verbal conditioning and social matching behavior. Journal of Abnormal and Social Psychology, 65, 259-265.
- Gellman, W. (1968). The principles of vocational evaluation. Rehabilitation Literature, 29, 98-102.
- Ghiselli, E.E. (1955). The measurement of occupational aptitude. In E. Brunswik, M.R. Rosenzweig, R.C. Tryon, & R.D. Tuddenham (Eds.), University of California Publications in Psychology (Vol. 8[2], pp. 101-216). Berkley: University of California Press, 1955.
- Ghiselli, E.E. (1971). Exploration in managerial talent. Pacific Palisades, CA: Goodyear.
- Ginzberg, E. (1972). Toward a theory of occupational choice: A restatement. Vocational Guidance Quarterly, 20, 169-172.
- Ginzberg, E., Ginsburg, S.W., Axelrad, S., & Herma, J.L. (1951). Occupational choice. New York: Columbia

University Press.

- Goldberg, R.T. (1981). Toward an understanding of the rehabilitation of the disabled adolescent. Rehabilitation Literature, 42, 66-74.
- Goodstein, L.D. (1972). Behavioral views of counseling. In B. Stefflre & W.H. Grant (Eds.), Theories of counseling (2nd ed.) (pp. 243-286). New York: McGraw-Hill.
- Gordon, J. (1969). Testing, counseling, and supportive services for disadvantaged youth. Ann Arbor: Michigan University and Wayne State University, Institute of Labor and Industrial Relations.
- Grossman, H. (Ed.). (1973). Manual on terminology and classification in mental retardation (rev. ed.). American Association on Mental Deficiency. Baltimore: Garamond/Pridemark Press.
- Hamilton, J.W. & Elliott, L.B. (1979, March). A note on the convergent validity of self-esteem measures. Paper presented at the meeting of the Southeast Psychological Association, New Orleans, LA.
- Hartman, B.W., & Fuqua, D.R. (1982). The construct validity of the Career Decision Scale adapted for graduate students. Vocational Guidance Quarterly, 31, 69-77.
- Hartman, B.W., Fuqua, D.R., & Blum, C.R. (1985). A path-analytic model of career indecision. Journal of Vocational Behavior, 33, 231-238.

- Hartman, B.W., Fuqua, D.R., & Hartman, P.T. (1983). The predictive validity of the Career Decision Scale adapted for high school students. Psychological Reports, 52, 95-100.
- Hartman, B.W., Fuqua, D.R., & Jenkins, S.J. (1986). The reliability/generalizability of the construct of career indecision. Journal of Vocational Behavior, 28, 142-148.
- Hartman, B.W., & Hartman, P.T. (1982). The concurrent and predictive validity of the Career Decision Scale adapted for high school students. Journal of Vocational Behavior, 20, 244-252.
- Hartman, B.W., Utz, P.W., & Farnum, S.O. (1979). Examining the reliability and validity of an adapted scale of educational/vocational undecidedness in a sample of graduate students. Journal of Vocational Behavior, 15, 224-230.
- Hawkins, J.G., Bradley, R.W., & White, G.W. (1977). Anxiety and the process of deciding about a major and vocation. Journal of Counseling Psychology, 24, 398-403.
- Heist, P.A., McConnell, T.R., Webster, H.D., & Yonge, G.D. (1968). Omnibus Personality Inventory. New York: The Psychological Corporation.
- Herr, E.L., & Cramer, S.H. (1979). Career guidance through

- the life span: Systematic approaches. Boston: Little.
- Hintze, J.L. (1986). Number cruncher statistical system [Computer program]. Kaysville, UT: Author.
- Hoffman, P.R. (1969). Work evaluation: An overview. In W. Pruitt & R. Pacinelli (Eds.), Work evaluation in rehabilitation (pp. 5-28). Washington, D.C.: Association of Rehabilitation Centers.
- Hohenshil, T.H., Hummel, D.L., & Maddy-Bernstein, C. (1980). The impact of work patterns upon family development. School Psychology Review, 9, 312-318.
- Holland, J.L. (1959). A theory of vocational choice. Journal of Counseling Psychology, 6, 34-44.
- Holland, J.L. (1966). The psychology of vocational choice. Waltham, MA: Blaisdell Press.
- Holland, J.L. (1968). Explorations of a theory of vocational choice: VI. A longitudinal study using a sample of typical college students. Journal of Applied Psychology Monograph, 52, 1.
- Holland, J.L. (1970). Vocational Preference Inventory. Palo Alto, CA: Consulting Psychologists Press.
- Humes, C.W. (1982). Career guidance for the handicapped: A comprehensive approach. The Vocational Guidance Quarterly, 30, 351-358.
- Humes, C.W. & Hohenshil, T.A. (1985). Career development and career education for handicapped students: A

- reexamination. The Vocational Guidance Quarterly, 34, 31-40.
- Hummel, D.L., & Humes, C.W. (1984). Pupil services. New York: Macmillian .
- Hutchins, D.E. (1984). Improving the counseling relationship. The Personnel and Guidance Journal, 62, 572-575.
- JEVS Work Sample Evaluation System. (1969). Philadelphia: Jewish Employment and Vocation Service.
- Johnson, D.R. (1979). Project Explore - A vocational assessment model for youth with special needs. Career Development for Exceptional Children, 2, 40-47.
- Jordaan, J.P., & Heyde, M.B. (1979). Vocational maturity during the high school years. New York: Teachers College Press.
- Karayanni, M. (1981). Career maturity of emotionally maladjusted high school students. Vocational Guidance Quarterly, 29, 213-220.
- Kaufman, A.S. & Kaufman, N.L. (1983). Interpretive manual: Kaufman Assessment Battery for Children. Circle Pines, MN: American Guidance Service.
- Kendall, P.C., Finch, A.J., Auerbach, S.M., Hooke, J.F., & Mikulka, P.J. (1976). The State-Trait Anxiety Inventory: A systematic evaluation. Journal of Consulting and Clinical Psychology, 44, 406-412.



- Kimes, N.G., & Troth, W.A. (1974). Relationship of trait anxiety to career decisiveness. Journal of Counseling Psychology, 21, 277-280.
- Korman, A. (1966). Self-esteem variable in vocational choice. Journal of Applied Psychology, 50, 479-486.
- Korman, A.K. (1967). Self-esteem as a moderator of the relationship between self-perceived abilities and vocational choice. Journal of Applied Psychology, 51, 65-67.
- Korman, A.K. (1968). Task success, task popularity, and self-esteem as influences on task liking. Journal of Applied Psychology, 52, 484-490.
- Korman, A.K. (1969). Self-esteem as a moderator in vocational choice: Replications and extensions. Journal of Applied Psychology, 53, 188-192.
- Leinhardt, G., Seewald, A., & Zigmond, N. (1982). Sex and race differences in learning disabilities classrooms. Journal of Educational Psychology, 74, 835-843.
- Maier, D., & Herman, A. (1974). The relationship of vocational decidedness and satisfaction with dogmatism and self-esteem. Journal of Vocational Behavior, 5, 95-102.
- McCray, P. (1980). Suggested guidelines for evaluating work samples. Menomonie: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute.

- McDermott, P.A. (1982). Actuarial assessment system for the grouping and classification of school children. In C.R. Reynolds & T.B. Gutkin (Eds.), The handbook of school psychology (pp. 243-272). New York: John Wiley & Sons.
- Miller, C.H. (1973). Historical and recent perspectives on work and vocational guidance. In H. Borow (Ed.), Career guidance for a new age (pp. 3-39). Boston: Houghton-Mifflin.
- Miller, J.H., & Alfano, A.M. (1974). The efficacy of Tennessee rehabilitation facilities: A counselor critique. Vocational Evaluation and Work Adjustment Bulletin, 7, 31-37.
- Murphy, G. (1973). Work and the productive personality. In H. Borow (Ed.), Career guidance for a new age (pp. 151-175). Boston: Houghton-Mifflin.
- Nadolsky, J.M. (1969). The existential in vocational evaluation. Journal of Rehabilitation, 35, 22-24.
- Nadolsky, J.M. (1971a). Development of a model for vocational evaluation of the disadvantaged. Auburn, AL: Auburn University.
- Nadolsky, J.M. (1971b). Development of a model for vocational evaluation of the handicapped. Auburn, AL: Auburn University.
- Nadolsky, J. (1971c). Patterns of consistency among

- vocational evaluators. Vocational Evaluation and Work Adjustment Bulletin, 4(2), 3-9.
- Nadolsky, J. (1976a). The counseling function in vocational evaluation. Vocational Evaluation and Work Adjustment Bulletin, 9(4), 39-45.
- Nadolsky, J.M. (1976b). The experiential component of vocational evaluation. Vocational Evaluation and Work Adjustment Bulletin, 9(4), 3-7.
- 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 (5-29).  
Springfield, IL: Charles C. Thomas.
- Nafziger, D.H., Holland, J.L., Helms, S.T., & McPartland, J.M. (1974). Applying an occupational classification to the work histories of young men and women. Journal of Vocational Behavior, 5, 331-345.
- Neff, W.S. (1968). Work and human behavior (1st ed.). New York: Atherton.
- Neff, W.S. (1970). Vocational assessment - theory and models. Journal of Rehabilitation, Jan-Feb, 27-29.
- Neff, W.S. (1985). Work and human behavior (3rd ed.). New York: Aldine.
- Newmark, C.S. (1974). The effects of psychotherapeutic

- intervention on state-trait anxiety. Journal of Community Psychology, 2, 37-38.
- Osipow, S.H. (1973). Theories of career development, (2nd edition). Englewood Cliffs, NJ: Prentice-Hall.
- Osipow, S.H. (1980). Manual for the Career Decision Scale. Columbus, OH: Marathon Consulting & Press.
- Osipow, S.H., Carney, C.G., & Barak, A. (1976). A scale of educational-vocational undecidedness: A typological approach. Journal of Vocational Behavior, 9, 233-243.
- Osipow, S.H., Winer, J., Koschier, M., & Yanico, B. (1975). A modular approach to self-counseling for vocational indecision using audio-cassettes. In L. Simpson (Ed.), Audio-visual media in career development. Bethlehem, PA: College Placement Council.
- Parsons, F. (1909). Choosing a vocation. Boston: Houghton-Mifflin.
- Peterson, M. (1985a). Certification of vocational evaluation. The Journal for Vocational Special Needs Education, 7, 17-21.
- Peterson, M. (1985b). Models of vocational assessment of handicapped youth. Career Development for Exceptional Individuals, 8, 110-117
- Peterson, M., & Madden, B., & Ley-Siemer, L. (1981). Issues and recommendations concerning vocational assessment of special needs students. Paper presented at the Annual

- Convention of the American Vocational Association.  
Atlanta, GA. (ERIC Document Reproduction Service No. ED  
211 719)
- Resnick, H., Fauble, M., & Osipow, S. (1970). Vocational  
crystallization and self-esteem in college students.  
Journal of Counseling Psychology, 17, 465-467.
- Roberts, J.R. (1969). Pennsylvania Bi-Manual Worksample.  
Circle Pines, MN: American Guidance Service.
- Robinson, J.P., & Shaver, P.R. (1973). Measures of social  
psychological attitudes (rev. ed.). Ann Arbor, MI:  
Survey Research Center.
- Roe, A. (1956). The psychology of occupations. New York:  
John Wiley.
- Rogers, C.R., & Dymond, R.F. (1954). Psychotherapy and  
personality change. Chicago: University of Chicago  
Press.
- Rosenberg, B. (1973). The work sample approach to vocational  
evaluation. In R.E. Hardy & J.C. Cull (Eds.),  
Vocational evaluation for rehabilitation services (pp.  
139-166). Springfield, IL: Charles C. Thomas.
- Sakata, R., & Sinick, E. (1965). Do work samples work?  
Rehabilitation Counseling Bulletin, 8, 121-24.
- Salomone, P.R. (1982). Difficult cases in career  
counseling. Part III: The indecisive client.  
Personnel and Guidance Journal, 60, 455-459.

- Sattler, J.M. (1982). Assessment of children's intelligence and special abilities (2nd. ed.). Boston: Allyn & Bacon, Inc.
- Sax, A. (1971). Innovations in vocational evaluation and work adjustment: The Singer/Graflex vocational evaluation system. Vocational Evaluation and Work Adjustment Bulletin, 4, 41-42.
- Sinick, D. (1962). Client evaluation: Work task approach. Rehabilitation Record, 3(2), 6-8.
- Slaney, R.B., Palko-Nonemaker, D., & Alexander, R. (1981). An investigation of two measures of career indecision. Journal of Vocational Behavior, 19, 92-103.
- Smith, R.C., & Lay, C.D. (1974). State and trait anxiety: An annotated bibliography. Psychological Reports, 34, 519-594.
- Spielberger, C.D., Gorsuch, R.L., & Lushene, R.E. (1970). Manual for the State-Trait Anxiety Inventory (Self-Evaluation Questionnaire). Palo Alto, CA: Consulting Psychologists Press.
- Spielberger, C.D., Gorsuch, R.L., Lushene, R., Vagg, P.R., Jacobs, G.A. (1983). Manual for the State-Trait Anxiety Inventory (Self-Evaluation Questionnaire). Palo Alto, CA: Consulting Psychologists Press.
- SPSS, Inc. (1983). Statistical Package for the Social Sciences X [Computer program manual]. New York:

McGraw-Hill.

- Stern, B.E. (1977). Toward a federal policy on education and work. Washington, D.C.: U.S. Department of Health, Education, and Welfare.
- Stout, J.K. (1973). Evaluating the evaluator. In R.E. Hardy, & J.G. Cull (Eds.), Vocational evaluation for rehabilitation services (pp. 104-136). Springfield, IL: Charles C. Thomas.
- Super, D.E. (1954). Career patterns as a basis for vocational counseling. Journal of Counseling Psychology, 9, 12-19.
- Super, D.E. (1957). Psychology of careers. New York: Harper and Row.
- Super, D.E. (1963). Self-concepts in vocational development. In D.E. Super, R. Starishevsky, [N. Matlin], & J.P. Jordaan (Eds.), Career development: Self-concept theory (79-95). New York: College Entrance Board.
- Super, D.E. (1983). Assessment in career guidance: Toward truly developmental counseling. Personnel and Guidance Journal, 62, 555-562.
- Super, D.E., & Overstreet, P.L. (1960). The vocational maturity of ninth grade boys. New York: Columbia University, Teachers College Bureau.
- Super, D.E., & Thompson, A.S. (1979). A six-scale,

two-factor test of vocational maturity. Vocational Guidance Quarterly, 27, 6-15.

Taylor, J., & Reitz, W. (1968). The three faces of self-esteem. Research Bulletin #80. London: Department of Psychology, University of Western Ontario.

Tennyson, W.W., Hanson, S.L., Klaurens, M.K., & Antholz, M.B. (1980). Career development education: A program approach for teachers and counselors. Washington, D.C.: National Vocational Guidance Association.

Terman, L.M. & Merrill, M.A. (1960). Stanford-Binet Intelligence Scale (3rd ed.). Boston: Houghton-Mifflin.

Tuinen, M.V. (1979). A multi-method analysis of selected self-esteem measures. Journal of Research in Personality, 13, 16-24.

U.S. Commission on Civil Rights. (1985). Accommodating the spectrum of disability. Washington, D.C.: Author.

United States Department of Labor. (1939). Dictionary of occupational titles. Washington, D.C.: U.S. Government Printing Office.

United States Department of Labor. (1970). General Aptitude Test Battery. Washington, D.C.: U.S. Government Printing Office.

United States Department of Labor, Bureau of Labor Statistics. (1949). Occupational outlook handbook (1st



- ed.). Washington, D.C.: Government Printing Office.
- United States Training and Employment Service. (1946).  
General Aptitude Test Battery. Washington, D.C.: United States Government Printing Office.
- Utterback, J.D. (1979). The effect of the assessment center process on the self-esteem of participants. Unpublished master's thesis, Virginia Polytechnic Institute and State University, Blacksburg.
- Valpar Component Work Sample. (1978). Phoenix, AR: Valpar Corp.
- Vocational Evaluation and Work Adjustment Association. (1975). Vocational evaluation project: Final report. Menomonie, WI: University of Wisconsin - Stout Materials Development Center, Stout Vocational Rehabilitation Institute.
- Walsh, W.B., & Lewis, R.O. (1972). Consistent, inconsistent and undecided career preferences and personality. Journal of Vocational Behavior, 2, 309-316.
- Wechsler, D. (1981). Manual for the Wechsler Adult Intelligence Scale-Revised. New York: Psychological Corporation.
- Wechsler, D. (1974). Manual for the Wechsler Intelligence Scale for Children-Revised. New York: Psychological Corporation.
- Will, M. (1984). Bridges from school to working life.

Interchange, June, 2-6.

Willson, V.L., & Putnam, R.R. (1982). Meta-analysis of pretest sensitization effects in experimental design. American Educational Research Journal, 19, 249-258.

Wylie, R. (1974). The self-concept: Vol I. A review of methodological considerations and measuring instruments (2nd ed.). Lincoln: University of Nebraska Press.

Ysseldyke, J.E., Algozzine, B., & Mitchell, J. (1982). Special education team decision making: An analysis of current practices. Personnel & Guidance Journal, 60, 308-313.

Appendix A



**COMMONWEALTH of VIRGINIA**

**DEPARTMENT OF REHABILITATIVE SERVICES**

WOODROW WILSON REHABILITATION CENTER  
FISHERSVILLE, VIRGINIA 22939

March 19, 1985

Mr. Mark D. Nelson

Dear Mr. Nelson:

I am pleased to support your efforts regarding your proposed research in the Vocational Evaluation Department of the Woodrow Wilson Rehabilitation Center.

Although the prediction aspects of vocational evaluation are typically emphasized, enhancing client variables such as self-esteem and career decidedness and reducing anxiety associated with career decision making is a most desired outcome. Research determining what effects a vocational evaluation has on these variables will be most useful to our Center as it assesses how it affects the clients evaluated here.

I look forward to updates from you as your research progresses.

Yours truly,

Wayne E. Heatwole  
Program Director  
Student Services

WEH:hjh

Appendix A



**COMMONWEALTH of VIRGINIA**

**DEPARTMENT OF REHABILITATIVE SERVICES**

WOODROW WILSON REHABILITATION CENTER  
FISHERSVILLE, VIRGINIA 22939

March 20, 1985

Mr. Mark D. Nelson

Dear Mr. Nelson:

I write to inform you that your proposed research project is met with enthusiasm by persons in Vocational Evaluation and myself. The Vocational Evaluation Department of Woodrow Wilson Rehabilitation Center will assist you in conducting your research here at the Center.

The enhancement of career decidedness and related variables is a desired outcome of work-sampled-based vocational evaluations. Research, such as yours, is overdue and will benefit the Center and the clients we serve as they seek to attain their occupational and career goals.

Please keep me informed of your progress.

Sincerely,

Kenneth L. Kuester  
Director

KLK:hhh

Appendix B

Correspondance

**MARATHON CONSULTING AND PRESS**  
P.O. BOX 09189 • COLUMBUS, OHIO 43209-0189

March 7, 1985

Dear Mr Nelson: Thank you for your courtesy in inquiring about modifications to the Career Decision Scale. I regret to say that permission to modify the scale as you requested cannot be granted. Previous permissions to do so have created confusion and the benefit of making such small changes as Hartman and Hartman and of the type you ask for are minimal if they exist at all.

I hope that you will be able to use the measure as developed.

Sincerely,

Samuel H Osipow

## Appendix C

Work Sample Checklist

- |  |   |
|--|---|
| <u>   </u> 1. Assembler (factory work)                         | <u>   </u> 20. Mechanic                     |
| <u>   </u> Electronics   | <u>   </u> Auto Body Repairer               |
| <u>   </u> Small Parts   | <u>   </u> Auto Mechanic                    |
| <u>   </u> 2. Barber   | <u>   </u> Auto Service                     |
| <u>   </u> 3. Brickmason                                       | <u>   </u> Bicycle Repair                   |
| <u>   </u> 4. Business Areas                                   | <u>   </u> Small Gas Engine Repairer        |
| <u>   </u> Bookkeeper  | <u>   </u> Sewing Machine Repairer          |
| <u>   </u> Cashier   | <u>   </u> 21. Painter (Building)           |
| <u>   </u> Clerk Typist  | <u>   </u> 22. Plumber's Helper             |
| <u>   </u> Computer Programmer                                 | <u>   </u> 23. Radio/T.V. Repairer          |
| <u>   </u> General Clerk                                       | <u>   </u> 24. Saw Sharpener                |
| <u>   </u> Key punch Operator                                  | <u>   </u> 25. Sewing (Dre-smaker, Tailor)  |
| <u>   </u> Mail Clerk  | <u>   </u> 26. Sheet Metal Worker           |
| <u>   </u> Stockroom Clerk                                     | <u>   </u> 27. Upholsterer                  |
| <u>   </u> 5. Carpenter's Helper                               | <u>   </u> 28. Watch Repairer               |
| <u>   </u> 6. Chair Caner                                      | <u>   </u> 29. Welder                       |
| <u>   </u> 6. Chair Caner                                      | <u>   </u> 30. Woodworker (Furniture Maker) |
| <u>   </u> 7. Cosmetologist                                    | Write in Other Choices: _____               |
| <u>   </u> 8. Custodian-Janitor                                | _____                                       |
| <u>   </u> 9. Drafter  | _____                                       |
| <u>   </u> 10. Dry Wall Installer                              | _____                                       |
| <u>   </u> 11. Electric Motor Repairer                         |   |
| <u>   </u> 12. Electrician's Helper                            |   |
| <u>   </u> 13. Engraver  |   |
| <u>   </u> 14. Food Service (Waiter,<br>Waitress, Cook, Baker) |   |
| <u>   </u> 15. Furniture Refinisher                            |   |
| <u>   </u> 16. Gunsmither                                      |   |

## Appendix D



**COMMONWEALTH of VIRGINIA**  
**DEPARTMENT OF REHABILITATIVE SERVICES**  
 WOODROW WILSON REHABILITATION CENTER  
 FISHERSVILLE, VIRGINIA 22939

**CONSENT FOR PARTICIPATION IN RESEARCH STUDY**

Woodrow Wilson Rehabilitation Center, as many other agencies, engages in research projects to improve the quality of services provided. One such project is now being conducted in the Vocational Evaluation Department. WWRC is interested in the effects a vocational evaluation has on clients.

To complete the current research project, volunteers who will participate in the study are needed. Clients as yourself who agree to be part of the study, will be asked to answer some written questions about themselves and their vocational plans. If you choose to volunteer your responses will be used strictly for research purposes and will not affect the nature or results of your evaluation.

You are encouraged to be part of this study. However participation is strictly voluntary. Please indicate your decision by checking the appropriate line below and signing your name.

\_\_\_\_\_ Yes, I agree to be part of the research project.

\_\_\_\_\_ No, I do not wish to be included in the research project.

\_\_\_\_\_  
 Signature

\_\_\_\_\_  
 Date

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the scanned document**