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Selected relationships between client vocational self perception, vocational assessment programming and rehabilitation outcome.

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SELECTED RELATIONSHIPS BETWEEN CLIENT VOCATIONAL
SELF PERCEPTION, VOCATIONAL ASSESSMENT PROGRAMMING
AND REHABILITATION OUTCOME

A Dissertation Presented

By

Charles W. Robinson

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

May, 1983

School of Education

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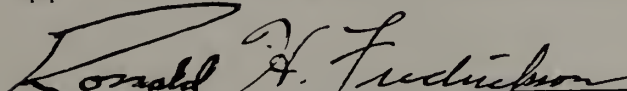
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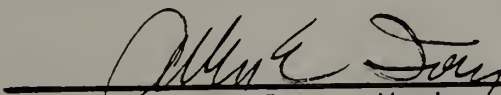
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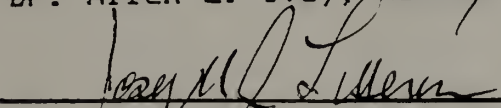
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ACKNOWLEDGEMENTS

Ironically, completion of a dissertation is the loneliest of activities made possible only by the support and contributions of others. Many, such as staff and clients at the Vocational Development Center who made the essential data base possible, cannot be identified by name. Nonetheless, their efforts are recognized and appreciated. The contributions of others, however, demand individual recognition.

Dr. Paul Power, principal author of the New Hampshire Questionnaire, has been a constant source of information and support. I would not have been able to reconstruct the early history of the Questionnaire without access to his memory and files. Paul also played a major role in my decision to begin doctoral studies, being far more sure than I that it was possible.

I am equally grateful to Sue Emery, who completed the first program evaluation study using the NHQ. Her fine thesis contributed greatly to the design I used. I am also grateful to Sue for preserving the NHQ data when it was far from obvious that it would ever be used.

My decision to prepare the dissertation myself using a newly purchased word processor was made in total ignorance of the skills and knowledges I would need. Beyond the data

entry, David Sukol has been of immeasurable help in patiently teaching me the intricacies of the TRS80 and responding my unending questions, many of which had to be asked and answered more than once.

Thanks also to Bruce A. Archambault, Chief of the New Hampshire Vocational Rehabilitation Division for releasing the client data and NHQ for use in the study, and for making it possible for me to conduct the essential follow-up of rehabilitation outcomes. A long time friend, Bruce has always been a strong supporter of the Vocational Development Center and it's extensive program evaluation activities.

My peers at Assumption College deserve special recognition for their "behavior management" skills in helping me to keep my eye on the goal. I am particularly grateful to Dr. George S. Elias and Dr. John G. Moline for their understanding, support and willingness to bear some of my burdens especially during my residency and during this last six months. Without their support, my studies would simply not have been possible.

I have been singularly fortunate to have Dr. Ronald H. Fredrickson, Dr. Allen E. Ivey and Dr. Joseph A. Litterer as committee members throughout my entire program at the University. They have taught, supported, encouraged and motivated me as required. I am most grateful. Special

thanks to Ron for his superb skill in showing me how to break what seemed insurmountable projects into manageable steps.

Finally, the support and encouragement I have received from my family deserve very special mention. Martie, Robbie and Dave are to be congratulated for understanding why Dad had to work so many nights and weekends, and for their direct contributions by data checking and proof-reading. Unquestionably, however, the most significant factor in my success in this as well as all other ventures, is my beloved Heather. Without her loving, encouraging, cajoling conviction that a doctorate was both attainable and worthwhile, it would never have been realized. For our life together, I am deeply grateful.

ABSTRACT

Selected Relationships Between Client Vocational
Self Perception, Vocational Assessment Programming
and Rehabilitation Outcome

May, 1983

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This study examined the impact of a specific vocational assessment program on 183 disabled clients and their rehabilitation outcomes. Before and after assessment, client perceptions of attitude toward work and disability, job expectatation, self confidence, anger, tension, etc. were measured using the 153 item New Hampshire Questionnaire (NHQ, Power & Robinson, 1977). Group responses were compared with each other, employment status after rehabilitation services were completed, and fourteen demographic

and program variables.

Assessment had a positive impact on vocational self perception since mean NHQ scores were significantly more positive ($P > .000$) after the intervention. However, differences on total Questionnaire scores were not significant for clients ultimately closed in employment and those closed not working. Job Expectation and Stamina sub-scales were significantly higher for the employed group.

Education, disability type and severity, and benefits received had significant impact on NHQ scores; all variables accounted for under 20% of the total variance. Only time between assessment and closure, and benefits received contributed significantly ($P > .05$) to differences in employment outcome. Client vocational self perceptions may thus be influenced by variables (e.g. education) not actually significant in determining rehabilitation outcome.

Study conclusions were: 1) Client vocational self perception was more positive after assessment programming; 2) addressing the value of vocational assessment by client impact studies is possible and desirable; 3) the NHQ demonstrated sufficient validity and reliability for program evaluation uses, but additional work is needed before adopting it as a measure of individual vocational self perception; 4) variables in the study were not the major

determinants of vocational self perception or employment success; 5) NHQ scores did not predict employment outcomes of rehabilitation.

Recommendations included shortening the NHQ, additional data analysis to clarify variable patterns which may influence rehabilitation outcomes, and investigation of the criterion-related validity of the NHQ.

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C H A P T E R I

SELECTED RELATIONSHIPS BETWEEN CLIENT VOCATIONAL SELF PERCEPTION, VOCATIONAL ASSESSMENT PROGRAMMING AND REHABILITATION OUTCOME

Introduction

Accountability is a primary issue in the funding and delivery of human services (Graham, 1980). Collins (1980) reported that a panel of national leaders in rehabilitation viewed studies of outcome effectiveness as essential to continued funding throughout the present decade. Baker (1982) emphasized the need to find ways to generate positive rehabilitation program results to offset pressures for funding cutbacks.

The study reported herein related to one type of human services programming: vocational assessment services which assist disabled clients in the career decisionmaking process. Specifically, it attempted to provide information about relationships between assessment, client vocational self perception, and rehabilitation outcome.

Statement of the Problem

The need to demonstrate accountability receives prominent attention throughout rehabilitation literature (e.g. Prazak, Prazak & Walker, 1975; Borus, 1979; Cho & Schuermann, 1980; Hollingsworth & Watson, 1980). The same emphasis is visible in publications about the specific areas of career and vocational assessment (e.g. Pruitt, 1977; Weinrach, 1979; Tolbert, 1980; Field & Emener, 1982; Herbert & Menz, 1982).

Despite such wide acceptance of the need for accountability, most reviewers have found few studies which even address the efficacy of vocational assessment programs for the disabled (Speiser, Pearl & Staniec, 1966; Match, 1968; Spergel, 1970; Barad, 1972; Herbert & Menz, 1982). In an article entitled "An Unfinished Task: Evaluating Vocational Evaluation", Barad decried the paucity of "...hard, systematic evidence to support our belief in vocational evaluation" (1972, p. 36). A decade later, Herbert and Menz echoed the same theme by concluding that "Emperical research on vocational evaluation is woefully lacking" (1982 p. 100).

Herbert and Menz summarized the problems of conducting program evaluation of vocational assessment as being difficulty in:

- defining or conceptualizing the process of vocational assessment,
- obtaining consensus about the objectives of the process,
- delineating relevant variables,
- identifying or developing measures for assessing client impact, and
- replication of the studies (1982, p. 103).

These statements provide a succinct description of problems in evaluating the effectiveness of vocational assessment services provided to disabled persons. They also constitute a list of activities which must be undertaken if accountability of vocational assessment programming is to be demonstrated. Until a considerable body of research is made available to indicate otherwise, clients, agencies, practitioners and taxpayers must necessarily make critical decisions based on what Herbert and Menz term "...a belief system in vocational evaluation which is unchecked, unchallenged, and perhaps is unreliable and invalid" (1982, p. 105).

Purpose of the Study

The purpose of the research discussed herein, was to expand on earlier work by Emery (1979) investigating the impact of a specific vocational assessment program on the vocational self perception of disabled clients. Emery's original sample of 82 clients was enlarged to 183 persons for whom vocational self perception data was gathered im-

mediately before and after vocational assessment. In addition, information about the employment outcomes for 156 clients who had completed their vocational rehabilitation programs by July, 1982 was obtained.

The research was designed to provide data which would address the following questions:

1. Did vocational assessment programming have a measurable effect on client vocational self perception?
2. Did demographic variables such as age, disability, and education influence vocational self perception?
3. Did program variables such as length of program, time between assessment and closure, influence vocational self perception?
4. Was there a relationship between either pre or post-assessment vocational self perception and rehabilitation outcome?
5. Did demographic or program variables influence rehabilitation outcome?

Definitions

Definitions central to the study are as follows:

Vocational Assessment: A comprehensive appraisal of a per-

son, using a variety of individually selected assessment techniques including real or simulated work, and conducted by a trained evaluator to gather information about the individual's present and potential vocational characteristics. The information derived from vocational assessment is used to a) predict the likely outcome of rehabilitation services provided to the client, b) provide vocationally relevant information to the purchaser and client to assist in the establishment of a vocational objective and individualized, written rehabilitation program, and c) assist the client in vocational development by clarifying the possible match between his/her vocational characteristics and those of various occupations. (Note: The less popular term "vocational assessment" rather than "vocational evaluation" is used throughout this study to clarify distinctions between a client service and a methodology for determining program effectiveness.

Vocational Assessment Program. (a): An individually planned group of services designed to answer a specific set of referral questions (e.g. "Is Marie currently employable as an arc welder?") or requests (e.g. "Please provide Robbiewith an opportunity to explore her vocational interests and capabilities").

Vocational Assessment Program. (b): A formalized service organized by a rehabilitation facility to provide voca-

tional assessment services to disabled persons.

Program Evaluation: The systematic process by which the goals of a program are compared with its performance and outcome to determine effectiveness (adapted from Prazak, Prazak & Walker, 1971).

Vocational Rehabilitation Program: Provision of the full range of diagnostic, counseling, treatment, training, placement and follow-up services to eligible, disabled clients under the Rehabilitation Act of 1973 as amended. (A description of the vocational rehabilitation process and the various stages or statuses will be found in Appendix B, pages 164-166.)

Eligible Client: An individual with a diagnosed physical or mental disability which, for that individual, constitutes a substantial handicap to employment, and for whom vocational rehabilitation services may reasonably be expected to benefit the individual in terms of employability (Federal Register, 1975, p. 54700).

Vocational Evaluator: The professional staff member employed by a rehabilitation facility and assigned service delivery and case management responsibilities in a vocational assessment program.

Vocational Rehabilitation Counselor: The professional staff member employed in the State-Federal Program of Vocational Rehabilitation and assigned service delivery and case management responsibilities throughout the applicant, planning, service, placement and follow-up statuses.

Vocational Self Perception: A person's responses to the New Hampshire Questionnaire (Power & Robinson, 1977) about attitudes toward work and disability, job expectation, and self perceptions of stamina, tension, depression, self confidence, anger and confusion.

Limitations of the Study

The scope of this study was limited by the following factors:

1. Especially at the Vocational Development Center where the study was conducted, vocational assessment is complex. Some client programs included a wider range of assessment techniques and were thus substantially longer than others. Thus, it may be that internal factors, not recognized or controlled for in the study, influenced the findings. It did not seek to measure the effectiveness of specific assessment techniques. Therefore, although the study did provide data about overall program impact on a

specific type of client perception, it did not address the components within the program having the effect.

2. Pre-test, post-test follow-up designs are minimal control designs. As such, this study did not fully protect against error variance and cannot support cause and effect conclusions.

3. The clients included in this study were not selected randomly and thus may not reflect the actual client population served at the Center during the period covered by the study. Further, this sample is not representative of clients generally provided vocational assessment by other rehabilitation facilities. The results of this study must therefore be interpreted with considerable caution. It should be remembered, however, that this was a study of the effectiveness of a particular vocational assessment program in impacting on client vocational self perception.

4. This study examines only those variables for which data is available and thus does not include all factors which might influence vocational self perception and rehabilitation outcome.

C H A P T E R I I

LITERATURE REVIEW

Introduction

Field and Emener (1982, p. 43) include accountability as one of five major issues facing rehabilitation practitioners in the 1980s. They note that human service professionals have been deficient in evaluation of their work as measured by successful client outcome and suggest such studies as a measure of program worth. This chapter will provide a representative review of current professional literature and research on program evaluation of vocational assessment programs for the disabled.

Both process and outcome studies are recognized as having merit (Prazak, Prazak & Walter, 1975; CARF Standards Manual, 1982). However, the focus herein was on outcome studies as they directly effect clients. Process effectiveness relates to factors such as average number of days required per client, or average cost per person served (e.g. Witham, 1980). Outcome effectiveness examines the degree of accuracy with which assessment data predicts subsequent client behavior (e.g. Cook, 1978), the degree

of satisfaction expressed by clients and referral sources (e.g. Williams, 1976) and impact on the client such as changes in self concept (e.g. Emery, 1879).

Two major factors prompted the decision to focus on the impact of vocational assessment on clients. First, vocational assessment is an expensive component within rehabilitation. It is thus unlikely to survive unless its contribution to rehabilitation goals can be shown (Siork, 1980). By focusing on what happens during assessment and the resulting cost in time and money, process studies shed little light on program benefits. Conversely, outcome studies directly address product value.

Secondly, the State-Federal Program of Vocational Rehabilitation uses outcome studies to determine its own effectiveness (Federal Register, 1975, p. 54708). Since it continues to be the major source of funding for vocational assessment (Pruitt, 1977, p. 1), a similar approach concerning vocational assessment seemed appropriate.

There are three types of outcome studies: studies of predictive accuracy, user satisfaction, and client impact. Although all three are included in this review, primary attention will be devoted to those studies which address client impact. As the final refinement of focus, this review will address a particular type of client impact: vocational self perception.

The importance of the way in which a person views him/herself is evidenced in the literature from Freud (1935), through Murphy (1947), Snygg and Combs (1949), Rogers (1961), and Fitts (1965), to Combs, Avila & Purkey (1978) and Weinberg (1976). Several writers have argued a relationship between behavior and the way one views the various manifestations of self (e.g. Super, et al., 1963; American College Testing Program, 1969; Whitney, 1969; Downs, Farr & Colbeck, 1978). In addition, client focus is consistent with rehabilitation goals (Hawryluk, 1972; Emery, 1979).

Chapter II sections summarize literature relevant to:

- a) predictive accuracy and user satisfaction as measures of vocational assessment effectiveness,
- b) vocational self perception and self concept,
- c) the effects of vocational assessment on vocational self perception,
- d) the effects of vocational self perception on rehabilitation outcome, and
- e) The effects of client and program variables on vocational self perception and rehabilitation outcome.

Predictive Accuracy and User Satisfaction
as Measures of Vocational Assessment Effectiveness

As noted earlier, there are three categories of outcome studies in vocational evaluation: predictive accuracy, user satisfaction, and client impact. Although this study addressed client impact, the other two approaches will be examined briefly to demonstrate why, although more widely used, they provide insufficient evidence for program evaluation purposes.

Studies of predictive accuracy. Not surprisingly, many studies have attempted to determine the accuracy of predictions stemming from vocational assessment. Results suggest accuracy ranges of from less than chance (Cook, 1977; Cook and Brookings, 1980) to 70 - 74% (Miller, 1958; Rosenberg & Usdane, 1963; Beiseigel, 1976; Beech, 1980). There are several possible explanations for this disparity. Perhaps the most likely is that in studies where predictive accuracy was highest, assessment recommendations frequently had the effect of program assignment.

In an early study, for example, Miller, (1958) reported that assessment predicted outcome 74% of the time. However, outcome for most clients was placement in the same facility where the assessment was done. Because assessment recommendations were the basis for program assignment, the

finding is probably a better measure of how clients accepted them than of predictive accuracy. Her study did not address the appropriateness of either the recommendations or the clients decisions to accept them.

Another possible explanation is Holbert's (1970) contention that in vocational assessment, prediction becomes prophecy. Staff communicate their view that clients are not ready for vocational activity outside the facility. Clients accept this judgment and stay in the sheltered setting as recommended, thus confirming the prediction.

A second problem with predictive accuracy relates to the definition of outcome used. Many clients referred for assessment are severely disabled and require extensive services before competitive placement can even be considered. It is difficult to maintain follow-up over the long periods necessary to determine the impact of services on job placement. Therefore, prediction of entry into interim services is often substituted for employment outcome. As already noted, implementation of assessment recommendations is frequently a foregone conclusion in such situations.

A third problem was noted by Beiseigel (1976, p. 8). Prediction of outcome is based on the assumption that recommendations will be carried out. In predicting success in carpentry training, for instance, it is assumed that recommended tutorial assistance will be provided. If this

does not occur, the predictive accuracy really can not be tested. Several legitimate reasons may prevent implementation of the recommended services, but all reduce the likelihood that the original prediction will prove accurate.

As a whole, studies of predictive accuracy suggest that:

- a) although vocational assessment may be used as the basis for accurate predictions of program outcome, this has yet to be demonstrated consistently;
- b) following clients for a sufficient length of time to observe employment outcomes is difficult;
- c) intervening variables which evaluators could not anticipate often confound outcome predictions.

Therefore, studies of predictive accuracy are not, by themselves, likely to provide sufficient documentation of program efficacy.

Studies of user satisfaction. The term "user" may refer either to the client participant in vocational assessment or to the referral source purchasing the service. Interestingly, most user satisfaction studies found in the literature clearly focus on the latter, usually a rehabilitation counselor. In such studies, counselors are either directly asked about the usefulness of the service (e.g. Jacobson, 1973) or inferences are drawn from such counselor actions as response to the assessment recommendations

(Witham, 1980). Most studies report counselors as being satisfied with assessment programs at least 70% of the time. As Jacobson points out, however, counselor expectation is rarely considered. He reports data suggesting that since counselors don't really expect much in the way of recommendations, they are not often disappointed (1973, p. 37).

A few studies were found in which client satisfaction with the assessment was considered. Emery (1979) contacted 82 clients eight to eighteen months after assessment when two-thirds reported that the activity had been useful to them. Since nearly 83% also reported that they were carrying out the recommendations of the assessment, Emery suggests client recollections may be less informative than related behaviors.

Other researchers set goals for client acceptance of assessment recommendations as a measure of user satisfaction. Witham (1980), for example, reported having achieved the goal that 90% of assessment recommendations would be accepted by clients. Such goals appear to assume that clients are aware of the recommendations and that acceptance is equivalent to appropriateness. Studies which test the validity of such assumptions or which link client acceptance of the recommendations with predictive accuracy and outcome were not found.

Although user satisfaction studies were more uniformly

positive than those on predictive accuracy, they still must be considered insufficient as the sole basis for accountability. Ignoring the relationship between expectancy and satisfaction expressed by counselors is at best unfortunate. More importantly, client satisfaction has not been related to rehabilitation outcome. Therefore, neither this type of outcome measure nor predictive accuracy can be described as sufficient for program evaluation purposes.

Predictive accuracy and user satisfaction approaches to program evaluation of vocational assessment are obviously appropriate and should continued to be used and refined. As has been shown, however, they have yet to fulfill their promise. In addition, they do not directly address the extent to which vocational assessment impacts on clients in meaningful and desirable ways. The next sections of this chapter address the relationships between one's view of self, vocational assessment, demographic and program variables, and employment.

Vocational Self Perception and Self Concept

Discussion of the ways in which people view themselves is complicated by the many terms appearing in the literature: self, self concept, self perception, self esteem and self concept system, to name but a few. Despite disagreement on definitions and usage, most writers agree on the

importance of the construct in behavior. In Carl Rogers' theory, one's view of self "...becomes the most significant determinant of response to the environment." (Patterson, 1977, p. 202). Super (1951, p. 88) says "The choice of an occupation is one of the main points in life at which a young person is called on to state rather explicitly his concept of himself." In a later statement (1963, p 1), he adds that "...vocational preference is the occupational expression of self concept."

Combs, Avila and Purkey (1978, p 20) state that:

"The self-concept exerts its influence on every aspect of human behavior. When we know how people see themselves, much of their behavior becomes clear to us and we can often predict with great accuracy what they are likely to do next."

Fitts relates views of self and rehabilitation by indicating that self concept influences whether the person will "...desire, seek, cooperate with, participate in or successfully utilize rehabilitation." He also asserts that a person's feeling that he/she can overcome handicaps is central to successful rehabilitation (1972, p. 9).

Beyond consensus that perceptions of self are important, few writers agree on terminology or definitions and most describe the construct in broad terms:

"The individual's picture of himself, the perceived self with accrued meaning." (Super, 1963, p. 18)

"Self perceptions organized into various dimensions, metadimensions and systems, each of which defines a different aspect of personality structure and functioning." (Combs and Snygg, 1959, p. 49)

"...the organization of perceptions about self that seems to the individual to be who he or she is."

"Combs, Avila and Purkey, 1978, p. 17)

"...the sum total of all awarenesses and perceptions of self. (Fitts, 1972, p. 14)

As thus defined, the construct self concept is too broad to be used in program evaluation of a brief intervention such as vocational assessment (Chandler, 1978). As Super points out, a person has several self concepts, one for each role. He sees vocational self concept as "The constellation of self attributes considered by the individual to be vocationally relevant, whether or not they have been translated into a vocational preference" (1963, p. 19-20).

It would be difficult to use this narrower construct of vocational self concept in program evaluation. Because vocational self concept is made up of many vocationally relevant, self perceived attributes, each would have to be addressed. As defined herein, vocational self perception refers only to responses to items on the New Hampshire Questionnaire about attitude toward work and disability, job expectation, stamina, tension, depression, self confidence, confusion and anger. Other self perceptions, e.g. aptitudes, interests, and temperaments, are excluded.

An additional reason for not adopting the term self concept relates to its stability. Some researchers argue that the core of self concept is stable and that it changes

as a result of experience over time (e.g. Combs, Avila and Purkey, 1978, p 28). Chandler (1978) reached this conclusion after failing to note client change on sub-scales of the Tennessee Self Concept Scale following the intervention of vocational assessment.

Others, such as Wylie (1961, p. 182), disagree. However, evidence that self concept changes in periods as brief as those in most vocational assessment programs was not found. Conversely, other researchers (e.g. Dineen, 1975; Barker, 1978; Emery, 1979) report significant change after assessment on measures which addresses narrow ranges of self perceived attributes. For program evaluation purposes, it thus appeared appropriate to examine specific areas of perception which appear more sensitive to change as a result of a brief interventions.

The Effects of Vocational Assessment on Vocational Self Perception

The studies discussed thus far tended to address the accuracy with which outcomes were predicted and whether purchasers and consumers are satisfied. Except in a few instances, they were not structured to also provide evidence of client change as a result of assessment. In this section, however, studies which directly address that issue are reviewed.

Czerlinsky and Coker surveyed vocational evaluators in a national study (N=93) on several client related issues. Evaluators reported that vocational assessment helped clients identify and establish more realistic vocational objectives (1980, p. 41). As noted, Super contends that occupational choice reflects one's view of vocational self (1963). If this is true, changes in occupational choice after assessment suggest that the program had an impact on the way in which clients perceive themselves.

Besides providing only indirect information about the effect of assessment on clients, this study suffered from a lack of representativeness of vocational evaluators nationally and a rate of return of under 50% as compared, for instance, with a 74% rate for 48 surveys reported by Dillman (1978, p. 21). Further, the writers present no data about the evaluators, the facilities in which they worked, or the clients served.

Spergel (1970) provided more direct evidence of the effectiveness of a vocational assessment unit. The rehabilitation outcomes of 281 persons who completed vocational assessment were compared with those of 250 persons in a control group matched for age, sex, education, race, reading ability and disability. At follow-up, the experimental group had "...a higher number of jobs in a wider range of occupations and to have become more aware of aptitudes, interests and gains, and increased knowledge about the

world of work in general." (1970, p. 22). Unfortunately, Spergel did not report actual differences in jobs found or how information gains were measured.

Jacobson (1973) studied two groups of clients matched on six variables. One group (N=167) received vocational assessment services while the other did not. Since both groups had similar outcomes, he concluded that "...client success in employment has little or nothing to do with assessment services provided." However, he further stated that clients referred for assessment are "...the tougher, longer-term clients with which the counselor has to deal." That services "...allowed them have to be at least as successful as the 'less tough' whom the counselors chose not to refer suggests that assessment had a significant impact." (p.30).

Jacobson acknowledges the problems raised by this argument: "...the characteristics that represent this toughness are too subtle to be used in selecting equitable sample groups." It is equally difficult to first state that the groups have been matched and then suggest differences, regardless of how difficult they may have been to define.

Tseng (1977) monitored training success rates for matched groups of clients. Clients who participated in assessment had a training completion rate 18% higher than that of clients who had not received assessment services.

Also, assessment clients were reported to have made significant gains ($P > .05$) in "self acceptance" as measured on a three item, semantic differential instrument. Unfortunately, reliability and validity data for the instrument were not given and if success in training was compared with self acceptance, the results were not reported.

These studies (Spergel, 1979; Jacobson, 1973; Tseng 1977) all used matched groups to measure the impact of vocational assessment. Besides other problems, they shared in the frustrations of this approach to research design. Kerlinger (1973, p. 310-311) notes that matching groups on more than two variables is extremely difficult and not a substitute for randomization. This point is emphasized by Jacobson's statement that 3,500 case records had to be examined to find a control group. As previously noted, he was forced to conclude that important differences remained even after this effort. Despite weaknesses, these studies suggest that the assessment had desirable, if unclear, effects on participants.

Kennedy (1973) used an unpublished abilities self rating form to see if vocational assessment programming improved client ability to rate their vocational aptitudes.

Self ratings before and after assessment were compared with evaluator ratings of client aptitude. It was found that following assessment, client ratings were significantly ($P > .05$) closer to those of the evaluator for four

of eleven aptitudes, motor coordination, finger dexterity, form perception and spatial relations. Although the same trend was noted for two other aptitudes, the size of the change was not significant. No change was noted for the remaining aptitudes.

Barker (1978) adapted the Self Directed Search (SDS, Holland, 1979) for use with visually impaired clients (N=26). She hypothesized that use of the instrument plus an interview in which the results were interpreted and discussed, would be sufficient to increase the consistency between stated occupational interests and the SDS results. She reported that the hypothesis was confirmed at the $P > .005$ level (p. 59.). This finding is especially interesting since research suggests that compatibility between a person's SDS code and occupational choice increases the likelihood of job satisfaction and stability (e.g. Viernstein, 1972; Holland, 1973; Toenjes & Borgen, 1974; Gottfredson & Lipstein, 1975; Rounds et al., 1978). Barker's data suggests that a limited assessment intervention can effect desirable changes in stated vocational goals.

Using the Miskimins Self-Goal-Other Discrepancy Scale (Miskimins, 1967), Dineen (1975) found that vocational assessment resulted in increased client awareness of vocational characteristics of a small (N=22) group of reluctant learners. Despite the small sample size, the study is of interest because, like Barker, he reports change in speci-

fic client perceptions as a result of assessment. Unfortunately, the study has not been replicated with larger client groups having other disability characteristics.

Chandler (1978) conducted a small, well designed study program evaluation study using three measures: the Tennessee Self Concept Scale (Fitts, 1964), the Career Maturity Inventory (Crites, 1973) and a specially developed participant survey. The experimental group consisted of 34 clients in assessment. She also used a control group of 12 clients scheduled for assessment but not yet served. After finding no significant differences between the groups on any of the measures, Chandler speculated that client changes resulting from vocational assessment must lie in areas other than self concept and career maturity. "These concepts are by definition quite stable and insensitive to brief experiences" (Chandler, 1978, p. 100). She also noted what may have been an important design flaw: clients were not given feedback about the results of the assessment until after the post-test.

Emery (1979) reported on a study which had few of the design flaws previously noted:

- a) her sample was of respectable size (N=82),
- b) the structure of the vocational assessment program being evaluated encouraged feedback of information to the client,
- c) a measure which focused on specific voca-

tional perceptions was administered (NHQ, Power & Robinson, 1977), and

- d) besides administration of the measure immediately before and after assessment, she incorporated a follow-up.

Her findings included significant, positive changes in group means ($P > .05$) on the total scale and three sub-scales identified by factor analysis (Work Attitude, Attitude Toward Job Getting Ability and General Life Satisfaction).

Summary of the effects of vocational assessment on vocational self perception. Spokane and Oliver (1982) note that most vocational interventions seem to result in consistently detectable gains despite wide differences in treatment interactions. Although they specifically excluded studies of interventions with disabled persons from their reviews, they present four factors which underlie effective career interventions :

1. Exposure to occupational information.
2. Cognitive rehearsal of vocational aspirations.
3. Acquisition of some cognitive structure for organizing information about self, occupations, and their relations.
4. Social support or re-enforcement from counselor or other participants (1982, p. 7).

These factors are consistent with the objectives of vocational assessment programs for the disabled, and are useful in examining the studies of client impact discussed in this section. Unfortunately, few of the studies contain adequate detail about program activity.

From personal knowledge of several of the programs involved, it seems unlikely that all four factors were consistently present for all clients in all facilities. Because this researcher worked at the Vocational Development Center during the period of data collection for Emery's study, however, it is known that they were incorporated into policy and practice. Occupational information was routinely provided; clients were encouraged to organize personal and occupational data using the Dictionary of Occupational Titles (U.S. Department of Labor, 1977) structure which permits comparison between client and occupational information; active re-enforcement of positive vocational behaviors was routinely provided by staff and other clients; counseling was provided to encourage cognitive rehearsal of vocational aspirations and clarification of the steps by which they might be realized.

The studies reviewed in this section varied in focus from addressing possible changes in specific types of perception (e.g. Kennedy), to examining broad concepts (e.g. Chandler). They also varied considerably in size and sophistication of research design. Finally, most studies

used different measurement techniques. Except for Barker (1978), researchers who used the better standardized measures reported the smallest client change. Thus, it is necessary to conclude that despite some evidence that vocational assessment has a positive effect on vocational self perception, the degree and type of effect is far from clear. The studies discussed in this section do, however, demonstrate considerable interest in the extent to which vocational assessment effects vocational self perception.

The Effects of Vocational Self Perception on Rehabilitation Outcome

In the previous section, studies relating to the impact of vocational assessment on self perception were presented. Although the findings of these studies are far from consistent, positive impact on self perception occurred most often when measures addressing specific aspects of self perception were used. In this section, the extent to which vocational self perception has been shown to impact on rehabilitation outcome will be examined.

Lytel (1978) states that there are two major indicators of employability: identifiable aptitudes and accurate self perceptions. He notes that inaccurate self perceptions are often rooted in the beliefs people hold about themselves and that they influence occupational choice as

as well as employability. He identifies concepts of importance as "...locus of control, realistic appraisal of limitations, values relevant to vocational choices and self-conceptualizations of skills". Although citing no direct evidence to support these statements, he noted that Neff (1973) and Israel (1973) found self esteem significantly related to employment. Interestingly, both of these researchers report that clients who were appropriately self depreciating had higher job success rates.

Barry et al (1967) reports on a study of 94 patients in a psychiatric hospital who were given an unpublished social vocabulary index as part of a test battery. Work status one year later was determined by direct follow-up. Test data obtained during hospitalization was re-analyzed to identify differences between employed and not employed groups. Staff also used information from the follow-up and case records to judge "...motivation for return to work". Both this factor and employment status were found to correlate significantly with the assessment data on "...attitudes toward self and particularly with the discrepancy between self-ratings of the ideal and the real self" (p. 9).

Barry also reports that feelings of discomfort and dissatisfaction with self are an important part of what is meant by motivation for return to work. This finding would appear generally supportive of previously discussed

conclusions by Neff (1973) and Israel (1973) that openness in discussing one's faults (appropriate self depreciation) correlates with rehabilitation success.

Another study of rehabilitation outcome with psychiatric patients was conducted by Berry and Miskimins (1969) and involved four groups of 26 subjects each. Three of the groups were patients of the hospital and the fourth was made up of non-disabled workers recruited for the study. The first hospital group consisted of patients employed successfully in competitive jobs for at least three months. The second group contained patients who had tried and failed at competitive placement. The last group consisted of those whom rehabilitation staff considered too severely disabled to hold jobs even though they had been referred for job placement. The researchers report that all four groups were matched for age, sex and level of education.

The measure used in the study was the Miskimins Self-Goal-Other Discrepancy Scale (MSGO. Miskimins, 1967). The author describes it as a technique "...for measuring the discrepancies in a person's alignment of self-concept, goal self-concept, and perception of how other evaluate him/her on a given area of concern" (p. 103).

Findings of the study include significant differences on the MSGO between employed and not employed groups. The types of anxiety experienced by employed groups were dif-

ferent (and judged more healthy by staff) than those experienced by groups not employed. Significantly, the researchers conclude that the self concepts of persons in the successfully employed patient group did not differ significantly from those of persons in the non-disabled group.

Two studies which examined relationships between vocational self perception and rehabilitation of physically disabled subjects were also located. The first is a longitudinal study of rehabilitation success reported by Bolton (1978). Test and follow-up data was obtained in 1977 for 32 of 90 clients who began receiving vocational rehabilitation services between 1969 and 1972. The mean amount of time between completion of services and follow-up was 6.3 years. Bolton notes a response rate of 54% when corrected for those individuals who were known to be deceased, in prison or who could not be located. Sixty-two percent of the clients were employed at follow-up.

Scores on the Tennessee Self Concept Scale (Fitts, 1964) were found to be significantly more positive at follow-up than at referral. Further, self reports of social participation at follow-up were found to be positively associated with enhanced self esteem over the six year interval. Finally, social participation was also found to be significantly related to overall psychological adjustment and vocational success.

In a previously mentioned study, Emery (1979) examined the relationship between mean scores on the New Hampshire Questionnaire after vocational assessment and status at follow-up 8 to 18 months after assessment. Follow-up data included a structured interview conducted by specially hired staff, a social adjustment questionnaire to identify change-producing events other than the effects of the vocational assessment, and re-administration of the NHQ. After the interview, overall client change was judged by the interviewers as being either positive or negative.

This is the only study found in the literature where an attempt was made to identify other factors in client lives which might account for changes in self perception. Emery reports that scores on the Social Adjustment Questionnaire were not significant for 95% of the sample. "This finding would appear to strengthen the internal validity of the study by reducing the likelihood that other major external or internal change-producing events had occurred to them since they began assessment" (1979 p. 35).

Two of the sub-scales of the New Hampshire Questionnaire (Attitude toward Job Getting Ability and General Life Satisfaction) correlated significantly with ratings for overall client change. Attitude toward Job Getting Ability also correlated significantly with the degree to which clients reported participating in the implementation of assessment recommendations.

The interviewers judged the lives of nearly four of five clients to have changed in a positive direction since assessment. Emery noted additional positive, significant correlations between interviewer ratings of overall change and client self perceptions of the value of the assessment. Also, there were positive correlations between client self perception of the value of assessment and perceived participation in implementation of assessment recommendations. Finally, Emery found that although NHQ mean scores were lower at follow-up than immediately after assessment, they remained above pre-assessment levels, suggesting that the positive effects of the assessment had been partially retained.

Two factors in this study limit its usefulness. First, nearly half of the clients (n=38), were still involved in rehabilitation services at follow-up so that any judgement regarding impact of assessment on closure status was difficult. Second, bi-polar estimation of client change simplified statistical treatment of the data but inferred that change either did or did not take place rather than the more likely possibility that it occurred in degrees.

Summary of studies on the effects of vocational self perception on rehabilitation outcome. Despite wide variations in outcome definitions, self perception measures,

and client populations, the way in which people view themselves appears to have measurable impact on their status at follow-up. Factors such as sample size, sample selection, and time between assessment and follow-up also vary widely. It would appear, however, that the data in this and the preceding sections support the contention that vocational assessment can influence vocational self perception in a positive direction and that in turn, perception has a salutary effect on rehabilitation outcome.

The Effects of Demographic and Program Variables
on Vocational Self Perception and Rehabilitation Outcome

Many demographic and program variables have been suggested by researchers as significant determinants of vocational self perception and rehabilitation outcome. Seven studies will be presented in this section, five of which suggest variables of relevance to rehabilitation outcome, and two which consider relationships between client variables and vocational self perception.

Variables and vocational self perception. Weinberg (1976) studied the effects of disability on self perception by comparing responses of disabled and non disabled college students (N=278) matched for sex and year in school. She used the Person-Description-Questionnaire (PDQ, Weinberg,

1976) which taps a variety of personal perceptions and social opinions. Of general interest is the finding that perceptions about self and disability were similar for both student groups. More specifically, however, it was found that of age, sex and educational level, only sex discriminated between response patterns.

Females perceived themselves as more emotional, sensitive, moral, agreeable to be with, and less aggressive and courageous than did males. Since it was noted that these perceptions and differences held true for both student groups, Weinberg concludes that a person's sex appears to have a more significant impact on self perception than does physical condition. Her data thus suggests that sex is a powerful determinant of the way in which people view themselves.

Emery (1979) found that before assessment, disability type was positively correlated with vocational self perception as measured by the New Hampshire Questionnaire. Clients with psychiatric diagnoses were significantly more negative on the NHQ than were clients with physical disabilities ($F= 5.813, P> .004$). Age, sex, marital status and benefit status were not found to be significant in vocational self perception before assessment.

None of the variables correlated significantly with NHQ scores immediately following assessment, although age approached significance ($F=2.381, P> .0759$). At follow-up,

an average of 18 months after assessment, age and marital status correlated significantly with at least one sub-scale of the NHQ. Marital status and Work Attitude were negatively correlated. While age and Attitude toward Job Getting Ability were also reported as being correlated, the direction of the correlation was not given. Correlations between demographic variables and employment outcome for those clients who had completed their rehabilitation programs were likewise not given.

Client variables and rehabilitation outcome. Aiduk & Langmeyer (1972) examined the records of 238 closed case records of vocational rehabilitation clients and analyzed the extent to which age, race, sex, education, referral source and disability category effected employment success. No significant correlations were found. They note that all the clients in their study had psychiatric disabilities and that their findings were "...not in harmony..." with studies of other client populations.

Buell and Anthony (1973) used the same variables in a study of rehabilitation outcomes for a group of 78 psychiatric patients. They report that the most significant variable in predicting successful employment after hospitalization was employment history. Multiple regression analysis identified diagnosis, marital status, race and occupational level as also being significantly related to

outcome, but the amount of variance accounted for by these variables was minor (6.1% of the total variance in post-hospitalization employment) compared to that of work history (37.9%). As a group, the ten variables considered by Buell & Anthony accounted for 53.2% of variance in employment status.

Lynch (1981) reports on a study with 270 vocational rehabilitation clients in which functional factors such as capacity for exertion were included with traditional client variables to develop a model for predicting rehabilitation outcome. The combination of variables finally used accounted for 44.4% of the variance in employment success. Age and work history were two client variables included in the analysis but Lynch does not include data to indicate the contribution of each component.

Fitzgerald et al (1982) studied the rehabilitation outcomes for a group of 136 clients with a history of cardiac disability. Successful outcome was defined as "...a regular remunerative job, participation in a training program or housewife." Client variables included in the study were age, sex, race, marital status, number of dependents, education, occupation and salary at time of acceptance for rehabilitation, cardiac diagnosis, functional heart classification and length of rehabilitation program.

The only variable that significantly accounted for employed versus not employed outcomes was the functional

heart classification. The authors note that although a much higher proportion of women had a successful rehabilitation outcome, the difference was not significant when the data were re-analyzed to account for the outcome of homemaker.

Finally, Tebb (1981) reports on the rehabilitation outcomes for a sample of 10,585 injured workers in California. The variables reported to be significant in distinguishing between successful workers and their unsuccessful counterparts relate to program considerations.

In essence, the longer the rehabilitation program, the less likely a successful outcome. Tebb notes that this difference is partly related to the type of re-training provided, with an inverse relationship between training time and outcome. The success rate by various types of educational programs varies from a low of 52% for formal schooling to a high of 72% for programs in which on-the-job training and schooling are combined. Because this sample is so large, it is unfortunate that data concerning the extent to which other variables correlated with outcome was not provided.

A consistent pattern of variables which impact on vocational self perception or rehabilitation outcome was not found in the studies reviewed. In the absence of evidence that only a few variables are relevant, as many as possible should be included for study.

Chapter Summary

In this chapter, literature relevant to four major areas have been examined. It is now appropriate to summarize the material in relation to those areas.

1. Predictive accuracy and user satisfaction as measures of vocational assessment effectiveness. Studies of the predictive accuracy of vocational assessment suggest that the degree of precision is sensitive to study design, outcome definition, and a variety of intervening variables which could not be anticipated at the time of assessment. It was noted that following clients for a period sufficient to measure employment outcome is difficult at best and thus many studies settle for interim outcomes. Such a compromise tends to reduce the usefulness of the studies since in many instances assessment recommendations for rehabilitation service have the effect of assignment for that service. Still, there is evidence that assessment can be used to predict the success of subsequent programming. The studies reviewed included no mention of relationships between client perception and predictive accuracy.

Studies of user satisfaction were more uniformly positive than those of predictive accuracy. Clients and purchasers generally report that assessment was helpful. Studies which account for the expectation of users were not

located, however. Although it was concluded that studies of user satisfaction and predictive accuracy are appropriate in program evaluation of vocational assessment programs, evidence that they form a sufficient basis for demonstration of accountability was not found. They have not produced consistent evidence of product value and do not directly address client change, the major approach to program evaluation used in vocational rehabilitation.

2. Relationships between vocational self perception and self concept. One's view of self, whether labeled self perception, self concept, self esteem or a variant thereof, is generally accepted as important. Considerable disagreement exists about definitions, perhaps explaining the number of measurement approaches found in the literature. Studies of client change support the contention that measures of specific perceptions are more likely to tap change over the 1 - 4 weeks generally involved in vocational assessment. Measures such as the Tennessee Self Concept Scale and the Career Maturity Inventory thus appear less useful for program evaluation purposes than those which address more specific areas of perception such as the Miskimins Self-Goal-Other Scale or the New Hampshire Questionnaire.

3. The effects of vocational assessment on vocational

self perception. In general, studies examining self concept have not reported significant change after assessment. Conversely, those which identified specific areas of change in perception such as accuracy in self rating of aptitudes and job related expectations did note client change. It was also noted that studies which used the most widely recognized measures, were less likely to find such change. While this raises questions about the validity and reliability of measures on which change was noted, it may also reflect an effort to develop new instruments which measure more specific shifts in perception over shorter periods of time.

These studies demonstrate considerable interest by researchers in measuring the impact of assessment directly on client perception. More optimistically, they may be viewed as suggesting that assessment does indeed impact on vocational self perceptions, although the nature and extent of the impact remains far from clear. Little information was found to suggest which vocational assessment activities might account for such change.

4. The effects of vocational self perception on rehabilitation outcome. Wide variations in measurements used, sample populations and definitions of rehabilitation outcome were found. Nonetheless, most of the studies reviewed suggest that whether people view themselves in a specific,

vocational context or in relation to broader constructs of self esteem and self concept, these views correlate with outcome and employment status. Such findings suggest that vocational perception should be of concern in vocational assessment programming and that changes therein are appropriately addressed as part of program evaluation efforts.

The content of rehabilitation services which exert a positive effect on client self views are not identified in any of the studies. Still, the studies reviewed suggest that something happens during vocational rehabilitation programming which helps clients to change their self perceptions. This in turn is related to successful outcomes. It thus appears appropriate to examine various components of the rehabilitation process to identify the extent to which they contribute to successful client outcome.

5. The effects of client and program variables on vocational self perception and rehabilitation outcome. Sex, primary disability, age, work history and marital status are frequently identified as significant client variables in rehabilitation outcome. The amount of time required to complete rehabilitation was the only program variable shown to correlate with rehabilitation outcome of physically disabled clients. Age, work history, and previous hospitalizations were reported to correlate with employment success of clients having psychiatric diagnoses.

It would thus appear that none of the variables usually included in program evaluation studies have been consistently demonstrated as important to vocational self perception or rehabilitation outcome. Until a smaller number of variables are shown to be relevant, it seem appropriate to continue to include as many as possible.

C H A P T E R I I I

RESEARCH DESIGN

Introduction

Vocational assessment programs for the disabled, like other human service delivery systems, must demonstrate accountability. As discussed in Chapter II, evaluating direct impact of vocational assessment programs on clients is compatible with various professional standards and regulations and the vocational rehabilitation process. This study addressed the impact of a particular vocational assessment program on client vocational self perception. This construct has been shown to relate to subsequent vocational behavior and is thus a desirable proximal measure of program benefit.

The study expanded on Emery's (1979) work by enlarging her original sample from 82 to 183 clients. Her follow-up study, which took place while most of the clients were still receiving rehabilitation services, was replaced with one completed after most of the clients had completed their programs and been closed as either employed or not employed.

Specifically, the study examined relationships between three types of data about a group (N=183) of disabled clients of the New Hampshire Vocational Rehabilitation Division who were provided vocational assessment programs at the Vocational Development Center in Manchester, New Hampshire between August, 1976 and May, 1979. The three types of data include:

1. client vocational self perception as measured by the New Hampshire Questionnaire immediately before and after assessment,
2. fifteen demographic and program variables, and
3. the employment status of the clients who completed rehabilitation services before June, 1982.

Four hypotheses, each stated in the null form, were developed to examine the relationships between these data. The hypotheses and related sub-hypotheses are listed in the following section.

Hypotheses

Hypothesis # One:

Client vocational self perception, as measured by the New Hampshire Questionnaire (Power & Robinson, 1977) immediately before and after vocational assessment

programming will not vary significantly.

Sub-Hypotheses:

- A. The mean, total NHQ score for the sample immediately following vocational assessment will not differ significantly from the mean, total NHQ score immediately preceding vocational assessment.
- B. Item mean scores for the original sub-scales of the NHQ including Stamina (STAMNA), Work Attitude (WRKATT), Anger (ANGER), Tension (TENSN), Depression (DEPRES), Self Confidence (SLFCON), Confusion (CONFSN), Positive Attitude (POSATT), Disability Attitude (DISATT), and Job Expectation (JOBEXP) will not differ significantly immediately before and after vocational assessment.
- C. Item mean scores for the sub-scales suggested by Emery (1979) including General Life Satisfaction, (GLS) and Attitude Toward Job Getting Ability (AJGA) will not differ significantly immediately before and after vocational assessment.
- D. Item mean scores for new sub-scales identified by item analysis of NHQ scores for the entire sample will not vary significantly immediately before and after vocational assessment.

Hypothesis # Two:

There will be no significant differences in vocational

self perception, as measured by the New Hampshire Questionnaire immediately preceding and following vocational assessment, on the demographic and program variables included in the study.

Sub-Hypotheses:

- A. Client age immediately before assessment, a categorical variable, including 1) under 20, 2) 20 through 24, 3) 25 through 29, 4) 30 through 34, 5) 35 through 39, 6) 40 through 44, 7) 45 through 49, and 8) 50 and older will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- B. Client sex, a categorical variable including 1) Male and 2) Female, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- C. Marital status immediately before assessment, a categorical variable including 1) Married, 2) Widow/Widower, 3) Divorced, and 4) Never Married, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- D. Client primary disability assessment, a categorical variable including 1) Primarily Visual, 2) Bad Back, 3) Other Orthopedic, 4) Mental, and 5) Internal Organ, will not correlate significantly

- with total, mean scores on the NHQ before or after assessment.
- E. Number of Disabilities, a categorical variable including 1) One, 2) Two, and 3) Three or more, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
 - F. Severe Disability coding, a categorical variable including 1) Yes and 2) No, will not correlate significantly with total, mean scores on the NHQ.
 - G. Work Experience prior to assessment, a categorical variable including 1) One to Twelve Months, 2) Thirteen to Thirty-five Months, 3) Thirty-six Months and Over, and 4) None, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
 - H. Benefits Being Received at Assessment, a categorical variable including 1) Social Security Disability Insurance Benefits (SSDI), 2) Supplemental Security Income (SSI), 3) Local, County or State Welfare (LCS), 4) Veterans Benefits (VET), 5) Workers Compensation Payments (WC), or 6) None, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
 - I. Educational Level immediately prior to assessment, a categorical variable including 1) Eight Years or Less, 2) Nine through Eleven Years, 3) Twelve

- Years, and 4) Thirteen years or more, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- J. Length of Vocational Assessment, a categorical variable including 1) One to Three Days, 2) Four Days, 3) Five Days, 4) Six Days, 5) Seven Days, 6) Eight Days, 7) Nine or Ten Days, and 8) Eleven or More Days, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- K. Source of Referral, a categorical variable including 1) Manchester Regional Office, 2) Keene Regional Office, 3) Concord Regional Office, 4) Portsmouth Regional Office, 5) Berlin Regional Office, and 6) Blind Services Unit, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- L. Assigned Evaluator, a categorical variable including 1) Evaluator AA, 2) Evaluator BB, 3) Evaluator CC, 4) Evaluator DD and 5) Evaluator EE, will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- M. Vocational Rehabilitation Status immediately before assessment, a categorical variable including 1) Status 02 (referral) or 06 (extended evaluation), 2) Status 10 (accepted) or 12 (rehabilita-

- tion plan completed), or 3) Status 14 through 24 (service, placement, or awaiting service status) will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- N. Status at Follow-up, a categorical variable including 1) Closed - Not Employed (Statuses 08, 28 or 30), 2) Closed - Employed (Status 26) and 3) Still in Program (Statuses 02, 05, 10, 12, 14, 16, 18, 20, 22 and 24), will not correlate significantly with total, mean scores on the NHQ before or after assessment.
- O. Months Between Assessment and Closure, a continuous variable, will not correlate significantly with total, mean scores on the NHQ before or after assessment.

Hypothesis # Three:

Vocational self perception, as measured by the New Hampshire Questionnaire, will not be significantly different for clients closed in employed and not employed statuses.

Sub-Hypotheses:

- A. Mean total scores on the NHQ immediately before and after assessment will not be significantly different for clients subsequently closed in

- employed status (Status 26) than for clients subsequently closed in not employed statuses (08, 28, and 30).
- B. Item mean scores on the original sub-scales of the NHQ for clients subsequently closed in employment (status 26) and for clients subsequently closed not employed (statuses 08, 28, and 30) will not vary significantly before or after assessment.
- C. Item mean scores on the sub-scales of the NHQ suggested by Emery (1979) for clients subsequently closed employed (status 26) and for clients subsequently closed in not employed statuses (08, 28, and 30) will not vary significantly before or after assessment.
- D. Item mean scores on sub-scales identified by item analysis for clients subsequently closed employed (Status 26) and for clients subsequently closed not employed (statuses 08, 28, and 30) will not vary significantly before or after assessment.

Hypothesis # Four:

The dependent variable of vocational rehabilitation closure status will not correlate significantly with any of the independent demographic and program variables included in the study.

Sub-Hypotheses:

- A. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with client age immediately before assessment, a continuous variable.
- B. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Client Sex, a categorical variable including 1) Male and 2) Female.
- C. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Marital Status immediately before assessment, a categorical variable including 1) Married, 2) Widow-Widower, 3) Divorced, and 4) Never Married.
- D. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Client Primary Disability, a categorical variable including 1) Primarily Visual, 2) Bad Back, 3) Other Orthopedic, 4) Mental, and 5) Internal Organ.
- E. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Number of Disabilities, a categorical variable including 1) One, 2) Two, and 3) Three or more.

- F. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Severe Disability coding, a categorical variable including 1) Yes, and 2) No.
- G. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Work Experience before Assessment, a categorical variable including 1) One to Twelve Months, 2) Thirteen to thirty-five Months, Thirty-six Months and Over, and 4) None.
- H. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Benefits Received at Assessment, a categorical variable including 1) Social Security Disabilities Income (SSDI), 2) Supplemental Security Income (SSI), 3) Local, County, or State Welfare (LCS), 4) Veterans Benefits (VET), 5) Workers Compensation (WC), or 6) None.
- I. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Educational Level immediately before assessment, a continuous variable.

- J. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Length of Vocational Assessment, a continuous variable.
- K. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Source of Referral, a categorical variable including 1) Manchester Regional Office, 2) Keene Regional Office, 3) Concord Regional Office, 4) Portsmouth Regional Office, 5) Berlin Regional Office, and 6) Blind Services Unit.
- L. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Assigned Evaluator, a categorical variable including 1) Evaluator AA, 2) Evaluator BB, 3) Evaluator CC, 4) Evaluator DD, and 5) Evaluator EE.
- M. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Vocational Rehabilitation Status immediately before assessment, a categorical variable including 1) Status 02 (referral) or 06 (extended evaluation), 2) Status 10 (accepted) or 12 (rehabilitation plan completed), or 3) Status 14 through 24 (service,

placement, or awaiting service).

- N. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Months Between Assessment and Closure, a continuous variable.

Research Setting

Individuals included in the study were clients of the New Hampshire Vocational Rehabilitation Division (hereinafter called the Division), who had formally applied for rehabilitation services to assist them toward gainful employment. As part of an agreed-on diagnostic or service plan, the clients were provided with vocational assessment services at the Vocational Development Center (hereinafter called the Center).

The Center, located in New Hampshire's largest city, was a direct service component of the Division. All clients served were referred by Division counselors and could be in any of the Vocational Rehabilitation service statuses (02 through 24), although they were most likely to be in eligibility and planning statuses (02, 06 and 10).

During the 35 months included in initial data gathering period, there were ten full time and two part time staff positions at the Center. The part-time staff were consultants in psychology and physiatry while full time

staff included three vocational evaluators, two secretaries, one workshop foreman, one rehabilitation nurse, one social worker, an evaluation supervisor, and a program director. Within the data collection period, all original incumbents had left the Center with some positions turning over more than once. This lack of continuity is not at all unusual in a facility of this type and is mentioned because of the negative effect it may have had on data collection.

The Vocational Assessment Program

Because individualized vocational assessment programs were developed for each client, the length of each program varied in relation to the assessment questions addressed and the range of assessment techniques required to address them. All clients were assigned a case manager, usually a vocational evaluator. In addition, clients were routinely seen by the supervisor for orientation, by the social worker for detailed history, by the nurse for screening, and by the consultants as needed.

Administrative policies in force during the period covered by the study encouraged maximum client participation in the assessment process. Although individual circumstances made it unlikely that all clients would participate in all the activities described below, such activities demonstrate an intent that clients play as active a

role as possible.

Client access to information. On the first day, clients participated in interviews to clarify the purposes of the evaluation and the specific referral questions. Clients were encouraged to formulate additional questions of their own. Selection of assessment techniques to obtain the necessary information was also discussed with the clients. Besides a verbal explanation of each technique, a non-technical, written description was available in written form.

In most instances, tests and work samples were scored immediately after completion with the results made directly available to the client. Performance results, technique descriptions, and the assessment plan were stored in an open file where the client could refer to them at will. During a formal exit interview, this information was discussed once again with the client and they were encouraged to participate in the development of recommendations.

Assessment Program Components. The vocational assessment program in operation at the Center during the period of the study included four categories of techniques which were selectively used to obtain the information requested by the referring counselor and the client.

Case Review and Analysis. Medical, social, educa-

tional, cultural and vocational aspects of the client's history were identified and evaluated to determine work assets and liabilities the client might possess. To the extent possible, these areas of background were obtained from records provided by the referring counselor and through interviews with the client. Additional detail was provided by the medical and psychological staff after direct examination. The social worker interviewed family members as needed.

Standardized Testing. An array of aptitude, interest, and ability tests were available for use. Most of these tests had high face validity so that the client could easily relate them to the assessment plan.

Work Samples. A variety of commercial and locally developed work samples were available. All were based on job analysis. These samples covered a wide range of occupational activity and offered clients a chance for hands-on exposure to the tools and tasks of an occupation in which they had an interest.

Occupational Exploration Activities. Occupational information in written and audio-visual formats, field trips, interviews with workers in an occupation, and job tryouts were available. As part of this activity group,

clients were encouraged to use the language structure of the Dictionary of Occupational Titles (Department of Labor, 1977) to compare their work related characteristics with those of various occupations.

Throughout the assessment program, clients were encouraged to relate activity with their vocational aspirations and to identify specific work tasks and jobs which they could do. Thus it appears that throughout the assessment program, activities which helped clients clarify their vocational potentials were emphasized. While program content was designed to collect the information requested by the referring counselor, it was also intended to impact on the quantity and accuracy of information which the client had about his/her own vocational characteristics in relation to the demands and rewards of the world of work. Emphasis was placed on giving clients an opportunity to clarify this relationship through hands-on experiences.

The Client Sample

The subjects in this study were 183 disabled clients of the New Hampshire Vocational Rehabilitation Division who completed the New Hampshire Questionnaire both before and after vocational assessment at the Center. All of the clients were assessed between August, 1976 and May, 1979. The sample represented 24% of the 766 clients served by the

Center during the thirty-four month period covered by the study.

The original goal of collecting NHQ scores on over half of the population proved unrealistic. The nature of the program itself was probably the most significant barrier to routine data collection. The number of days a client stayed in program and the sequence of activities during that time were solely determined by the types of assessment questions raised by the referring counselor, the client and the evaluator. This made it impossible to schedule the administration of the NHQ on a regular basis. Further, termination decisions were made by the client and evaluator when they agreed that information necessary to answer assessment questions had been gathered. If this occurred near the end of a day, it was difficult to ask the client to return another day to take the NHQ again.

A related problem stemmed from the emphasis on relating client activity directly to assessment questions and providing clients with feedback on results. To avoid contamination of the data, the Questionnaires were purposely not scored until after the client left program. Therefore, they had no reason to be concerned with completing it since they would not benefit directly.

The turnover in staff during the study was also a factor in data collection problems. All but one of those involved in the development of the Questionnaire left the

Center within the first half of the data collection period. New staff received little or no orientation to the purposes of the study and were thus not as heavily invested in carrying it out.

Since the sample was not obtained in a systematic manner, comparison of its demographic characteristics with those of the population would be desirable. Unfortunately, the Center was closed in 1982 and the necessary records became unavailable. Data presented by Beiseigel in 1976 suggests that the Center population in that year contained clients of approximately the same age as those in the sample (sample mean = 33.46; 1976 Center population mean = 31.06). Apparently, however, the population also contained higher percentages of severely disabled, deaf, mentally and multiply disabled than was characteristic of the sample. Unfortunately, she did not report data about other client characteristics. In the absence of such information, it is not possible to assume that the clients in the sample represented the population from which they were drawn. Conversely, there is no reason to believe that the sample was systematically biased.

An additional comment about sample representativeness is appropriate. The Center itself was atypical of facility programs in New England in that it was one of two that were publically operated, and alone in offering vocational assessment as its only service. The majority of facilities

provide a range of assessment and treatment services and are operated by private, non-profit organizations serving a variety of referral sources as opposed to accepting clients solely from the Division of Vocational Rehabilitation.

These differences result in disparities in client characteristics even without problems in sample selection. Witham (1980), for example, reported on the characteristics of clients in a vocational assessment program operated as part of a comprehensive, private rehabilitation facility. VDC clients were significantly older, better educated, had more work experience before assessment, had different disability patterns and were more apt to be employed following their rehabilitation programs.

Demographic and Program Variables

Included in the Study

Herbert and Menz (1981) note that variables most likely to influence the outcomes of vocational assessment are all too often not identified in research. The fifteen demographic and program variables selected for inclusion in the study will be described in this section, together with the rationale for their inclusion.

Client age. Bolton reports that factors such as age, marital status, amount of education, and age at onset of disability are "...the most potent demographic predictors of employment..." (1974 p. 131). Fitzgerald, McGowan, Kutner & Wenger (1982) report that rehabilitation outcomes occurred more frequently for older female and younger male cardiac patients. Emery (1979) suggests that age was a moderator of attitudes toward work and that assessment was less likely to affect these attitudes in older clients than younger clients. She also found that age affected attitude toward job getting ability. In this study, age was treated both as a continuous and categorical variable to provide maximum data treatment options.

Sex. Several studies suggest that disabled men and women differ in various types of self perception. Weinberg (1979) reports that disabled females perceive themselves differently on seven non-vocational dimensions and that these same differences are present in the non-disabled. Bowden et al. (1980) reports higher self esteem among male burn victims and that the differences in self esteem increase over time. Beiseigel (1976) reported that female recipients of workers compensation benefits showed a slight tendency toward more pessimism after vocational assessment at the Vocational Development Center. She speculated that

this resulted from lower levels of education and transferable work experience.

Marital status. Emery's (1979) finding that single and divorced clients were more negative in their attitude toward work would support Bolton's (1974) statement that marital status is important in outcome prediction. The data were organized so clients who were divorced, widowed or who had never married could be distinguished from those who were married at the time of assessment.

Primary disability. The notion that disability affects various aspects of a person is certainly not new. Adler (1917 p. 3), for example stated that "...the possession of definitely inferior organs is reflected upon the psyche - and in such a way to lower self esteem...". Interestingly, most studies use disability as a variable but do not report differences between diagnostic categories as a moderator of self perception or program impact. It may thus be, as Wright (1960, p 55) asserts, that "...disability is an extraordinarily poor criterion for judging which individual is unduly beset by self-abnegation and which individual is not and that the common association between inferiority feelings and atypical physique is a gross oversimplification unwarranted by the facts."

In this study, disability categories used in the

State-Federal Vocational Rehabilitation Program were used, with two changes described elsewhere which were made to assure cell sizes appropriate for statistical analysis.

Number of disabilities. Since the number of different disabilities a person has may be a reflection of the severity of disability and thus their ability to benefit from rehabilitation services, this variable was included, even though no studies were found in which it was reported to be significant. To maintain approximately equal cell sizes, clients with three or more diagnoses were grouped for comparison with those having one and two disabilities.

Severe disability coding. Severity of disability is determined from Federal standards which are based on the belief that certain disabilities or combinations thereof produce a level of severity which necessitates prioritized service when funding or time is insufficient to meet the needs of all clients (Federal Register, 1975, p. 54701).

Although Bolton (1980) concludes that severity of disability is one of several interactive variables useful in predicting outcome, no studies were found which show this to be true. Since, however, staff at the Center identified this coding as a factor in the difficulty in working with clients during assessment, it was included in the study as a categorical variable..

Prior work experience. Researchers such as Bolton (1980) have reported that work experience is one of several variables which appear to predict rehabilitation outcome.

Buell & Anthony (1973) also report this variable as related to outcome with the psychiatrically disabled. Data about the work experience of clients in the sample was available only on a categorical basis, but since it distinguished clients with no prior experience from those with up to a year, one to three years, and over three years, it was included.

Benefits received. Clients in the sample were receiving a variety of benefits when referred for assessment. Emery (1979) did not find this variable to have significant impact on vocational self perception despite noting that it is often cited as a disincentive to rehabilitation. Since Beiseigel (1976) had reported that fewer persons receiving workers compensation became employed after rehabilitation than did the other clients, however, the variable was included. Categories of benefits received were: Social Security Disability; Supplemental Security Income; Veterans Benefits; Workers Compensation; Local, County or State Welfare; None. Although some clients received benefits from more than one category, only the primary source was available and thus included in the study.

Educational level. In addition to Bolton's (1974) report of the significance of this variable in outcome prediction, Emery (1979) found that although clients with less or more than high school educations did not differ significantly in vocational self perception, this changed during subsequent months. By follow-up (8 - 18 months later), clients with less than a high school education were significantly more negative in measures of general life satisfaction. To enhance data treatment options, education was entered so that it could be treated as both a categorical and continuous variable.

Program days. The length of vocational assessment programming has received little consideration in research on program effectiveness although Herbert and Menz (1981) note that it may have substantial influence on therapeutic effects of assessment. Menz (1978) and Hein (1979) suggest that length of assessment may influence the degree of positive change in perception. They did not present data which supports that contention, however. Since the number of days of programming was known for each of the clients, it was included as a continuous variable to determine possible correlation with vocational self perception or rehabilitation outcome.

Referral office. This variable relates to the region of the New Hampshire in which the client lived, since most clients were referred by a counselor in one five regional offices of the Vocational Rehabilitation Division. It was included primarily because of the possible effect of differences in unemployment rates in various parts of the State.

Assigned evaluator. Herbert and Menz (1981) note that staff assigned to work with clients may affect the results of assessment and should therefore be examined. They were, however, unable to locate studies in which this variable was considered. The inference of these remarks is that some characteristics of the staff may impact on client response to the assessment process. Although such a possibility would certainly have relevance in program evaluation, this study lacked the necessary size and sophistication to examine in detail the effect of staff. Since, however, information about which staff were assigned case manager responsibilities for each client, it was included with the expectation that it might be identified as a variable deserving of more detailed treatment in subsequent studies.

Rehabilitation status at referral. Because program evaluation of vocational assessment is so closely linked with

the State-Federal Program of Vocational Rehabilitation, their status system was chosen to record where in the rehabilitation process the client was when referred for assessment. This system divides the rehabilitation process into three broad stages. The first stage begins when a person makes formal application for vocational rehabilitation services and ends when a decision has been made about eligibility under program guidelines. A referral during this stage (statuses 02 or 06) infers that vocational assessment information is needed to help in determining eligibility. In this context, the term eligibility refers to whether the client has vocational characteristics which indicate that s/he would be able to benefit vocationally from the provision of services.

A referral during the second stage of rehabilitation process (status 10) infers that although the eligibility decision has been made, information is needed to help in the development of a vocational goal and plan to achieve it. Referral for assessment during the service stages of the rehabilitation process (statuses 14 through 24) infers a that a problem has arisen which necessitates reconsideration of either the goal or the plan. This variable was included to identify possible effects on vocational self perception and outcome of vocational assessment programming at these various stages.

Status at follow-up. This variable, which uses the same status system described above, is central to correlating rehabilitation outcome with vocational self perception and the other variables in the study. If, at follow-up, the client was still in any of the rehabilitation statuses previously described, it was impossible to address the impact of vocational self perception on outcome. Two types of case closures were therefore the focus of this variable. The first type consisted of clients who completed their planned rehabilitation program and were closed status (26) after being followed a minimum of sixty days in employment judged to be appropriate to their characteristics. The other type of closure status included clients for whom outcome was other than employment (statuses 08, 28 and 30). Clients in this category may have moved out of state before completing their programs, been considered too severely disabled to be eligible, or were simply unsuccessful in finding a job despite the provision of services.

Months between assessment and closure. This continuous variable was included in the study primarily to assess the possible effect of vocational self perception on the length of time required for clients to complete their rehabilitation programs after assessment. Tebb (1982), however, also reported an inverse relationship between rehabilitation program length and successful outcome for a group of

clients receiving workers compensation.

Instrumentation

The New Hampshire Questionnaire was the only instrument used to determine the impact of vocational assessment on vocational self perception. Its further use and standardization was a secondary purpose of the study since Emery's (1979) study indicated that it showed promise as a program evaluation tool. This section will focus on two issues related to the NHQ: initial development and standardization, and the results of additional standardization activities as part of the present study.

Development of the New Hampshire Questionnaire. The NHQ is a 154 item scale which purports to measure attitudes toward work and disability, job expectations, and self perceptions of stamina, tension, depression, self confidence, anger and confusion. Development of the Questionnaire grew out of dissatisfaction with program evaluation approaches previously used at the Vocational Development Center. To outside consultants, these studies lacked adequate design controls and thus could not be considered technically valid (Spaniol, 1976). To staff, the studies appeared to miss an essential program benefit: that assessment helped clients change in ways that were desirable.

NHQ Development. Using group process techniques, Dr. Paul Power, then consulting psychologist at the Vocational Development Center, helped staff to identify the nature and direction of client change which occurred most often. Essentially, staff concluded that positive changes took place in ten areas related to anger, depression, confusion, tension, self confidence, and work and disability attitudes.

Obviously, individual clients rarely appeared to change in all these areas and some did not seem to change in any. However, staff believed that many clients changed in one or more of these areas. There was consensus that these changes should be included as one element of program evaluation since staff viewed this area as being rewarding personally and of potential import to the program. Recognizing the difficulty in measuring actual change, it was decided to address client self perception of such change.

After an unsuccessful search for a measure which would address these variables, Dr. Power and the writer developed sentences representing the ten areas of client change suggested by staff. These were given to three rehabilitation experts for review. Items from the original pool were retained when two of the three experts agreed that they reflected the areas as defined. They were then reviewed by staff who reached consensus on which ones should be field

tested. A small field test (n = <50) was conducted with Center clients, after which more changes in wording and instructions were made to arrive at the form of the Questionnaire used for this study.

Response set was discouraged in three ways. First, both negative (eg. "I have become very quarrelsome") and positive (eg. "I have felt happy") items were used. Second, items from nine of the sub-scales were interspersed and finally, three types of response choices were used (usually/always, often, sometimes, never/rarely; strongly agree, agree, disagree, strongly disagree; extremely important, very important, somewhat important, not important at all). A copy of the NHQ as given to clients is contained in Appendix B, page 163-173. Each item has been marked to show the sub-scales to which it was assigned.

NHQ Sub-scales. As part of her study, Emery conducted a factor analysis of the NHQ responses for the 82 clients in her study over three administrations. On the basis of this analysis, she concluded that the NHQ was "...measuring only three parameters named general life satisfaction (25 items), attitude toward work (9 items), and job getting ability (10 items)." (1979, p. 21).

Review of her data indicates that the usefulness of the original scales was not actually addressed. Rather,

factor analysis was used to identify a maximum of three new parameters. Beyond the theoretical problems associated with factor analysis as described by Kerlinger (1973, p. 688-9), its application in this instance did not determine whether the original scales were fulfilling their purposes. Therefore, rather than adopting the new scales, both sets were used in the study.

To identify which items were actually accounting for change between pre and post-assessment client perceptions, a T-test was conducted on each of the 154 pairs. Items showing the greatest change ($p > .000$) were included in a new sub-scale which has been temporarily named NUSCAL. Significantly, this sub-scale contains items from each of the original ones except Work Attitude.

In the process of analyzing these data, a clerical error in wording which invalidated one item on the original Questionnaire was discovered. This item was removed from the Questionnaire and all data treatment.

Reliability of the NHQ. Emery (1979) used the Hoyt coefficient of reliability (Hoyt, 1969, p 108 - 115), a variation of the Kuder-Richardson formula 20, to address inter-item reliability. She reported coefficients ranging from a low of .84 to a high of .96 for three sub-scales (Work Attitude, General Life Satisfaction, and Attitude Toward Job Getting Ability) on three administrations of the

Questionnaire with her sample.

As part of this study, the reliability of the NHQ as a whole was checked for the pre and post-assessment administrations. Alpha reliability coefficients of .896 and .885 respectfully were obtained. Although these findings do not rule out other sources of error variance, they suggest that the measure is sufficiently stable for use.

Validity of the NHQ. The process used to develop the NHQ suggests that it has both content and construct validity since the items were developed from areas in which subjective observation by practitioners indicate that clients change. In addition, the items were rated by experts in rehabilitation, psychology and test development who agreed that they were consistent with the definitions for each area.

Emery (1979, p. 45 - 47) also reports criterion related validity as a result of comparisons between NHQ scores and independent ratings by staff during follow-up contact with the clients in her study. This follow-up was conducted on a face-to-face basis using specially trained staff who had no previous contact with the clients. The follow-up included a structured interview and a third administration of the NHQ. Based on observations of the client and interview data regarding employment, income, job seeking activities, etc., the staff judged whether changes

in the clients' overall situation since assessment were positive, negative or imperceptible.

Two correlations at or beyond the .05 level of significance were identified between follow-up NHQ scores and staff observations. Scores on the NHQ sub-scales General Life Satisfaction (GLS) and Attitude Toward Job Getting Ability (AJGA) were positively correlated with interviewers' conclusions about the overall situation of clients ($r = .313$, $p = .006$ and $r = .289$, $p = .011$ respectively).

The design of Emery's study did not include a comparison of relationship between NHQ scores immediately after assessment and staff conclusions about clients at follow-up. Since, however, she reported that the level of positive self perception was lower at follow-up than immediately after assessment, such a correlation may have existed. More significantly, however, NHQ scores did correlate significantly with staff conclusions about clients which were based on desirable client behaviors.

Treatment of the Data

The data for this study was gathered by the writer from three sources: Vocational Development Center records, the central records system maintained by the New Hampshire Vocational Rehabilitation Division and the State New Hampshire's archives. Original client responses to the NHQ

before and after assessment had been preserved and were used. Data about client age, sex, marital status, educational level, disability, prior work experience, benefits, assessment length, referral office, assigned evaluator and referral status were obtained from Center records. Central office and New Hampshire archival records were used to determine status at follow-up and closure date.

Data concerning demographic and program variables was 100% complete. Client responses to the 153 NHQ responses was 99% complete. Most of the missing responses came on items in the Work Attitude sub-scale where as many as 15 of the 183 clients failed to respond. This compares with no more than two missing responses per item elsewhere in the Questionnaire. Since this sub-scale was located at the end of a lengthy measure, this quantity of missing data is not surprising. It was also noted, however, that unlike the other scales, all WRKATT items are adjacent, making response set more likely. Especially on the post-assessment Questionnaires, many of the omissions came as a result of simply skipping all items on the last page.

All data were entered in the computer (CDC Cyber 175/77 Network Operating System) at the University of Massachusetts, Amherst, MA. Data entry was by a TRS80, Model III micro-computer using a small utility program to check for errors in data entry. After the data had been transferred to the main computer, twenty cases were selected

at random and checked for data entry accuracy. No errors or omissions were found. The program used in data treatment was the Statistical Package for the Social Sciences (SPSS, Nie et al, 1975). T-test, chi square, analysis of variance, and stepwise multiple regression analysis of variance were the principal statistics used. Data treatment for each hypothesis is summarized in the following section.

Hypothesis I. This hypothesis tests the replicability of Emery's (1979) findings that vocational self perception, as measured by the NHQ (dependent variable) immediately before and after vocational assessment (independent variable), would be significantly different. The research statistic used was T-tests applied to both the Questionnaire as a whole and each of thirteen sub-scales.

Hypothesis II. In this hypothesis, vocational self perception, as measured by the NHQ total scale before and after assessment (dependent variables) was compared with the fifteen demographic and program variables (independent variables) using one way analysis of variance in thirty separate statistics. This hypothesis was also approached by use of stepwise multiple regression analysis to determine the variance in NHQ scores attributable to the combined effect of the demographic and program variables.

Hypothesis III. This hypothesis addresses the possible effect of vocational self perception, as measured by the NHQ total and sub-scales before and after assessment, (independent variables) on rehabilitation outcome for those clients closed at follow-up (dependent variable). A series of fourteen one way analyses of variance were conducted to assess the impact of NHQ total and sub-scales on rehabilitation outcome.

Hypothesis IV. For this hypothesis, closure status at follow-up, the dependent variable, was compared with the fifteen demographic and program variables (independent variables) using two statistical procedures. First, stepwise multiple regression analysis was used to determine the extent to which variance in demographic and program variables impacted on rehabilitation outcome. Then, rehabilitation outcome was correlated with each of the demographic and program variables. Continuous variables (age, education, program days and months between assessment and closure) were correlated using one way analyses of variance, while categorical variables were correlated using chi square statistics.

C H A P T E R I V

RESULTS

Introduction

This chapter presents results of the study on the impact of vocational assessment programming on client vocational self perception and rehabilitation outcome. Demographic and program characteristics will be summarized first. Then, following a restatement of each hypothesis, relevant findings will be presented. Discussion and interpretation of the data will be found in Chapter V.

Demographic Data on Clients in the Sample.

As noted in Chapter III, nine demographic characteristics of the sample (sex, age, marital status, primary disability, number of disabilities, severe disability coding, work experience, benefits, and education) were considered potentially relevant. In this section, data about the distribution of these characteristics will be presented and treated as categorical variables. In addition, age and education will also be presented as continuous variables to provide a more complete picture of the

clients included in the study.

Sex. The distribution of clients in the total sample was 129 males and 54 females, a ratio of nearly two and one half to one. Table 1 also includes data which compares this ratio with that of the total client population served at the Center during the period in which the study was conducted. The similarity between the ratios is striking.

Table 1
Distribution of Clients by Sex
(N=183)

Sex	Clients Included in Study.		Total VDC Population During Study.	
	number	percentage	number	percentage
Males	129	70.5	535	69.8
Females	54	29.5	231	30.2

Age. As indicated in Table 2, the average client included in the study was between 33 and 34 years of age, with the youngest being 16 and the oldest 59 years of age. Although slightly skewed toward younger clients, the data in Table 3

on page 82, demonstrates that the spread of ages in fiveyear increments approximates a normal distribution.

Table 2
Age Characteristics of the Sample
(N=183)

Mean Age	33.361	Minimum	16	.95 C.I.	31.75/34.97
Variance	121.935	Maximum	59	Kurtosis	-0.730
Std. Dev.	11.042	Std.Err.	0.816	Skewness	0.290

Marital status. The data in Table 4, found on page 83, suggests that somewhat more than half of the clients in the sample were unmarried at the time of their vocational assessment. It will be noted, however, that just over 75% of the clients in the sample were either married at the time of the assessment or had been at some previous time.

Primary disability. All clients served at the Vocational Development Center had at least one previously diagnosed physical or mental disability. To the extent possible, the disability categories used by the referring agency were retained. To maintain categories of roughly comparable size, however, two changes were necessary. First, a new

category was established for clients having back disabilities since nearly half of all clients with orthopedic diagnoses had this impairment.

Table 3
Age Distribution of the Sample
(N=183)

	35								
					32				
	30				XX				
			27		XX	27			
	25		XX		XX	XX			
Number	22	XX	22	XX	XX				
of	20	XX	XX	XX	XX	XX	21		
Clients		XX	XX	XX	XX	XX	XX	17	
	15	XX	XX	XX	XX	XX	XX	XX	15
		XX	XX	XX	XX	XX	XX	XX	XX
	10	XX	XX	XX	XX	XX	XX	XX	XX
		XX	XX	XX	XX	XX	XX	XX	XX
	0	XX	XX	XX	XX	XX	XX	XX	XX

	-20	20-24	25-29	30-34	35-39	40-44	45-49	50+
	Age Ranges							

Table 4
 Sample Distribution by Marital Status
 (N=183)

Status	clients	percentage
Married	87	47.5
Widow/Widower	3	1.6
Divorced	23	12.7
Never Married	70	38.2

The second change involved combining visual and hearing disabilities into a single category. The new category was labeled "Primarily Visual" since deafness was the primary disability for only one client in the sample.

It should also be noted that the category labeled "Mental Disabilities" usually includes both psychiatric and mental retardation diagnoses. Although not screened out of this study on the basis of diagnosis, most mentally retarded clients were judged by assessment staff to be unable to participate in the study because of the reading level required by the New Hampshire Questionnaire.

The data in Table 5 support a conclusion that the clients in this study had primary disabilities which were primarily physical in nature with only 18% having condi-

tions generally considered psychiatric.

Table 5
Sample Distribution by Primary Disability
(N=183)

Category	clients	percentage
Primarily Visual	16	8.7
Back Disabilities	48	26.2
Other Orthopedic	55	30.0
Mental Disabilities	34	18.6
Internal Organ	30	16.5

Number and severity of disabilities. As noted in Table 6, nearly 40% of the clients in the sample had more than one diagnosed disability. Data in this table also indicate that just over half of the sample had been coded severely disabled by the referring agency. This code is assigned to clients who have either a diagnosis identified in Federal Regulations as requiring special and extensive services, or who because of multiple disabilities, are expected to need such services.

Table 6
 Number and Severity of Disabilities
 (N=183)

Disabilities	clients	percentage
One	112	61.2
Two	55	30.0
Three or more	16	8.8
Coded Severely Disabled	95	51.9
Not Coded Severely Disabled	88	48.1

Prior work experience. Nine out of ten persons in the study had at least one month of paid work experience before assessment and nearly 80% had worked more than one year. These data are summarized in Table 7 on page 86.

Benefits. As the data in Table 8 indicate, nearly two-thirds of the total sample were recipients of some type of monetary benefit program at the time of their vocational assessment program. Of those clients receiving benefits, the largest number (69) were receiving workers compensation while only four clients were receiving veterans benefits.

Table 7
 Client Work Experience Before Vocational Assessment
 (N=183)

Experience	clients	percentage
None	18	9.8
One to Twelve Months	19	10.4
Thirteen to Thirty-five	13	7.1
Thirty-six Months and Over	133	72.7

Table 8
 Distribution of Clients by Benefit Status
 (N=183)

Benefit type	clients	percentage
None	62	33.9
Social Security Disability	19	10.4
Supplemental Security	13	7.1
Local, County, State Welfare	16	8.7
Veterans Disability Benefits	4	2.2
Workers Compensation	69	37.7

Education. Data describing the number of years of education reported by clients at the beginning of their vocational assessment is presented both as a categorical (Table 9) and continuous (Table 10) variable. Review of these data indicate that just over half of the clients completed twelfth grade and an additional 17.5% had attended school beyond the secondary level. The remaining 58 clients had less than twelve years of education with 24 (13.1%) having eight years or less. When education is treated as a continuous variable, the mean number of years falls just short of twelve with a range from six to sixteen years.

Table 9
Years of Education by Category
(N=183)

Years Completed	clients	percentage
Eight years or less	24	13.1
Nine through eleven years	34	18.6
Twelve years	93	50.8
Thirteen years or more	32	17.5

Table 10
Educational Characteristics of the Sample
(N=183)

Mean	11.383	Minimum	6	.95 C.I.	11.101/11.664
Variance	3.732	Maximum	16	Kurtosis	0.436
Std. Dev.	1.932	Std. Err.	0.143	Skewness	-0.596

Summary of Demographic Data

The preceding summary of demographic characteristics of the clients included in the study suggest that they had a range of assets and limitations of significance to vocational planning. It is, however, possible to describe what might have been a typical client in the study - a mythical person with all the characteristics of the majority. Such a person would be male, married and in his early 30's. He would have finished high school before entering the labor market where he worked for over three years. He then sustained an on-the-job injury, probably to his back. At the time he entered the vocational assessment program, he was receiving weekly workers compensation payments.

Program Data Relevant to the Study

Besides gathering data about demographic characteristics of the sample population, six variables which either directly describe the vocational assessment program itself or those which are of greater interest in program evaluation than client assessment, were included. These variables (length of each vocational assessment program, referral office, VDC case manager, case status of the clients at admission, case status at follow-up, and months between assessment and closure) are discussed in the following sub-sections. All are presented as categorical variables while in addition, two are also summarized as continuous variables.

Length of vocational assessment. No arbitrary program length was established. Instead, clients and staff developed an assessment plan which specified the information to be obtained and the activities most likely to obtain it; thus, the assessment process itself determined program length. The data in Table 11 indicates that the mean program length was 6.7 days. The shortest assessment program was one day while the longest was sixteen days. It will be noted, however, that the 95% confidence intervals encompass

less than one full programming day. As the data in Table 12, found on page 91 suggests, nearly half of the programs were either six or seven days long.

Table 11
 Characteristics of Program Length
 (N=183)

Mean # Days	6.716	Minimum: 1	.95 C.I.	6.35/7.08
Variance:	6.205	Maximum: 16	Kurtosis	1.981
Std. Dev.:	2.491	Std. Err.: .184	Skewness	.980

Referral office. All clients in the study were referred by one of six units within the New Hampshire Vocational Rehabilitation Division. Five of these units were the Regional Offices of the Division, while the sixth was a special unit serving legally blind clients on a Statewide basis.

As the data in Table 13 on page 93 indicate, half of the sample was referred from the Manchester Regional Office while only three clients were referred from the Berlin area. This disparity is probably due to a variety of factors, the most obvious of which include distance and

Table 12
 Distribution of Clients by Program Length
 (N=183)

	40						40		
							37	XX	
	35						XX	XX	
							XX	XX	
	30						XX	XX	
							XX	XX	
	25						XX	XX	
		22	XX	XX	XX	XX	22		
Number	20	20	XX	XX	XX	XX	XX		
of		XX	XX	XX	XX	XX	XX		
Clients	15	XX	XX	XX	XX	XX	XX	15 15	
	12	XX	XX	XX	XX	XX	XX	XX	
	10	XX	XX	XX	XX	XX	XX	XX	
		XX	XX	XX	XX	XX	XX	XX	
	5	XX	XX	XX	XX	XX	XX	XX	
		XX	XX	XX	XX	XX	XX	XX	
	0	XX	XX	XX	XX	XX	XX	XX	

	1-3	4	5	6	7	8	9-10	11+
--	-----	---	---	---	---	---	------	-----

Program Length in Days

assessment resources. The Manchester Regional Office and the Vocational Development Center were co-located in the same building, while clients from the Berlin area had local access to a satellite of the Center and had to be provided with housing if they traveled to Manchester. The other three regional offices referred approximately equal numbers of clients who, in most instances could commute daily to the program.

Assigned Evaluator. During the period of the study, the Vocational Development Center had positions for three vocational evaluators and one supervisor. Each evaluator was assigned case management responsibilities for clients, the size of the caseload being dependent on factors such as the number of clients in program, experience and annual service quotas. The supervisor assumed case management responsibilities as needed. A total of five staff members worked with the 183 clients included in the study. Three of the four evaluators served similar percentages of the total sample, while an evaluator hired near the end of the study managed somewhat fewer evaluations. The supervisor worked with only three of the clients in the study. The data concerning assigned evaluators is included in Table 14 on page 93.

Table 13
 Referral Sources for Clients in the Study
 (N=183)

Source	clients	percentage
Manchester	92	50.3
Keene	22	12.0
Portsmouth	28	15.3
Concord	28	15.3
Berlin	3	1.6
Blind Services	10	5.5

Table 14
 Distribution of Clients by Case Manager
 (N=183)

Case Manager	clients	percentage
AA	44	24.0
BB	53	29.1
CC	61	33.3
DD	22	12.0
EE	3	1.6

Status at referral. All clients in the sample had made formal application for vocational rehabilitation services and were in referral status awaiting a decision on eligibility (status 02 or 06), in accepted status (status 10), or in service status (statuses 12 through 24) at the time of their vocational assessment. As the data in Table 15 shows, 85% of the clients participated in assessment while in eligibility and planning statuses.

Table 15

Distribution of clients by Status at Referral
(N=183)

Status categories	clients	percentage
02 or 06	93	50.8
10	64	35.0
12 through 24	26	14.2

Case status at follow-up. This category of program information indicates the vocational rehabilitation status of the 183 clients when follow-up was completed in June, 1982. As noted in Table 16, twenty-seven of the clients were still in active service status with the referring

agency. The remaining 85% of the clients had been closed from active service status. Sixty percent of the total sample had been closed in employment (status 26) while 25% had been closed not working. Of those clients closed, 70.5% were in working status while 29.5% were closed not working.

Table 16
Distribution of Clients by Status at Follow-up
(N=183)

Status at Follow-up	Clients	Percentage
Still in Active Status	27	14.8
Closed, Not Working	46	25.1
Closed, In Employment	110	60.1

Months between assessment and closure. The cases of 156 clients had been closed by the Vocational Rehabilitation Division between assessment and June, 1982 when the follow-up for this study was concluded. As the data in Table 17 indicate, just over 60% (N=94) had been closed in two years or less. The mean number of months required was 19 with the minimum and maximum program lengths of one

and sixty-three months respectively.

Table 17
Distribution of Sample by
Months between Assessment and Closure
(n=156)

Months	clients	percentage
Less than 6	8	5.1
7 through 12	29	18.6
13 through 18	29	18.6
19 through 24	28	18.0
25 through 30	22	14.1
31 through 36	13	8.3
37 through 42	13	8.3
43 and over	14	9.0

Summary of Program Data

Data contained in the preceding section describe several characteristics of the vocational Development Center program as it was in operation during the period covered by this study. The typical assessment program was six or

seven days in length and rendered for clients whose eligibility for rehabilitation services had yet to be determined.

Nearly two thirds of the clients completed their vocational rehabilitation programs within two and one half years after the assessment. Of those clients whose cases had been closed by June, 1982, over 70% had been closed in employed status.

The next section contains data relevant to each of the hypotheses in the study. The format for each section will be to re-state the hypothesis and relevant sub-hypotheses, and then present the findings in narrative and tabular form. Discussion and implications of the findings will be found in Chapter V.

Hypothesis # 1 Results

Hypothesis One. Client vocational perception, as measured by the New Hampshire Questionnaire (Power and Robinson, 1977) immediately preceding and following vocational assessment programming, will not vary significantly.

Sub-Hypothesis 1A. The mean, total NHQ score for the sample immediately following vocational assessment will not differ significantly from the mean, total NHQ score immediately preceding vocational assessment.

Table 18 contains data about the results of T-tests of differences between the means of NHQ scores obtained by

clients immediately preceding (XTOT) and following (YTOT) vocational assessment. The difference between means is too great to be explained by chance factors ($p < .001$), thus making it impossible to accept the sub-hypothesis.

Table 18

Pre and Post-Assessment Differences in Full Scale Means on the New Hampshire Questionnaire (N=183)

Before Assessment			After Assessment			t	2-tail	
Mean	SD	SE	Mean	SD	SE	value	df	prob.
441.20	59.06	4.37	466.31	64.67	4.78	7.92	182	.000***

*** = $P > .001$

Sub-hypothesis 1B. Mean scores for the original sub-scales of the NHQ including Stamina (STAMNA), Tension (TENSN), Depression (DEPRES), Self Confidence (SLFCON), confusion (CONFNSN), Disability Attitude (DISATT), Job Expection (JOBEXP), Positive Attitude (POSATT), Anger (ANGER), and Work Attitude (WRKATT) immediately before and after vocational assessment will not differ significantly.

Table 19 on page 100 presents the results of T-tests for all original sub-scales and the total Questionnaire.

Since the length of the scales varies considerably, results are presented as item means to facilitate comparisons. The differences between the pre-assessment and post-assessment means for all sub-scales except Work Attitude are too disparate to be accounted for by chance factors ($P > .01$).

Sub-hypothesis 1C. Mean scores for the sub-scales suggested by Emery (1979) including General Life Satisfaction (GLS) and Attitude Toward Job Getting Ability (AJGA) before and after vocational assessment will not differ significantly.

Results of T-tests on the two new sub-scales suggested by the Emery's factor analysis work are presented in Table 20 on page 101. The data suggest that the differences between item means before and after assessment on both sub-scales are too great to be accounted for by chance factors, and thus do not support the hypothesis as stated.

Table 19
 Pre and Post-Assessment Differences between Means
 of Original New Hampshire Questionnaire Sub-scales
 (N=183)

NHQ Scale	Before Assess.			After Assess.			t value	df	2-tail Prob.
	Item Mean	SD	SE	Item Mean	SD	SE			
STAMNA	2.78	.51	.04	2.94	.56	.04	5.21	182	.000***
TENSN	2.93	.63	.05	3.10	.64	.05	5.27	182	.000***
DEPRES	2.98	.52	.04	3.07	.57	.04	3.00	182	.003**
SLFCON	2.81	.42	.03	3.00	.46	.03	6.80	182	.000***
CONFSN	2.59	.48	.04	2.87	.56	.04	8.43	182	.000***
DISATT	2.74	.33	.02	2.99	.39	.03	6.83	182	.000***
JOBEXP	2.89	.48	.04	3.06	.49	.04	5.70	182	.000***
POSATT	2.80	.49	.04	2.98	.55	.04	5.42	182	.000***
ANGER	3.07	.53	.04	3.29	.53	.04	7.02	182	.000***
WRKATT	3.29	.85	.06	3.36	.64	.05	1.02	182	.307

** = P > .01 *** = P > .001

Table 20
 Pre and Post-Assessment Differences between Means
 of New Hampshire Questionnaire Sub-scales
 Identified by Emery (1979)
 (N=183)

NHQ Scale	Before Assess.			After Assess.			t value	df	2-tail Prob.
	Item Mean	SD	SE	Item Mean	SD	SE			
GLS	2.94	.57	.04	3.41	.59	.04	17.52	182	.000***
AJGA	2.51	.48	.04	2.74	.56	.04	6.67	182	.000***

*** = P > .001

Sub-hypothesis 1D. Mean scores for new sub-scales identified by item analysis of NHQ scores for the entire sample immediately before and after vocational assessment will not vary significantly.

As noted in Chapter III, item analysis of the total New Hampshire Questionnaire identified 47 of the 154 items for which pre and post-assessment means differed at or beyond the .000 level of significance. Since the items were found to sample all existing sub-scales, a new sub-scale, temporarily named New Scale (NUSCAL), was developed. Because of the way in which the items were identified, it is

not surprising that the data in Table 21 indicate pre and post-assessment differences in means significant at the $P > .000$ level.

Table 21
Pre and Post-Assessment Differences Between Means
of New Hampshire Questionnaire Sub-scales
Identified by Item Analysis
(N=183)

NHQ Scale	Before Assess.			After Assess.			t Value	df	2-tail Prob.
	Item Mean	SD	SE	Item Mean	SD	SE			
NUSCAL	2.66	.45	.03	2.97	.50	.04	11.86	182	.000***

*** = $P > .001$

Hypothesis #2 Results

Hypothesis Two. There will be no significant differences in vocational self perception, as measured by the New Hampshire Questionnaire immediately preceding and following vocational assessment on the demographic and program variables included in the study.

To test this hypothesis, stepwise multiple regression analysis was first used to determine the extent to which the fifteen demographic and program variables contributed to the variance in pre and post-assessment means on the NHQ Total Scales. The data in Table 22, found on page 104, indicate that prior to assessment, 17.3% of the total variance in NHQ means was explained by the combined effect of the fifteen variables. The three sub-scales which had significant impact on the variance of NHQ scores, i.e. Education ($P > .001$), Assigned Evaluator ($P > .01$), and Severe Disability coding ($P > .05$), accounted for just under 10% of the total variance in NHQ scores.

A similar multiple regression analysis for post-assessment NHQ scales on the demographic and program variables was also conducted. As indicated by the data in Table 23, page 105, after vocational assessment, just under 15% of the total variance in NHQ scores could be explained by the combined effect of the fifteen variables. Three of the variables, Education ($P > .002$), Primary Disability ($P > .012$), and Assigned Evaluator ($P > .025$), accounted for nearly 11% of the total variance and were thus the most important of the variables in the equation.

Table 22
 Stepwise Multiple Regression Analysis for Pre-Assessment
 New Hampshire Questionnaire Total Scales for all
 Demographic and Program Variables
 (N=183)

Demographic/Program Variable	F to Enter	Signif.	R Sq. Change	R Square
Education	8.773	.003***	.046	.046
Assigned Evaluator	6.096	.014*	.031	.077
Severe Disability	3.904	.050*	.020	.097
Primary Disability	3.231	.074	.016	.113
Work Experience	2.914	.090	.015	.128
Age	2.087	.150	.010	.138
Marital Status	2.549	.112	.012	.150
Follow-up Status	1.932	.166	.009	.159
Assess. - Clos. Time	1.607	.207	.008	.167
Benefits	0.584	.466	.003	.170
Referral Office	0.478	.490	.002	.172
Number of Disab.	0.195	.659	.001	.173

* = P>.05 *** = P>.001

Table 23

Stepwise Multiple Regression Analysis for Post-Assessment
 New Hampshire Questionnaire Total Scales for all
 Demographic and Program Variables
 (N=183)

Demographic/Program Variable	F to Enter	Signif.	R Sq. Change	R Square
Education	9.53	.002**	.050	.050
Primary Disability	6.49	.012*	.033	.083
Evaluator	5.08	.025*	.025	.108
Severe Disability	2.32	.129	.011	.119
Age	1.55	.214	.007	.126
Referral Office	1.16	.283	.007	.133
Work Experience	1.55	.215	.008	.141
Referral Status	0.48	.489	.002	.143
Follow-up Status	0.41	.522	.002	.145
Marital Status	0.25	.620	.001	.146
Benefits	0.21	.644	.001	.147
Program Days	0.12	.725	.001	.148
Number of Disab.	0.09	.759	.000	.148
Sex	0.01	.913	.000	.148
Assess. - Clos. time	0.01	.918	.000	.148

* = P>.05 ** = P>.01

Comparison of the data in Tables 22 and 23 suggests that the intervention of vocational assessment reduced the impact of the demographic and program variables on client vocational self perception. Also, it will be noted that during the assessment program, the variable severity of disability became less powerful in its effect on NHQ scores while the variable primary disability became significant.

Separate analysis of variance statistics were computed for each of the fifteen demographic and program variables in relation to NHQ scores immediately before and after vocational assessment. The null hypotheses were supported in twenty of thirty possible instances, indicating that client age, sex, marital status, number of disabilities, work experience, program length, rehabilitation status immediately before assessment, status at follow-up, and months between assessment and closure did not correlate significantly with NHQ scores immediately before or after vocational assessment.

For the variables of primary disability, severe disability coding, benefits, education, referral office, and assigned evaluator, however, significant correlation with NHQ scores was found on at least occasion. Summary tables of the findings regarding these seven variables are included together with their relevant sub-hypotheses.

Sub-hypothesis 2D. Client primary disability, a categorical variable including 1) Primarily Visual, 2) Bad Back, 3) Other Orthopedic, 4) Mental and 5) Internal Organ will not correlate significantly with total scores on the NHQ before or after vocational assessment.

As the data in Table 24 on page 108 suggest, clients with mental (primarily psychiatric) diagnoses had significantly lower NHQ scores both before and after assessment than did clients with physical disabilities. It will be recalled from data in Tables 22 and 23, however, that the contribution of this variable to the total variance in NHQ scores was not statistically significant before assessment but was immediately following the program. Thus, while clients in all primary disability groups made gains in vocational self perception during assessment, this variable became more significant in explaining total NHQ variance.

Sub-hypothesis 2F. Severe Disability coding, a categorical variable including 1) Yes and 2) No, will not correlate significantly with total scores on the NHQ immediately before or after vocational assessment.

Clients who had been coded severely disabled before referral for assessment scored significantly lower on the NHQ before the intervention. After assessment, however, although those coded as severely disabled continued to average lower NHQ scores than their non-severely disabled counterparts, the differences were no longer statistically

Table 24
 Analysis of Variance Results for New Hampshire
 Questionnaire Total Scales on the Variable
 Primary Disability
 (N=183)

Disability Category	N	Pre-Assessment		Post-Assessment	
		Mean	SD	Mean	SD
Prim. Visual	16	433.44	44.54	472.44	67.74
Bad Back	48	455.61	59.04	483.00	65.94
Other Orthoped.	55	451.79	55.16	472.04	62.00
Mental	34	415.72	61.30	440.12	55.38
Internal Organ	30	431.79	61.92	455.50	68.61
Total	183	441.21	59.06	466.31	64.66
F-ratio			3.14		2.64
Significance			.02*		.04*

* = P > .05

significant. This would suggest that something occurred in the interim which affected their vocational self perception. These data are presented in Table 25.

Table 25
 Analysis of Variance Results for New Hampshire
 Questionnaire Total Scales on the Variable
 Severe Disability Coding.

(N=183)

Severely Disabled	N	Pre-Assessment		Post-Assessment	
		Mean	SD	Mean	SD
Yes	95	432.42	61.26	458.13	70.65
No	88	450.69	55.38	475.15	56.60
Total	183	441.59	61.26	466.31	64.67
F-ratio			4.46		3.20
Significance			.04*		.07

* = $P > .05$

Sub-hypothesis 2H. Benefits being received at assessment, a categorical variable including 1) Social Security Disability Insurance (SSDI), 2) Supplemental Security Income (SSI), 3) Local, County or State welfare (LCS), 4) Veterans Benefits (VETS), 5) Worker Compensation Payments (WC), or 6) None, will not correlate significantly with total scores on the NHQ immediately before or after vocational assessment.

Persons receiving local, county or state welfare payments had the lowest mean scores on the NHQ while clients receiving veterans benefits or workers compensation pay-

ments have the highest mean scores. Sufficient differences exist between these means to be statistically significant both before and after assessment. As the data in Table 26 found on page 110 indicate, although the intervention of vocational assessment had the general effect of increasing the average scores, the relative differences remain approximately the same. As previously noted, however, this benefit did not contribute significantly to the total variance in NHQ scores.

Sub-hypothesis 2I. Educational level immediately prior to assessment, a categorical variable including 1) eight years or less, 2) nine through eleven years, 3) twelve years, and 4) thirteen years or more, will not correlate significantly with pre or post-assessment NHQ scores.

In general, clients with more education had higher mean scores on the NHQ both before and after assessment. As indicated by the data in Table 27 on page 111, clients with twelve or more years of education, tended to have much higher NHQ scores than did persons with eleven years or less of education.

Table 26
 Analysis of Variance Results for New Hampshire
 Questionnaire Total Scales on the variable
 Benefits
 (N=183)

Benefit Category	N	Pre-Assessment		Post-Assessment	
		Mean	SD	Mean	SD
SSDI	19	427.52	55.05	462.44	72.04
SSI	13	428.93	65.08	452.83	77.60
LCS	16	415.35	58.12	438.93	57.66
VETS	4	459.79	38.55	487.57	37.11
WC	69	466.40	54.56	487.57	59.73
NONE	62	427.64	58.09	452.33	62.60
Total	183	441.21	59.06	466.31	64.67
F-ratio			4.11		3.01
Significance			.001**		.012*

* = P> .05 ** = P>.01

Table 27
 Analysis of Variance Results for New Hampshire
 Questionnaire Total Scales on the Variable
 Education
 (N=183)

Years of Education	N	Pre-Assessment		Post-Assessment	
		Mean	SD	Mean	SD
Eight or less	24	420.23	51.33	443.00	59.26
Nine - Eleven	34	420.27	53.22	442.44	63.87
Twelve	93	450.32	57.65	476.26	63.39
Thirteen & more	32	452.71	66.65	480.23	64.30
Total	183	441.21	59.06	466.31	59.26
F-ratio			3.74		4.00
Significance			.012*		.008**

* = P>.05 ** = P>.01

Sub-hypothesis 2K. Source of referral, a categorical variable including 1) Manchester Regional Office, 2) Keene Regional Office, 3) Concord Regional Office, 4) Portsmouth Regional Office, 5) Berlin Regional Office, and 6) Blind Services Unit, will not correlate significantly with total scores on the NHQ immediately before or after vocational assessment.

Clients referred from the Portsmouth Regional Office had significantly higher mean scores on the NHQ than did

clients from the Berlin Regional Office. As noted in the data provided in Table 28 on page 114, however, the cell sizes vary considerably, with a range of from 3 to 92 clients having been referred by the various offices. Since this variable did not contribute significantly to the total variance in NHQ scores, however, these data should thus be interpreted with considerable caution.

Sub-hypothesis 2L. Assigned Evaluator, a categorical variable including 1) Evaluator AA, 2) Evaluator BB, 3) Evaluator CC, 4) Evaluator DD, and 5) Evaluator EE, will not correlate significantly with total scores on the NHQ immediately before or after assessment.

It will be recalled that data presented in Tables 22 and 23 suggest that nearly eight percent of the total variance in NHQ scores was accounted for by this variable both before and after assessment. Data in Table 29, however, indicates that the NHQ scores of clients groups by assigned evaluator did not vary significantly before assessment although they did after assessment. Closer examination of Table 29 on page 115 indicates that clients assigned to Evaluator EE scored significantly higher than clients assigned other evaluators but that EE served only three clients. It is thus suggested that the significance of thi variable was distorted by the unequal cell sizes within the categories and that the assignment of evaluators did not contribute

significantly to overall variance in NHQ scores.

Table 28
 Analysis of Variance Results for New Hampshire
 Questionnaire Total Scales on the Variable
 Source of Referral
 (N=183)

Referral Unit	N	Pre-Assessment		Post-Assessment	
		Mean	SD	Mean	SD
Manchester	92	439.51	58.94	458.90	63.60
Keene	22	452.96	63.85	485.76	61.62
Concord	28	415.58	57.41	455.07	67.69
Portsmouth	28	469.00	49.47	488.62	64.88
Berlin	3	386.16	61.96	409.03	53.12
Blind Services	10	441.30	44.61	477.90	56.04
Total	183	441.21	59.06	466.31	64.67
F-ratio			3.19		2.07
Significance			.007**		.70

** = $P > .01$

Table 29
 Analysis of Variance Results for New Hampshire
 Questionnaire Total Scales on the Variable
 Assigned Evaluator
 (N=183)

Category	N	Pre-Assessment		Post-Assessment	
		Mean	SD	Mean	SD
AA	44	450.49	55.59	478.66	64.67
BB	53	451.38	60.32	475.28	59.97
CC	61	435.52	60.74	460.05	73.88
DD	22	413.28	54.44	431.41	60.47
EE	3	445.85	18.27	510.05	36.53
Total	183	441.21	59.88	466.31	64.67
F-ratio			2.08		2.85
Significance			.084		.025*

* = P > .05

Hypothesis # 3 Results

Hypothesis Three. Vocational self perception, as measured by the New Hampshire Questionnaire will not be significantly different for clients closed in employed and not employed statuses.

Sub-hypothesis 3A. Mean total scores on the NHQ immediately before (XTOT) and after (YTOT) assessment will not be significantly different for clients subsequently closed in employment (Status 26) than for clients subsequently closed not employed (Statuses 08, 28 and 30).

The data in Table 30 on page 117 indicates that clients for whom employment was the outcome of rehabilitation had somewhat higher scores on the NHQ both before and after assessment than did their counterparts who were subsequently closed without having become employed. In neither instance, however, were the differences between group means statistically significant, although before assessment, significance was approached ($P > .062$). These data are thus supportive of the sub-hypothesis as stated in null form.

Sub-hypothesis 3B. Item means on the original sub-scales of the NHQ for clients subsequently closed in employment (Status 26) and for clients subsequently closed not employed (Status 08, 28 and 30) will not vary significantly.

Data in Table 31 on pages 118-9 suggest that item means for most sub-scales of the NHQ were not significantly different for those clients closed in employment than for those closed not employed. Significantly, however, three sub-scales did differentiate between the two service outcomes.

Table 30
 Analysis of Variance Results for New Hampshire
 Questionnaire Sub-scales on the Variable
 Follow-up Status
 (n=156)

NHQ Scale	Closed			Employed			Closed Not Employed			F Ratio P
	Mean	SD	SE	Mean	SD	SE	Mean	SD	SE	
XTOT	447.80	55.33	5.27	423.14	59.50	8.77	3.52	.062		
YTOT	471.08	62.91	5.99	458.15	63.21	9.35	1.36	.245		

Before vocational assessment, the mean responses by clients subsequently closed in employment on both the Stamina ($P < .004$) and Job Expectation ($P < .017$) sub-scales were significantly higher than those recorded by clients for whom the outcome of vocational rehabilitation was not employment. Post-assessment mean scores on the sub-scale Job Expectation were also significantly higher for clients eventually were closed in employed status than for those closed not employed ($P < .000$). These data suggest that at least two aspects of vocational self perception measured by the New Hampshire Questionnaire did discriminate between those clients for whom the outcome of rehabilitation would

be positive and those who would ultimately be closed in unemployed statuses.

Table 31
 Analysis of Variance Results for New Hampshire
 Questionnaire Sub-scales on the Variable
 Follow-up Status
 (n=156)

NHQ Scale	Status at Follow-up						F Ratio	F Prob.
	Employed			Not Employed				
	Mean	SD	SE	Mean	SD	SE		
XSTAMNA	2.72	.46	.04	2.49	.47	.07	6.35	.004**
YSTAMNA	2.98	.52	.05	2.82	.65	.09	2.72	.101
XTENSN	3.01	.57	.05	2.80	.73	.11	3.56	.062
YTENSN	3.13	.57	.05	3.03	.74	.11	0.89	.347
XDEPRES	3.03	.48	.08	2.89	.54	.08	2.40	.123
YDEPRES	3.11	.52	.05	3.01	.68	.10	1.06	.304
XSLFCON	2.85	.42	.04	2.74	.40	.06	2.33	.129
YSLFCON	3.04	.45	.04	2.94	.46	.07	1.91	.169
XCONFSN	2.61	.47	.04	2.57	.49	.07	0.22	.637
YCONFSN	2.88	.55	.05	2.85	.55	.08	0.12	.735
XDISATT	2.75	.33	.03	2.69	.31	.05	1.04	.311
YDISATT	2.93	.41	.04	2.88	.36	.05	0.52	.468

Table 31 (continued)

Scale	Status at Follow-up						f	f		
	Employed			Not Employed						
	Item	Mean	SD	SE	Item	Mean			SD	Se
XJOBEXP	2.97	.46	.04		2.77	.47	.07		5.83	.017*
YJOBEXP	3.16	.45	.04		2.84	.50	.07		15.46	.000***
XPOSATT	2.85	.48	.05		2.74	.46	.07		1.89	.171
YPOSATT	3.00	.56	.05		2.94	.53	.08		0.44	.509
XANGER	3.10	.50	.05		3.00	.60	.09		0.95	.330
YANGER	3.33	.48	.05		3.25	.66	.10		0.63	.430
XWRKATT	3.24	.88	.08		3.44	.65	.10		-1.80	.181
YWRKATT	3.38	.60	.06		3.89	.65	.10		-0.01	.943

* = P>.05 *** = P>.001

Sub-hypothesis 3C. Item means on the sub-scales of the NHO suggested by Emery (1979) for clients subsequently closed in employment (Status 26) and for clients subsequently closed not employed (Status 08, 28 or 30) will not vary significantly.

The data in Table 32 offer support for the sub-hypothesis as stated since clients in the two follow-up groups did not vary significantly on either of the new scales sug-

gested by Emery.

Table 32
 Analysis of Variance Results for New Hampshire
 Questionnaire Sub-scales on the Variable
 Follow-up Status
 (n=156)

NHQ Scale	Status at Follow-up						F Ratio	F Prob.
	Employed			Not Employed				
	Mean	SD	SE	Mean	SD	SE		
XGLS	2.98	.53	.05	2.88	.62	.09	1.05	.308
YGLS	3.44	.59	.06	3.38	.59	.09	0.29	.594
XAJGA	2.54	.43	.04	2.44	.52	.07	1.55	.216
YAJGA	2.80	.52	.05	2.66	.59	.09	2.28	.133

Sub-hypothesis 3D. Item means on sub-scales identified by item analysis for clients subsequently closed in employment (Status 26) and for clients subsequently closed not employed (Statuses 08, 28 and 30) will not vary significantly.

The new scale developed from selected NHQ items did not significantly differentiate between clients in the two closure sub-groups as indicated by the data in Table 33.

Table 33
 Analysis of Variance on New Hampshire
 Questionnaire Sub-scales on the Variable
 Follow-up Status
 (n=156)

NHQ Scale	Status at Follow-up						F Ratio	F Prob.
	Employed			Not Employed				
	Mean	SD	SE	Mean	SD	SE		
XNUSCAL	2.69	.43	.04	2.57	.44	.07	2.37	.126
YNUSCAL	3.01	.49	.05	2.09	.50	.07	1.53	.218

Hypothesis #4 Results

Hypothesis Four. The dependent variable of vocational rehabilitation status at follow-up will not correlate significantly with any of the independent demographic and program variables included in the study.

Initial testing of this hypothesis was conducted by stepwise multiple regression analysis to determine the extent to which the fifteen demographic and program variables contributed to the variance between clients in closed statuses at follow-up. The data in Table 34, page 123, suggest that only two variables included in the study, the

length of time between assessment and closure and benefits received at assessment, had significant impact on the employment outcome of the rehabilitation programs which followed vocational assessment. In combination, the variables accounted for 12/6% of the total variance in employment outcome, over half of which (9.1%) was accounted for by time between assessment and closure and benefits.

Separate statistics were computed for each of fourteen demographic and program variables to determine whether by themselves they impacted on type of closure. Analysis of variance was used for the continuous variables, while crosstabulations were conducted for the categorical variables. In eleven of fourteen instances, the results were statistically non significant. It thus appears that the variables of sex, marital status, primary disability, number of disabilities, severe disability coding, work experience, education, program days, referral office or assigned evaluator had little measurable effect on rehabilitation outcome. Conversely, age, benefits and months between assessment and closure were all found to have significant impact on the type of closure from rehabilitation. The results of these data are thus reported herein.

Table 34
 Multiple Regression Analysis of the
 Influence of Demographic and Program Variables
 on Follow-up Status
 (n=146)

Variable	F to Enter	Signif.	R Sq. Change	R Square
Assess. - Clos. Time	8.494	.004**	.052	.052
Benefits	6.547	.011*	.039	.091
Sex	1.902	.170	.011	.102
Age	1.468	.228	.009	.111
Primary Disability	1.497	.223	.008	.119
Program Days	0.781	.378	.005	.124
Marital Status	0.560	.455	.003	.127
Assigned Evaluator	0.518	.473	.003	.130
Referral Status	0.340	.561	.002	.132
Referral Office	0.398	.529	.002	.134
Work Experience	0.090	.764	.001	.135
Number of Disab.	0.019	.890	.000	.135
Education	0.002	.965	.000	.135
Severe Disability	0.000	.986	.000	.135

* = P>.05 ** = P>.01

Sub-hypothesis 4A. Rehabilitation closure status including 1) Closed Not Employed and 2) Closed in Employment, will not correlate significantly with client age immediately before assessment, a continuous variable.

The data in Table 35 indicate that clients closed in employment averaged just under five years younger than those closed not employed.

Table 35
Analysis of Variance Results for Closure Status
on the Variable Age
(n=156)

Closure Status	N	Mean		SE	F	Ratio
		Age	SD			
Employed	110	32.53	10.27	0.98	91	.012*
Not Employed	46	37.20	12.34	1.82		

* = P > .05

Sub-hypothesis 4H. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Benefits received at assessment, a categorical variable including 1) Social Security Disability Income (SSDI), 2) Supplemental Security Income (SSI), 3) Local, County or State Welfare (LCS), 4) Veterans Benefits (VET), 5) Workers Compensation (WC), or 6) None.

As the data in Table 36 on page 126 indicate, significantly fewer clients who were receiving Social Security Disability Insurance or Supplemental Security Income at assessment became employed after rehabilitation than did clients receiving other types of benefits or no benefits at all.

Sub-hypothesis 4N. Rehabilitation closure status including 1) Closed in Employment and 2) Closed Not Employed, will not correlate significantly with Months Between Assessment and Closure, a continuous variable.

Examination of the data in Table 37 on page 127, closure status at follow-up did indeed correlate positively with time between the assessment and completion of client rehabilitation programs. Clients who were closed in employment were in rehabilitation programs an average of 21 months while those clients subsequently closed not employed were in their programs for nearly 28 months, a difference of 6.5 months.

Table 36
 Crosstabulations of Closure Status
 on the Variable Benefits
 (n=156)

Closure								Row
Status		SSDI	SSI	LCS	VET	WC	None	Tots.
Employed	Count	6	3	14	3	47	37	110
	Row %	5.5	2.7	12.7	2.7	42.7	33.6	100
	Col. %	40	33.3	93.3	75	73.4	75.5	
	Tot. %	3.8	1.9	9.0	1.9	30.1	23.7	70.5
Not Emp.	Count	9	6	1	1	17	12	46
	Row %	19.6	13.0	2.2	2.2	37.0	26.1	100
	Col. %	40	66.6	6.7	25	26.6	24.5	
	Tot. %	5.5	3.8	0.6	0.6	10.9	7.7	29.5
	Col. Tots.	15	9	15	4	64	49	156

Pearson's R = .209 Significance = .005**

** = P > .01

Table 37
 Analysis of Variance Results for Closure Status
 on the Variable Months Between Assessment and Closure
 (n=156)

Closure Status	N	Mean			F	
		# Mo.	SD	SE	Ratio	Signif.
Employed	110	21.28	13.12	1.25	8.273	.005**
Not Employed	46	27.87	12.86	1.89		

** = P>.01

Chapter Summary

This study was conducted to investigate possible relationships between the vocational self perception of a group of disabled persons, vocational assessment programming and the outcome of their vocational rehabilitation programs. First, the vocational self perceptions of clients, as measured by their responses to the New Hampshire Questionnaire (Power & Robinson, 1977) were compared before and after the intervention of a vocational assessment program.

The same perceptions were also studied in relation to a variety of demographic and program variables and to rehabilitation outcome. Four research hypotheses were developed to test these relationships. Each hypothesis and accompanying sub-hypotheses were stated in the null form.

The population consisted of 183 persons having a variety of physical and mental diagnoses who received vocational assessment programming at the Vocational Development Center in Manchester, NH between August, 1976 and May, 1979. Over two-thirds of the sample were male, the average was 33 years, and most of the clients were, or had been, married. Sixty-eight percent of the clients were high school graduates and 80% had work histories of at least one year prior to their vocational assessment. Two-thirds were currently receiving some type of disability compensation or public support at the time of the assessment.

Nearly all of the clients lived in the more populous Southern parts of New Hampshire and the average time of participation in vocational assessment was between six and seven days. Their assessment program was usually early in their rehabilitation program, preceding the establishment of an individualized written rehabilitation program (IWRP). Eighty percent had completed their rehabilitation programs by July, 1982 and of that group, more than 70% were closed

in employment, versus not employed.

Contrary to the first hypothesis, significant differences between mean responses to the New Hampshire Questionnaire immediately before and after vocational assessment were noted. The mean post-assessment responses for the total Questionnaire and for eleven of the twelve sub-scales were more positive than those made immediately preceding assessment ($p < .01$).

Slightly more support was found for the second hypothesis which stated that demographic or program variables would not significantly impact on New Hampshire Questionnaire scores. Multiple regression analysis results suggest that pre-assessment responses were significantly affected by age, prior work experience, the assigned evaluator, and whether or not the client was classified as severely disabled. The other eleven variables were not found to significantly affect pre-assessment self perceptions. Post-assessment responses to the New Hampshire Questionnaire, however, were only found to be significantly affected by education and assigned evaluator.

The third hypothesis stated that relationships between New Hampshire Questionnaire responses and employment outcome of vocational rehabilitation would not be significant. T-tests of mean differences for those clients closed in employment versus those closed not employed provide gen-

eral support for this hypothesis. Pre and post-assessment comparisons for the total Questionnaire and ten of the twelve sub-scales were not significant. Conversely, means for the sub-scale Job Expectation were significantly higher for clients subsequently closed employed than for their counterparts who were closed not employed. This was true on both pre and post-assessment administrations of the subcale. Responses to the sub-scale Stamina before assessment were also noted to differentiate between the two groups of closed clients.

Contrary to predictions regarding the fourth hypothesis, three demographic variables in the study appear to have significantly affected rehabilitation outcome. Multiple regression analysis results indicate that 13.54% of the total variance in rehabilitation outcome can be attributed to the demographic and program variables included in the study. Three of the variables (benefits received, age, and time between assessment and closure) were significant independent contributors to the variance. Successful rehabilitation outcome was more likely to occur when clients were younger, received veterans payments or workers compensation, and took less time to complete their rehabilitation programs.

Further discussion of these findings and the implications for further research are to be found in Chapter V.

C H A P T E R V

SUMMARY AND CONCLUSIONS

Introduction

This chapter is divided into seven sections. First, the research purpose, sample population and design of the study will be reviewed. The next four sections contain reviews of the research findings in relation to each of the major hypotheses. In a separate section, four questions raised by the study are discussed. The last section contains suggestions for further research on the effects of vocational assessment on clients and applications of the New Hampshire Questionnaire.

Purposes of the study. This study examined the impact of a specific vocational assessment program on 183 disabled clients and their rehabilitation outcomes. Before and after assessment, client self perceptions of attitude toward work and disability, job expectation, self confidence, anger, tension, stamina, depression and confusion were measured using the New Hampshire Questionnaire (Power & Robinson, 1977). Group responses were compared with each other,

with employment status after completion of rehabilitation services, and with fourteen demographic and program variables.

The study expanded on work by Emery (1979) by increasing her sample, lengthening the time between assessment and follow-up so that employment outcomes could be ascertained for 85% of the clients, and extending the standardization of the New Hampshire Questionnaire.

Four research hypotheses were developed:

1. Client vocational self perception, as measured by the New Hampshire Questionnaire immediately before and after vocational assessment will not vary significantly.
2. There will be no significant differences in vocational self perception, as measured by the New Hampshire Questionnaire immediately preceding and following vocational assessment, on the demographic and program variables included in this study.
3. Vocational self perception, as measured by the New Hampshire Questionnaire, will not be significantly different for clients closed in employed and not employed statuses.
4. The dependent variable of vocational rehabilita-

tion closure status will not correlate significantly with any of the independent demographic and program variables included in the study.

The population. The 183 clients included in this study participated in a vocational assessment program operated by the New Hampshire Vocational Rehabilitation Division. They represented 24% of the clients served between August, 1976 and May, 1979 and comprised the number of clients for whom all data required for the study was collected. A follow-up to determine rehabilitation outcome was completed in June, 1982 when 156 or 85% of the sample had completed their rehabilitation programs and closed either in employed or not employed statuses.

Discussion of Findings Regarding Hypothesis # 1

Analysis of client responses to the New Hampshire Questionnaire before and after assessment reveal significant differences in self perception ($P > .000$). Apparently, something happened during the assessment program which resulted in more positive self perceptions for the sample as a whole in areas such as job expectation, disability attitude and self confidence. Mean responses to other questions indicate that as a group, clients also felt less

angry, tense and confused after assessment.

These findings support Emery's conclusions that vocational assessment can facilitate client change as well as provide information about the client (1979, p. 52). It is also consistent with findings by Barker (1978), Dineen (1975), and Kennedy (1973), each of whom reported that assessment influenced one or more aspects of vocational self perception. The findings herein are also consistent with conclusions by Spokane & Oliver (1982) that vocational interventions with non-disabled groups result in detectable client gain despite wide variations in program content.

Discussion of Findings Regarding Hypothesis # 2

Demographic and program variables accounted for just over 17% of the total variance in NHQ scores before vocational assessment and less than 15% of the total variance in scores immediately after assessment. This suggests that variables other than the fifteen included in the study account for most of the variance between clients in areas of vocational self perception tapped by the NHQ.

However, significant variance in NHQ scores was also found within six of the variables. On both administrations, for instance, clients with less than 12 years of education had significantly lower NHQ scores than did their

better educated counterparts. The NHQ scores of both groups increased after assessment, but the increases for the better educated group were larger. This suggests that something happened during assessment which increased the differential effect of education on vocational self perception.

Physically disabled clients had correspondingly higher NHQ scores than did those with mental disabilities and clients not coded as being severely disabled had higher scores than their more severely disabled counterparts. Clients receiving local, county or state welfare payments had significantly lower NHQ scores than those receiving no benefits or other types such as workers compensation.

The discrepancy between mean scores by benefit and primary disability did not change significantly during vocational assessment. However, clients coded as severely disabled increased their scores more than did those not so coded, so that the differences between the two sub-groups were no longer statistically significant after the assessment.

As noted in Chapter IV, client scores on the NHQ were also significantly affected by the vocational rehabilitation office from which they were referred. It appeared, however, that wide variations in cell sizes may have accounted for the differences. When the office referring

only 3 of the 183 clients is removed from consideration, NHQ scores for clients from the remaining referral sources are not significantly different.

The evaluator assigned to work with clients was found to impact significantly on post-assessment NHQ scores. This finding is also questionable due to variation in cell size, since one evaluator worked with only three clients. When these clients are removed from consideration, the influence of this variable on NHQ scores is no longer significant.

Thus, of the six variables found to impact on NHQ scores, only those related to education, benefits and disability appear functionally significant. Within these areas, however, there is some indication that the intervention of vocational assessment may have influenced NHQ score levels of some sub-groups more than others. Later in this chapter, the relationship between effects of these variables on vocational self perception will be considered in relation to the degree to which demographic and program variables actually influence employment outcomes.

In considering such a relationship, it will be important to keep two things in mind. First, all 15 variables in the study accounted for less than one fifth of the variance in NHQ scores, suggesting that other variables (either alone or in combination) accounted for most of the

variance in vocational self perception as measured by the NHQ. Secondly, of the other studies reviewed, only Emery (1979) noted similar correlations between vocational self perception and education, disability and benefits. She also reported that clients with mental disabilities had significantly lower pre-assessment scores on one sub-scale of the NHQ, but did not find a similar pattern immediately after assessment or at follow-up. She did not examine the impact of any of the variables on the NHQ as a whole but noted that age, marital status and education significantly impacted on sub-scale scores after assessment and at follow-up.

Discussion of the Findings Regarding Hypothesis # 3

Total scores on the New Hampshire Questionnaire did not discriminate between clients by employment status after rehabilitation. There was a tendency for clients ultimately closed in employment to have higher scores, but statistical significance was not noted when NHQ scores were treated as continuous variables. However, when the scores are categorized into four groups by standard deviations above and below the mean, pre-assessment scores differentiate between those who ultimately became employed and those who did not ($P > .05$). Scores after assessment still

did not significantly discriminate between the two closure groups although a positive trend was present.

Larger increases in NHQ scores were noted for clients ultimately closed not employed than for clients closed in employment. This had the effect of narrowing the differences between pre and post-assessment means and provides a possible explanation why pre-assessment means come closer to discriminating between rehabilitation outcomes.

The most likely reason NHQ total scores did not discriminate between outcome groups is that NHQ scores are not sufficiently stable to predict over periods averaging one and a half years. The measure was developed to address the immediate effects of vocational assessment programming and focused on aspects of self perception thought by staff to change over the few days involved in such programs. It thus is likely that the impact of events occurring in the months between assessment and closure would be sufficient to blur any relationship between perception at assessment and employment outcome.

That two sub-scales of the NHQ (Job Expectation and Stamina) did differentiate between those ultimately closed employed and not employed may reflect the greater relative stability of a small number of items. The two sub-scales would seem compatible with each other and there is research which supports the idea that people tend to accomplish that

which they expect (eg. Flannagan et.al., 1966, Lutz, 1968).

Despite these exceptions, however, it remains generally true that client vocational self perception immediately before and after vocational assessment did not discriminate between those clients who would and would not achieve employment status after rehabilitation.

Initially, this finding appears inconsistent with studies discussed in Chapter II. In two of those studies (Berry & Miskimins, 1969; Barry, 1967), measures obtained early in the rehabilitation process predicted outcome. In both instances, however, the measures tapped the broader and more stable construct of self concept. It is therefore not surprising that the measures would have predicted behavior over a longer period of time than did the NHQ.

In Bolton's (1979) study, measures of self concept were obtained at follow-up, as well as during the rehabilitation process. Bolton noted that self concept was significantly more positive at follow-up than during rehabilitation. Unfortunately, he did not also report the degree to which the earlier measurement of self concept predicted outcome.

Emery's (1979) study also sheds light on the findings herein. She conducted a follow-up an average of 18 months after assessment. The NHQ was re-administered and the results compared with scores immediately before and after

assessment. The mean scores on the third administration were significantly higher than the mean for administration one, but also significantly lower than the mean for administration two. This suggests that NHQ scores are not stable over time and that they may be expected to change in response to experiences or variables yet to be identified. Since the average length of time between assessment and case closure in this study was longer than the time between assessment and Emery's follow-up, it is logical to predict even more change in self perception than she noted.

Thus, as a measure of short term impact, the NHQ appears appropriate for use. However, the data in this study does not support its use for the prediction of rehabilitation outcome.

Discussion of the Findings Regarding Hypothesis # 4

Demographic and program variables accounted for less than 14% of the variance in rehabilitation outcome. Two variables, months between assessment and closure, and benefits received at assessment, accounted for over two-thirds of that variance. Clients closed in employment required an average of 21 months after assessment to complete their programs, while clients for whom employment was not an outcome remained active with the Vocational Rehabilitation

Division for an average of 27 months before being closed.

This finding is consistent with Tebb's (1982) conclusion that longer rehabilitation programs are less likely to result in employment. Since other studies have not reported this finding, a multiple regression analysis was conducted to determine the effect that other variables might have had on the amount of time required to complete the rehabilitation process. The only variable found to have significant impact was rehabilitation outcome.

Employment success also varied significantly on the type of benefit received. Forty percent of those receiving Social Security Disability Insurance (SSDI) and 33% of Supplemental Security Income (SSI) recipients were successfully placed in jobs. Conversely, 73 - 93% of those receiving other type of benefits or no benefits at all, were closed in employment. Further analysis of clients receiving SSDI and SSI benefits indicates that on average they were older, and had less education than other groups in the benefits category.

Finally, although stepwise multiple regression analysis indicated that the other variables in the study accounted for less than 5% of the total variance in employment outcomes and that age accounted for less than 1% of the total variance, older clients were found to be less successful in finding jobs than were those who were

younger. On the average, clients who found employment were five years younger than those who were unsuccessful; seventy-six percent of the clients under 45 were placed in jobs while 57% of those over 45 were closed in employment.

General Discussion

In this section, four questions arising from the study will be addressed. Obviously, it is impossible to address all questions arising from a study with this number of variables. The ones selected herein seem particularly relevant to the original purposes of the study and serve as the basis for recommendations for further research.

Representativeness of the sample. At least in type of disability, the clients in the sample were different than the population served by the Vocational Development Center during the same period. In addition, the sample, setting and program structure were substantially different than found in other assessment programs. Therefore, it would be inappropriate to extend the findings beyond the Center and this group of clients.

Despite these problems with sample selection, it was the best that could be obtained at the time and was probably similar in most ways to the population of clients who

completed assessment during the period of the study. Although the sample was not random, the findings do reflect positively on the value of the vocational assessment program in operation at that time.

It is also likely that if the study were to be repeated today, similar problems in selection could only be avoided by more stringent research controls which are difficult to maintain over time. A design in which clients are randomly assigned to pre or post-assessment testing would be stronger and less demanding on staff. Since any design will require additional effort not directly beneficial to specific clients, one which minimizes client and staff investment will more likely succeed.

Functional versus statistical significance of the findings.

Although statistical significance has been demonstrated ($P > .000$), the size of the standard deviations makes it possible that change was attributable to regression effects. Closer examination of the data does not support such a rival hypothesis, however. First, the smaller of the two standard deviations was obtained before the intervention. Second, of the 37 clients scoring beyond one SD of the mean at least once, over half ($n=20$) moved even further from the mean during the second administration. Finally, clients with extreme scores who moved away from the mean did so at

an average of 42.25 points while those moving toward the mean did so at an average of 31.25 points each.

The NHQ has demonstrated the ability to detect small but consistent patterns of change not readily attributable to sample size, measurement differences, unacceptable validity or reliability, chance or regression effects. Although the changes are not large, they do suggest that something occurred during assessment which had an impact on the way in which clients responded to the items. Conversely, sufficient justification has not been demonstrated to warrant its use with individuals.

Changes needed in the New Hampshire Questionnaire. All but one of thirteen sub-scales identified by Power and Robinson (1977) and Emery (1979) have been shown to discriminate between vocational assessment before and after assessment with similar levels of efficiency. Although Emery also found that the work attitude sub-scale discriminates, but her findings were not confirmed herein.

Since only two sub-scales appear to be more sensitive than the Questionnaire as a whole, there is reason to reduce the length of the NHQ. As presently constituted, it requires 30 to 45 minutes to complete and at least 20 minutes to score by hand. To expect staff and clients to spend double these amounts of time for pre and

post-assessment use seems excessive.

There is sufficient data to suggest how it might be shortened without reducing its usefulness for program evaluation. Factor analysis data could be used to reduce the number of items in each of the existing scales. Item analysis completed for this study identified 47 items which discriminate between pre and post-assessment perceptions $P > .001$. Although all existing scales are represented, it may be that factor analysis would identify more useful clusters.

Perceived vs. actual effects of client and program variables on rehabilitation outcome. Earlier, it was noted that client vocational self perception was apparently influenced by factors of education, primary disability, benefits and severe disability coding. Of these, only benefits received was found to be significant ($P > .011$) in predicting employment success. In stepwise multiple regression analysis, the other variables were not significant (Education: $P < .96$; Primary Disability: $P < .22$; Severe Disability Coding: $P < .98$).

It may thus be hypothesized that at assessment, client perceptions about their ability to become employed were influenced by at least three variables not actually significant to success in finding a job. Such a hypothesis

was not directly tested since clients were not asked which variables were important to success in job placement. On the other hand, the fact that those who were coded as severely disabled or who had less education responded to the NHQ less positively, suggests that they may have allowed these variables to influence their thinking.

This possibility seems worthy of further investigation. If it is actually shown to be true, assessment and counseling staff might wish to assist clients in more accurate appraisal of their chances for success.

Since it does appear that older clients and those receiving certain types of benefits are actually at greater risk in finding employment, additional staff activity would seem appropriate. This may be somewhat easier with older clients since they tend to have had vocationally relevant life experiences. More detailed work histories may identify skills not readily apparent or recently used. Short refresher training instead of complete re-training in another field may also be appropriate.

Since clients receiving SSDI/SSI benefits are also older, similar strategies may be tried. Additional strategies will also be needed, however, since these benefits are usually seen as most permanent and difficult to regain if lost for an unsuccessful trial work period.

The issue of the length of time between assessment and

completion of rehabilitation programming also needs particular attention by both assessment and rehabilitation counseling staff. Staff should be aware of the time required to complete recommendations and provide clients with alternatives which might shorten the time required to prepare for employment. This finding would also appear to provide rehabilitation counselors with an added incentive for expediting client movement through treatment, training and placement phases of the rehabilitation process.

The establishment of maximum time limits would be inappropriate given that 20% of the successful closures occurred more than two and a half years after assessment. Rather, counselors should be aware that as time passes, the chances of success diminish and that for programs lasting longer than 30 months, success ratios are nearer 50% rather than the 70% noted for shorter rehabilitation programs.

Recommendations for Further Research

Much remains to be done before vocational assessment may be said to have clearly demonstrated its efficacy. This study has provided some useful information and identified areas where additional research is needed. Although many suggestions for further research might be made, five are most directly relevant.

1. There is a need to review the data from this study and shorten the New Hampshire Questionnaire to a more functional size. It appears that the original item pool is needlessly large and can be reduced without sacrificing utility. Items in the job expectation sub-scale and the new sub-scale are suggested as a beginning. This recommendation, originally made by Emery in 1979, should be implemented before the Questionnaire is used in other studies.

2. Additional analysis of the data collected for this study is needed. For example, this study did not examine in detail the ways in which men and women may respond differently to items addressing anger or job expectation. Emery and Beiseigel have both suggested that these variables may be especially relevant to the ways in which disabled women approach rehabilitation. It is likely that combinations of variables could be identified which would have significance to evaluators working with specific groups of clients.

A final example of data collected but not yet treated relates to those clients whose vocational self perceptions did not change or became more negative during assessment. This occurred for nearly one quarter of the sample. It may be that the demographic and program variables for these

clients are different and information about them would be helpful to counselors and evaluators in identifying clients for whom special efforts are needed.

3. In this study, the construct vocational self perception was distinguished from that of self concept. They are, however, clearly related and there is both logic and research to support Super's idea that self concept consists of the total effect of a variety of self perceptions. As one such perception, a person's view of self as a potential worker contributes to the broader construct of self concept. If this is true and the NHQ measures the narrower construct, correlation between it and measures such as the Tennessee Self Concept Scale and the Career Maturity Inventory should exist. As a start, scores of successfully employed workers on the NHQ and one of the more widely used measures, might be correlated to see if at a given time, patterns of scores are similar. It would also be helpful to determine if clients successfully employed have different patterns on these measures than do their unemployed counterparts.

4. Criterion related validity for the NHQ might be addressed by investigating whether clients who appear to become more positive in vocational self perception actually

change their occupational behaviors in measurable ways following assessment. This might be approached in three ways. First, changes in NHQ scores could be correlated with accuracy in self rating worker characteristics. Second, ability to state job goals which are consistent with profiles on Holland's Self Directed Search or the Minnesota Importance Questionnaire before and after assessment might be correlated with changes on NHQ scores. Third, NHQ scores could be compared with client rankings of variables which they believe are important in job success.

5. In the State-Federal Program of Vocational Rehabilitation, clients are transferred to status 20 ("Ready for Employment") when all planned treatment, counseling and training services are completed. This transfer reflects a joint client/counselor decision that the client is ready to seek and hold employment. In theory, the time that a client is in this status closure should be as little as three months. In fact, some clients remain in this status much longer before finding appropriate jobs; others cease job hunting because they are not actually ready. It might be hypothesized that those clients who are successful soon after being transferred to status 20 would have more positive vocational self perceptions than clients for whom the transfer is subsequently found to be inappropriate. Admin-

istration of the NHQ to groups of clients when they are transferred to status 20 would provide useful information about the effect of self perception on the actual job finding process. If it were found that those with more positive perceptions of self as a potential worker actually are more successful in becoming employed, the value of vocational assessment as a method of impacting on self perception would be strengthened and better guidelines for transfer to status 20 might be developed.

In concluding her report of research on the impact of vocational assessment on self concept, Chandler stated:

"Thus, it is possible that vocational assessment is a purely diagnostic process with no direct outcome per se for the client; rather, client outcome may instead be a function of the interpretation of the results of the evaluation to the client." (1978, p. 108)

The findings of this study suggest that in addition to providing information about - and for - the client, assessment also has a more direct impact. Under certain conditions which are yet to be clearly understood, it may also change the way in which clients perceive themselves in relation to work. Although the evidence to date is far from satisfactory, it appears that vocational assessment can be a therapeutic as well as diagnostic process.

BIBLIOGRAPHY

- Adler, A. The neurotic constitution. New York: Moffat, 1917.
- Aiduk, R. & Langmeyer, D. Prediction of client success with vocational rehabilitation in a mental hospital. Rehabilitation Counseling Bulletin, 1972, 16, (3), 3-10.
- American College Testing Program. The ACT guidance profile: two-year college edition. Iowa City, Iowa: Author, 1969.
- Avila, D. L., Combs, A. W., & Purkey, W. W. The helping relationship sourcebook. Boston: Allyn & Bacon, Inc., 1977.
- Baker, R. J. Service cutbacks - minimizing their effects. Vocational Evaluation and Work Adjustment Bulletin, 1982, 15, (1), 2.
- Barad, C. B. An unfinished task: evaluating vocational evaluation. Journal of Rehabilitation, 1972, 38, (3), 36-40.
- Barker, S. B. An evaluation of the development of the Self-Directed Search for use by visually disabled individuals. Unpublished doctoral dissertation,

- Florida State University, 1978.
- Barry, J. R., Dunteman, G. H., & Webb, M. V. Personality and motivation in rehabilitation. Gainesville, Florida: University of Florida, 1967. (ERIC Document Reproduction Service No. Ed. 01 338).
- Beech, M. E. Personal communication, November, 1980.
- Beiseigel, S. A. Whatever happened to all those clients: a follow-up study on workers' compensation clients at the Vocational Development Center, 1973-1976. Paper presented at the Workers' Compensation Conference, October 26, 1976.
- Berry, K. L. & Miskimins, R. W. Concept of self and post-hospital vocational adjustment. Journal of Consulting and Clinical Psychology, 1969, 33, (1), 103-108.
- Bolton, B. F. Introduction to rehabilitation research. Springfield, Illinois: Charles C. Thomas, 1974
- Bolton, B. F. Rehabilitation clients' psychological adjustment: a six year longitudinal investigation. Journal of Applied Rehabilitation Counseling, 1978, 9, (4), 133-141.
- Bolton, B. F., Brookings, J., Taperek, P., Rowland, P., Cook, D. W., & Short, H. Twelve years later: the vocational and psychological adjustment of former rehabilitation clients. Journal of Applied Rehabili-

- tation Counseling, 1980, 2, (3), 113-124.
- Borus, M. E. Measuring the impact of employment-related social programs. Kalamazoo: W. E. Upjohn Institute for Employment Research, 1979.
- Buell, G. J. & Anthony, W. A. Demographic characteristics as predictors of recidivism and post-hospital employment. Journal of Counseling Psychology, 1973, 20, (4), 361-365.
- Chandler, A. L. Client change in self-concept, vocational maturity, and decision-making skills following vocational evaluation. Unpublished doctoral dissertation, Michigan State University, 1978.
- Cho, D. W. & Schuermann, A. C. Economic costs and benefits of private gainful employment of the severely handicapped. Journal of Rehabilitation, 1980, 46, (3), 28-32.
- Collins, A. J. What lies ahead in the 1980's: a national survey. Vocational Evaluation and Work Adjustment Bulletin, 1980, 12, (2), 57-64.
- Cook, D. W. Baselining rehabilitation center outcome and the effectiveness of evaluation recommendations. Hot Springs: University of Arkansas, Arkansas Rehabilitation Research and Training Center, 1977.
- Cook, D. W. Effectiveness of vocational evaluation training recommendations. Vocational Evaluation and Work

- Adjustment Bulletin, 1978, 11, (3), 8-13.
- Cook, D. W., & Brookings, J. The relationship of client vocational appraisal to training outcome and employment. Journal of Applied Rehabilitation Counseling, 1980, 11, (1), 32-35.
- Commission on Accreditation of Rehabilitation Facilities. Standards manual for rehabilitation facilities. Tucson, Arizona: Author, 1982.
- Crites, J. O. Career maturity inventory: theory and research handbook. Monterey: McGraw-Hill, 1973.
- Czerlinsky, T, & Coker, C. C. The impact of vocational evaluation on job goal decisions: evaluators' perspectives. Vocational Evaluation and Work Adjustment Bulletin, 1980, 13, (2), 40-45.
- Dillman, D. A. Mail and telephone surveys: the total design method. New York: John Wiley and Sons, 1978.
- Dineen, T. B. Work evaluation as a technique for improving self-concept. Vocational Evaluation and Work Adjustment Bulletin, 1975, 8, (4), 28-34.
- Downs, S., Farr, R. M., & Colbeck, L. Self appraisal: a convergence of selection and guidance. Journal of Occupational Psychology, 1978, 51, 271-278.
- Emery, S. M. Client-centered program evaluation in vocational evaluation of the handicapped. Unpublished masters thesis. University of New Hampshire -

- Keene, 1979.
- Federal Register. Vocational rehabilitation programs.
Washington, D. C.: U. S. Government Printing Office,
Tuesday, November 25, 1975, 54696-54731.
- Field, T. & Emener, W. Rehabilitation counseling in the
80's: the coming of camelot. Journal of Applied
Rehabilitation Counseling, 1982, 3, (1), 40-46.
- Fitts, W. Manual for the Tennessee Self-Concept Scale.
Nashville: Counselor Resources and Tests, 1964.
- Fitzgerald, T., McGowan, D., Kutner, M., & Wenger, N. K.
Demographic determinants of success in vocational
rehabilitation of cardiac patients. Journal of
Rehabilitation, 1982, 48, (2), 35-38.
- Freud, S. The ego and the id. London: Hogarth, and the
Institute of Psycho-Analysis, 1935.
- Gottfredson, G. D., & Lipstein, D. J. Using personal
characteristics to predict parolee and probationer
employment stability. Journal of Applied Psychology,
1975, 80, (5), 644-648.
- Graham, C. S. An effective measure for work adjustment:
providing evidence of impact. Vocational Evaluation
and Work Adjustment Bulletin, 1980, 13, (3), 98-102.
- Hawryluk, A. Rehabilitation gain: a better indicator
needed. Journal of Rehabilitation, 1972, 36, (3),
22-25.

- Hein, F. The effects of vocational evaluation on clients' vocational career maturity. Unpublished masters thesis, University of Wisconsin - Stout, 1979.
- Herbert, J. T. & Menz, F. E. Reactions to research on therapeutic effects of vocational evaluation: a selective review of the problems and alternatives. Vocational Evaluation and Work Adjustment Bulletin, 1981, 14, (3), 100-107.
- Holbert, W. M. A comparison of the effectiveness of clinical judgement with objective evaluation in prognosing rehabilitation outcome. Paper presented at the National Rehabilitation Association, San Diego, California, September 19, 1970.
- Holland, J. L. Making vocational choices. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1973.
- Hollingsworth, D. K., & Watson, D. D. Chronic low back pain and the rehabilitation process: a multiple regression analysis. Journal of Applied Rehabilitation Counseling, 1980, 11, (2), 90-93.
- Hoyt, C. J. Test reliability estimated by analysis of variance. IN Mehrens, W. A. & Ebel, R. L. (Eds.) Principles of educational and psychological measurement, Chicago: Rand & McNally and Co., 1969.
- Israel, A. Predicting rehabilitation success of ex-mental patients with tests of self-concept and concept of

disability. Unpublished doctoral dissertation,
University of Missouri, 1973.

Jacobson, J. A. Research and demonstration project to
develop a work evaluation, work adjustment unit in
a human resource center. Salt Lake City: Utah Board
of Education, Division of Rehabilitation Services,
1973.

Kennedy, H. Changes in task specific self-concepts as a
result of a two-week vocational evaluation program.
Unpublished masters thesis, University of Wisconsin -
Stout, 1974.

Kerlinger, F. N. Foundations of behavioral research. New
York: Holt, Rinehart & Winston, Inc.

Lynch, R. K. Functional factors related to vocational
rehabilitation outcome: implications for service
providers and researchers. Journal of Applied Rehab-
ilitation Counseling, 1981, 12, (3), 113-122.

Lytel, R. B. Jr. Aptitudes and self-perceptions relating
to the employability of the emotionally disabled.
Journal of Employment Counseling, 1978, 15, (3),
134-143.

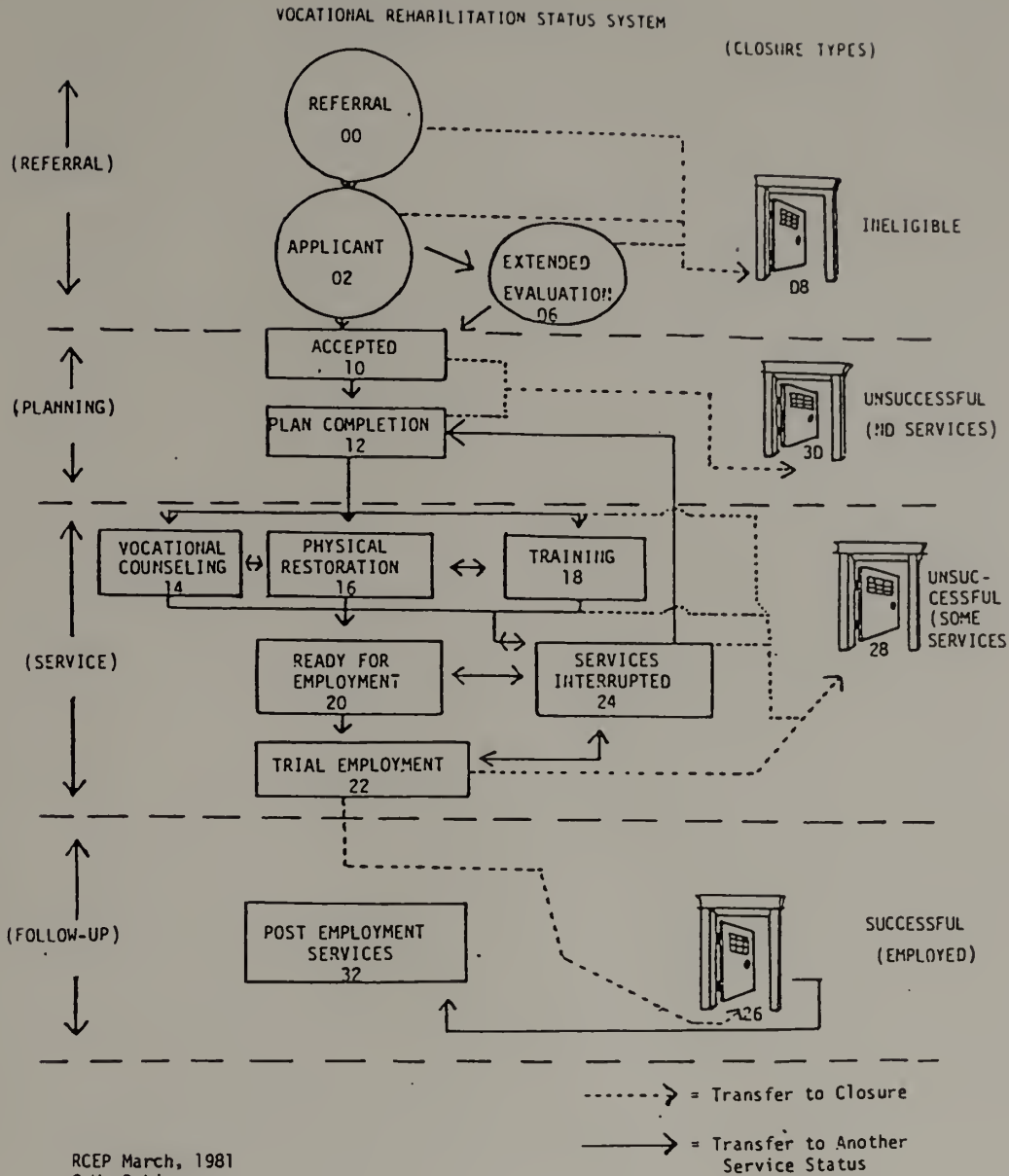
Match, E. Bibliography of vocational rehabilitation with
emphasis on work evaluation. Johnstown, Penn-
sylvania: University of Pennsylvania, Research and
Training Center in Vocational Rehabilitation, 1968.

- Menz, F. E. Vocational evaluation and client vocational attitude, competency and awareness: A Research Report. Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, 1978.
- Miller, M. R. Does a work evaluation program work? Journal of Rehabilitation, 1958, 24, (2), 8-17.
- Miskimins, R. W. Manual for the Miskimins Self-Goal-Other Discrepancy Scale. Fort Collins, Colorado: Rocky Mountain Behavioral Science Institute, Inc., 1967.
- Murphy, G. Personality. New York: Harper & Brothers, 1947.
- Neff, W. S. Work and human behavior. Chicago: Aldine Press, 1973.
- Patterson, C. H. The self in recent Rogerian Theory. In Avila, D. L., Combs, A. W., & Purkey, W. W. (Eds.) The helping relationship sourcebook. Boston: Allyn & Bacon, Inc., 1977.
- Power, P., & Robinson, C. W. The New Hampshire Questionnaire. Manchester, N. H.: Vocational Development Center, 1977.
- Prazak, J., Prazak, G., & Walker, R. A. Planning for program evaluation. Minneapolis: Evaluation Systems, Inc., 1975.

- Fruitt, W. A. Vocational (work) evaluation. Menomonie, Wisconsin: Walt Pruitt Associates, 1977.
- Rogers, C. On becoming a person: a therapists' viewpoint of psychotherapy. Boston: Houghton Mifflin, 1961.
- Rosenberg, B. & Usdane, W. M. The TOWER system: vocational evaluation of the severely handicapped for training and placement. Personnel and Guidance Journal, 1963, 42, 149-152.
- Snygg, D. & Combs, A. W. Individual behavior. New York: Harper, 1949.
- Spaniol, L. Technical assistance report: Vocational Development Center. Manchester, N. H.: Unpublished report, Vocational Development Center, 1976.
- Speiser, A., Pearl, H. H., & Staniec, A. Bibliography on work evaluation in vocational rehabilitation. Syracuse: Consolidated Industries of Greater Syracuse, 1966.
- Spergel, P. Vocational evaluation: research and implications for maximizing human potential. Journal of Rehabilitation, 1970, 36, (1), 21-24.
- Spokane, A. R. & Oliver, L. W. The outcomes of vocational intervention. In Osipow, S. H. & Walsh, W. B. Handbook of vocational psychology. In Press.
- Super, D. E. Vocational adjustment: implementing a self concept. Occupations, 1951, 30, 1-5.

- Super, D. S., Starishevsky, R., Maitlin, N. & Jordaan, J. P. Career development: self concept theory. Princeton, N. J.: College Entrance Examination Board, 1963.
- Tabb, A. Getting the injured worker back in the labor market. Risk Management, 1982, 13, (2), 25-30.
- Toenjes, C. M., & Borgen, F. H. Validity generalization of Holland's hexagonal model. Measurement and Evaluation in Guidance, 1974, 7, (2), 79-85.
- Tolbert, E. L. Counseling, for career development. Boston: Houghton-Mifflin, 1980.
- Tseng, M. S. The effects of vocational evaluation on vocational rehabilitation. Research Project Number R-27. Morgantown, West Virginia: West Virginia University, Research and Training Center, 1977.
- U. S. Department of Labor. Dictionary of Occupational Titles, IV Edition. Washington: U. S. Government Printing Office, 1977.
- Vierstein, M. C. The extension of Holland's occupational classification of all occupations in the Dictionary of Occupational Titles. Journal of Vocational Behavior, 1972, 2, (2), 107-121.
- Weinberg, N. The effect of physical disability on self-perception. Rehabilitation Counseling Bulletin, 1976, 7, (3), 15-20.

- Weinrach, S. G. Career counseling: theoretical and practical perspectives. New York: McGraw-Hill Book Company, 1979.
- Whitney, D. R., Predicting from expressed vocational choice. Personnel and Guidance Journal, 1972, 48, (4), 279-286.
- Williams, D. M. A follow-up study on the relationship between work evaluations' recommendations and client placement. University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, 1975.
- Witham, J. Personal Communication. November, 1980.
- Wright, B. A. Physical disability - a psychological approach. New York: Harper and Row, 1960.
- Wylie, R. C. The self concept: a critical survey of pertinent research literature. Lincoln, Nebraska: University of Nebrasks Press, 1961.



VOCATIONAL REHABILITATION STATUS SYSTEM

§ 1370.2 Definitions.

(a) *Program.* A program is any continuing activity which is funded by the Rehabilitation Services Administration (RSA).

(b) *Project.* A project is a discrete activity with a definite termination date.

(c) *Cases accepted.* A case is accepted once it is placed in or has passed through Status 10.

(d) *Cases served.* A case is served if it is or has been in one of the active caseload statuses (i.e. 10 through 24) during the reporting period.

(e) *Statistical Reporting System Caseload Statuses (as defined in section 3005.00 of the Rehabilitation Services Manual)—*

(1) Status 00. Referral. This status represents entrance into the vocational rehabilitation process. A referral is defined as any individual who has applied to or been referred to the vocational rehabilitation agency by letter, by telephone, by direct contact, or by any other means; and for whom the following minimum information has been furnished: name and address, disability, age and sex, date of referral, and source of referral;

(2) Status 02. Applicant. As soon as the referred individual (Status 00) signs a document requesting vocational rehabilitation services, he is placed into Status 02 and is designated as an applicant. Generally, the document will be an agency application form, but a letter signed by an individual who provides the minimum basic referral information and requests service should also be considered as a basis for placing the individual in Status 02. This is important, since the applicant must be notified in writing if his request for vocational rehabilitation services has been denied, and the only certain basis for determining that the individual has knowledge of having been referred is by the existence of a document signed by the individual;

(3) Status 06. Extended Evaluation.

(1) An applicant should be placed in this status when the counselor has certified the applicant for extended evaluation. Individuals placed in this status may not remain in the status longer than eighteen consecutive months from the date of certification but may be moved from this status to either Status 10 or 08 at any time prior to the expiration of the 18-month period if it is determined that, either (A) there is a reasonable expectation that the individual can benefit in terms of employability (Status 10), or (B) there is no reasonable likelihood that he can benefit in terms of employability (Status 08). No time allowances can be made for interruptions during this period regardless of the nature of, or reason for, the interruptions.

(2) Prior to or simultaneously with acceptance of an individual for services for purposes of determination of rehabilitation potential (extended evaluation), there will be a certification of: (A) the presence of a physical or mental disability, (B) the existence of a substantial handicap to employment, and (C) the inability to make a determination that vocational rehabilitation services may benefit the individual in terms of employability. An individualized written rehabilitation program is required concurrently with or reasonably soon after execution of the certificate of eligibility for extended evaluation services.

(4) Status 08. Closed From Referral, Applicant, or Extended Evaluation Statuses.

This status has been provided to furnish a means for identifying all persons not accepted for vocational rehabilitation services, whether closed from referral status (00), applicant status (02), or extended evaluation (06). All persons processed through referral, applicant, and/or extended evaluation, and not accepted into the active caseload for vocational rehabilitation services, will be closed in this status. A certificate of ineligibility is required for a closure in Status 08, except when the client becomes unavailable for services. A copy of the Form RSA-300, properly completed, dated, and signed is sufficient certification of ineligibility for these cases, provided case documentation includes specific detailed reasons for the closure action;

(5) Status 10. Individualized Written Rehabilitation Program Development.

While a client is in this status, the case study and diagnosis is completed to provide a basis for the formulation of the individualized written rehabilitation program. A comprehensive case study is basic to determining the nature and scope of services to be provided in order to accomplish the vocational rehabilitation objective of the individual. The counselor and client formulate and plan the rehabilitation services necessary to the solution of the client's problem, and those services are clearly outlined to him.

The individual remains in this status until his rehabilitation program is written and approved;

(6) Statuses 10-24. Active Caseload

Statuses. Active caseload statuses begin with the development of the individualized written rehabilitation program (Status 10). A client is placed in Status 12 when his individualized written rehabilitation program has been approved. Statuses 14, 16 and 18 are the in service statuses and are provided for case progress designations to indicate the kind or kinds of services given to the client to prepare him for employment. Status 14 indicates counseling and guidance only; Status 16 designates physical and mental restoration, and Status 18 is the training status. A client is placed in Status 20 when he has completed training and is ready for employment. Status 22 indicates the client has been placed in employment. Status 24, service interrupted, is recorded if services are interrupted while the client is in one of the Statuses, 14, 16, 18, 20 or 22:

(7) Status 26. Closed Rehabilitated.

Cases closed as rehabilitated must as a minimum have been declared eligible, have received appropriate diagnostic and related services, have had a program for vocational rehabilitation services formulated, have completed the program insofar as possible, have been provided counselling as an essential rehabilitation service, and have been determined to be suitably employed for a minimum of 60 days;

(8) Status 28. Closed Other Reasons After Individualized Written Rehabilitation Program Initiated.

Cases closed in this category must have been declared eligible, have received appropriate diagnostic and related services and have had a program for vocational rehabilitation services formulated, but have not completed the program and/or have not been provided counseling, and/or have not been determined to be suitably employed for a minimum of 60 days;

(9) Status 30. Closed Other Reasons Before Individualized Written Rehabilitation Program Initiated.

Cases closed in this category are those cases which, although accepted for rehabilitation services, did not progress to the point that rehabilitation services were actually initiated under a rehabilitation plan.

(f) Upper performance level. The upper performance level for a data element is defined as the average value (of all agency averages) for the data element, plus one standard deviation. (The average and the standard deviation are computed over the population of individual agency averages.)

(g) Lower performance level. The lower performance level for a data element is defined as the average value (of all agency averages) for the data element, minus one standard deviation. (The Average and the standard deviation are computed over the population of the individual agency averages.)

NEW HAMPSHIRE QUESTIONNAIRE

The purpose of this questionnaire is to measure your ideas and feelings about important areas of living and working. The statements are intended to indicate these feelings and attitudes. You are asked to answer the attached questions about yourself, how you feel about yourself, and how you feel about your future at this time. Your answers will be kept strictly CONFIDENTIAL. There is no "right" or "wrong" answer. The CORRECT answer is the one that best describes how you feel. You will not be criticized for any response you give, and you need not try to impress anyone.

Please answer EVERY question. Work as rapidly and as carefully as you can. Do not spend too much time on any one question. Please use only a number "2" pencil. If you change an answer, please erase your original answer completely. If you do not understand a question, please ask one of the evaluators to explain.

Show your answer by making an "X" in one of the brackets in this way:

	Not at all	Slightly	Somehwat	Very much
1. I like camping.	()	(X)	()	()

If you liked camping "slightly", you would have filled in the bracket as shown above.

NEVER/RARELY	SOMETIMES	OFTEN	USUALLY/ALWAYS
()	()	()	()

1. I am angry. (ANGER, NUSCAL)
2. I am much slower in getting started than I used to be. (STAMNA)
3. I am getting back my old zest. (STAMNA)
4. I can put in a full day's work. (STAMNA)
5. I feel that I do not have as much energy as I used to have. (STAMNA)
6. I feel that my problems are piling up so that I cannot overcome them. (DEPRES)
7. I feel lonely most of the time. (DEPRESS)
8. I feel alone even when I'm with people I like.
(DEPRESS, GLS)
9. I am very quarrelsome. (ANGER)
10. I am sluggish. (STAMNA)
11. I become bored quickly. (STAMNA, NUSCAL)
12. When it comes to working, I have as much energy now as before my disability. (STAMNA)
13. I feel that I have a lot of vitality left. (STAMNA)
14. I feel that people con't care about me. (DEPRES)
15. I feel unworthy of anything better than I have.
(DEPRESS)
16. I think that I should give up thinking about a job.

(DEPRESS)

17. I am frustrated because my disability prevents me from getting a good job. (ANGER, NUSCAL)
18. Most of my interest in other people is lost.
(DEPRESS, GLS)
19. I am contented with my life. (DEPRES)
20. I need a push to get started. (STAMNA)
21. I am worried that I will not be accepted by others because of my disability. (TENSN)
22. I am not fit for work anymore. (DEPRES, NUSCAL)
23. I give up easily. (SLFCON) (item discarded)
24. I feel bores with my life (DEPRES)
25. I feel panicky when I think about what I am going to do with my life. (TENSN, GLS)
26. I have a lot of "stick-to-itiveness". (STAMNA)
27. I seem to fail an anything I do. (DEPRES)
28. I become weary easily. (STAMNA)
29. I am furious about the way I'm treated. (ANGER, GLS)
30. I become tense when I think of all the things lying ahead of me. (TENSN)
31. I feel happy. (DEPRES, GLS)
32. I feel that I get as much satisfaction out of my life as I used to. (DEPRES, NUSCAL)
33. I feel sad even when others around me are cheerful.
(DEPRES, GLS, NUSCAL)
34. I keep plugging even when it looks like I am not

- getting anywhere. (STAMNA)
35. I feel that I'm really getting somewhere in life.
(DEPRES, NUSCAL)
36. I feel fatigued most of the time. (STAMNA)
37. I am dissatisfied with myself. (DEPRES, GLS, NUSCAL)
38. I am not interested in anything. (DEPRES)
39. I just can't concentrate. (DEPRES, NUSCAL)
40. I am jumpy about going back to work. (TENSN)
41. I feel deceived when dealing with people. (ANGER)
42. I feel hopeless about the future. (DEPRES, GLS)
43. I feel useless because of my disability. (DEPRES)
44. I know that I am not a failure. (DEPRES)
45. The way things are going makes me feel desperate.
(DEPRES)
46. I am hopeful about the future. (DEPRES)
47. I am calm. (TENSN, GLS, NUSCAL)
48. I feel ashamed because of my disability. (ANGER,
NUSCAL)
49. I feel full of pep. (STAMNA)
50. I have to push myself very hard to finish a job.
(STAMNA)
51. I am cheerful most of the time. (DEPRES)
52. I become tense when I think about getting a job.
(TENSN)
53. I am pessimistic about my future. (DEPRES)
54. I find it hard to keep interested in what I do.

(STAMNA)

55. I think that life is worthwhile. (DEPRES)
56. I am a moody person. (ANGER, GLS, NUSCAL)
57. I have to rest often. (STAMNA)
58. I am excited about my future. (DEPRES, NUSCAL)
59. I am shaky when I try to think about working.
(TENSN)
60. I feel helpless when I think about my future.
(DEPRES, GLS)
61. I am worried about my physical or mental problems.
(TENSN, NUSCAL)
62. I am restless because I am not working. (DEPRES)
63. I am discouraged about getting anywhere. (DEPRES)
64. I've lost my zest for living. (STAMNA, GLS)
65. I am very bitter about life. (ANGER, GLS)
66. I am worried that I will not be able to get a job.
(TENSN, GLS)
67. I have not found anything to look forward to.
(TENSN, GLS, NUSCAL)
68. I am annoyed about the way things are going. (ANGER)
69. I feel that life is going well for me at the present
time. (DEPRES)
70. I am unhappy. (DEPRESS, GLS)
71. It seems that I am not getting anywhere in life.
(DEPRES, GLS, NUSCAL)
72. The way things are happening to me make me feel

helpless. (DEPRES, NUSCAL)

73. I am fairly relaxed about life in general. (TENSN,
GLS)

74. I feel that it is futile for me to plan any future.
(TENSN, GLS)

STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
()	()	()	()

75. I feel optimistic. (DEPRES)

76. I know my own abilities as a worker. (SLFCON,
NUSCAL)

77. I have difficulties in understanding directions.
(CONFNSN)

78. My mind feels cloudy. (CONFNSN)

79. I know what kind of a job I want. (CONFNSN)

80. I understand the problems that other disabled people
have. (DISATT)

81. I am very forgetful lately. (CONFNSN)

82. I have difficulty in carrying out instructions.
(CONFNSN)

83. I am comfortable with other people who have a
disability. (DISATT)

84. I know the kinds of jobs that I cannot do. (CONFNSN)

85. I don't like to work where there are other disabled
workers. (POSATT)

86. It is my disability which is preventing me from getting the right job. (DISATT, NUSCAL)
87. I have difficulty in paying attention. (CONFNSN)
88. I can learn from others who have a different disability than mine. (DISATT, NUSCAL)
89. I am much more uncertain than I used to be. (CONFNSN)
90. I find it harder to fact life than I used to. (POSATT, NUSCAL)
91. I really don't know where I'm going. (CONFNSN, NUSCAL)
92. Every now day holds something new and exciting. (POSATT)
93. I'm pretty clear about what steps to take for the best job for me. (CONFNSN, NUSCAL)
94. My future plans are so full of difficulties that I may have to give them up. (POSATT, AJGA)
95. I am clear headed about my plans for a job. (CONFNSN, NUSCAL)
96. I feel that others don't understand me. (POSATT, AJGA)
97. I know what I want to do with my life. (CONFNSN)
98. Sometimes I would like to run away from it all. (POSATT, NUSCAL)
99. I'm not sure just how to prepare myself for the kind of job I should go after. (CONFNSN, NUSCAL)
100. The future is too uncertain to plan anything.

(CONFNSN, NUSCAL)

101. I accept the limitations of my disability fairly well. (DISATT)
102. I am mixed up most of the time. (CONFNSN, NUSCAL)
103. I can't figure out what I'm going to do. (CONFNSN)
104. It bothers me when I'm with a person with a disability like mine. (DISATT)
105. I really don't know how to find the right kind of job. (CONFNSN)
106. I don't take notice of other people's disabilities. (DISATT)
107. Even if I get a job, I doubt if I can hold it very long. (POSATT)
108. My plans seem pretty fuzzy. (CONFNSN)
109. I believe that my disability makes me feel very different from others. (DISATT)
110. I have what it takes to be a good worker. (POSATT)
111. I am confused about what kind of a job is best for me. (CONFNSN, AJGA)
112. I am confident about my plans. (SLFCON)
113. I think that I am now the person I would like to be. (SLFCON)
114. My handicap will not interfere with my job. (SLFCON)
115. I'm ready to take a chance to try a new type of work. (SLFCON)
116. I can handle anything within my own physical limits.

- (SLFCON)
117. I start thinking that I don't have the ability to do anything. (SLFCON)
118. Although I am disabled, I make up for my physical or mental limitations. (SLFCON)
119. I expect to succeed in things I do. (SLFCON)
120. I am unsure of myself regarding the right kind of job for me. (SLFCON, AJGA)
121. I am afraid that I have lost the ability to work. (SLFCON)
122. I do not have much confidence in myself. (SLFCON, NUSCAL)
123. I can cope with the ups and downs of life. (SLFCON, NUSCAL)
124. I am about as able to work as I ever was. (SLFCON, AJGA)
125. There is no sense making plans with my kind of disability. (SLFCON)
126. I can get a job and keep it. (SLFCON, AJGA, NUSCAL)
127. I feel unsure about earning a good income. (SLFCON, NUSCAL)
128. It is difficult for me to cope with the negative attitudes of others toward my disability. (SLFCON, NUSCAL)
129. I feel sure that I can overcome my limitations that prevent me from getting a job. (SLFCON)

130. I feel like I have failed. (SLFCON, NUSCAL)
131. I have the ability to do well in training or a job.
(SLFCON)
132. I have confidence that I can get and hold a job.
(SLFCON)

NOT TRUE AT ALL	SOMEWHAT TRUE	MOSTLY TRUE	QUITE TRUE
()	()	()	()

133. To get the right job, the most important thing is
who you know. (JOBEXP)
134. I will only be able to find a job with some help.
(JOBEXP)
135. Because of my disability, it will be hard to find
a job. (JOBEXP)
136. People don't like to hire disabled people. (JOBEXP)
137. I don't know how to go about getting into the kind of
work I want to do. (JOBEXP, NUSCAL)
138. It is hard for me to get back into a regular work
routine. (JOBEXP)
139. I'd like to try something new in the way of jobs.
(JOBEXP)
140. I get tense when I think about a job interview.
(JOBEXP)
141. I can learn as much about the right job for me from
the want-ads in the paper as from this evaluation.

(JOBEXP)

142. I know very little about the requirements of a job.

(JOBEXP, NUSCAL)

143. I really can't find any work that has much appeal

to me. (JOBEXP, NUSCAL)

144. The biggest obstacle to getting a job is the negative

attitude of most employers. (JOBEXP)

145. When I'm not working, I begin to feel bad about

myself. (JOBEXP, GLS)

HOW IMPORTANT DO YOU THINK THESE ITEMS ARE? (WRKATT)

NOT IMPORTANT	SOMEWHAT	VERY	EXTREMELY
AT ALL	IMPORTANT	IMPORTANT	IMPORTANT
()	()	()	()

146. Doing the job well.

147. Following company rules.

148. Being honest with the boss.

149. Getting along with other workers.

150. Getting along with the boss or supervisor.

151. Being on time.

152. Being careful about company property.

153. Enjoying the job.

154. Having the right skills to do the job.

DEFINITIONS FOR SUB-SCALES OF
THE NEW HAMPSHIRE QUESTIONNAIRE

STAMINA (STAMNA):

A feeling that one has the energy, despite disability limitations, to persevere at a task; a feeling that one does not want to give up easily.

TENSION (TENSN):

Worried about not being able to get a job; nervous about going back to work; worried about not being accepted by others because of disability; feeling of panic when thinking about what to do with one's life.

DEPRESSION (DEPRES):

Feels discouraged and helpless about the future; feels bored about life; feels he/she is not getting anywhere in life; feels that one is a failure; feels sad most of the time; feelings of dissatisfaction and not having found anything to look forward to.

SELF CONFIDENCE (SLFCON):

Feels s/he has confidence in one's ability to be a good worker; willing to take a risk to try a new job; expects to find and succeed in a job; ability to cope with

the limitations of one's disability; feels s/he has the ability to cope with the negative attitudes of others toward the disability.

CONFUSION (CONFUSN):

Feels s/he has difficulty understanding directions from others; is uncertain about plans for the future.

DISABILITY ATTITUDE):

Feels that it is his/her disability which is preventing one from getting the right job; feels comfortable being with other disabled people; feels that s/he accepts the limitations of disability.

JOB EXPECTATION (JOBEXP):

Feels that there are difficulties finding a job; feels he/she needs to have much help to obtain a job; there is a lack of understanding about how to get the right job; feels that employers have negative attitudes about hiring disabled people.

POSITIVE ATTITUDE (POSATT):

Looks forward to the future and being able to execute
e to get/hold jobs.

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POSITIVE ATTITUDE (POSATT):

Looks forward to the future and being able to execute plans; feels positive about being able to get/hold jobs.

ANGER (ANGER):

A feeling of frustration because of limitations due to disability; feels angry about the perceived feelings of others toward them; client describes himself/herself as quarrelsome, moody, and bitter.

WORK ATTITUDE (WRKATT):

Feels s/he knows what is required to hold a job.

