THE VALIDITY OF COUNSELING VARIABLES CONSIDERED IN THE ADVISEMENT OF DISABLED VETERANS ENTERING TERMINAL BUSINESS TRAINING

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THE VALIDITY OF COUNSELING VARIABLES CONSIDERED IN THE ADVISEMENT OF DISABLED VETERANS ENTERING TERMINAL BUSINESS TRAINING

By

JOHN STUART STOREY

AN ABSTRACT

Submitted to the School of Graduate Studies of Michigan
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ABSTRACT

This study is concerned with the evaluation of the counseling variables and the vocational adjustment of a selected group of seriously disabled veterans who pursued a terminal business course under the Veterans Administration rehabilitation program of World War II. The first problem was to determine which of the objective variables considered most important in the counseling of disabled veterans best discriminated between those who completed and those who failed to complete the specified training program. The second problem was to determine whether rehabilitated or discontinued veterans have made the most satisfactory vocational adjustment in the post training period.

The sample for the analysis of the counseling variables consisted of 159 male, white veterans rated as 50 percent or more disabled who entered a terminal business course during the period 1946-1949 inclusive and who resided in the Detroit metropolitan area. One hundred and four cases in the sample had completed their training, 55 had terminated short of completion. The sub-sample utilized in the analysis of the vocational adjustment of the two groups consisted of the 101 veterans of the original sample who responded to a mailed questionnaire. The response group was composed of 67 rehabilitated and 34 discontinued cases.

Data relative to the counseling variables were secured from training sub-folders and medical files maintained by the Veterans Administration. Rehabilitated and discontinued groups were tested for signifi-

cance of difference by either the chi-square or the critical ratio technique as appropriate.

It was discovered that no significant relationship existed between completion of training and the following counseling variables: age, number of dependents, magnitude of disability, father's occupation, related employment experience, intelligence test scores, performance on the Names Comparison section of the Minnesota Clerical Test, and scores on six scales (mechanical, scientific, persuasive, artistic, literary, and social service) of the Kuder Preference Record. A positive relationship significant at the five percent level of confidence or better was found between completion of training and the following: a high school education, orthopedic and respiratory types of disabilities, scores on the Number Comparison section of the Minnesota Clerical Test, and scores on the computational and clerical scales of the Kuder Preference Record. A significant negative relationship was found to exist between completion of training and a neuropsychiatric type of disability and scores on the musical scale of the Kuder.

No significant relationship was found to exist between completion of training and reported earnings for the 1953 calendar year. There was a significant relationship between completion of training and expressed job satisfaction. In addition, it was found that disabled veterans who completed their training were more likely to be employed, made fewer changes of jobs, and demonstrated a greater tendency to advance vocationally than veterans whose training was terminated before completion.

The results of this study led to the conclusion that counselors of disabled veterans may have to re-direct the emphasis placed upon certain objective variables utilized in the counseling process when terminal business training is under consideration. It was further concluded that a terminal business course is an appropriate choice for seriously disabled veterans who demonstrate the proper constellation of interests and aptitudes.

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CHAPTER I

THE PROBLEM: ITS NATURE AND IMPORTANCE

Introduction

World War II demanded that the nation mobilize and train millions of men to become successful fighting units. As a consequence peacetime demobilization placed upon the nation a heavy obligation to assist these veterans in a satisfactory conversion to their rightful civilian status with careful regard for their educational and occupational adjustments and their related social and emotional problems. Hundreds of thousands of these young men were disabled as a result of their military service and after returning to civilian life needed some type of rehabilitation training to assist them in becoming useful members of society.

As a means of assisting disabled veterans in their vocational adjustment, on March 24, 1943, the 78th Congress of the United States enacted Public Law 16. This law provided vocational training for veterans having service-connected disabilities that caused a vocational handicap of such a nature that training was required to restore employability lost by reason of the handicap (35:1). By the end of 1949, slightly over 355,000 disabled veterans had entered and terminated a course of training under this law (45:5). Approximately two-fifths of these veterans completed their training and were considered rehabilitated by the Veterans Administration. The remaining three-fifths terminated their training before completion and were classified as discontinued cases (45:7).

In order that disabled veterans in need of vocational rehabilitation training would possess adequate information about various occupations and to enable them to understand their own assets and limitations with reference to the choice of an occupational objective, counseling prior to the inauguration of training was made mandatory. This counseling was provided at university counseling centers operating under a contract with the Veterans Administration or at guidance centers staffed and operated by VA personnel. To secure some degree of uniformity in the counseling, a series of standardized forms was provided for use in each counseling case and rather well-defined counseling procedures were outlined.

The very fact that over one-half of the disabled veterans who started a course of training did not finish it, even though it was determined that training was medically feasible and needed in each individual case and counseling was provided, raises serious questions about the adequacy of the Veterans Administration rehabilitation program. The present study has evolved from some of the questions presented by this situation. Why did so many veterans drop out of training? Have those veterans who completed their training achieved a better vocational adjustment than those who abandoned their training before completion? Were some of the major factors considered in the counseling of these veterans unrelated to successful pursuit of the training program?

Increasing concern has been expressed about the large number of veterans who have started and not completed a course of rehabilitation training. If the time spent in a rehabilitation program fails to benefit the disabled veteran, the loss to the taxpayers in terms of

dollars and cents is very substantial. Possibly of even greater importance is the effect this failure to obtain a goal may have upon the individual concerned. It is certainly not unreasonable to assume that failure in the serious task of equipping himself with vocational skills needed to overcome the limitations imposed by a disability may produce frustrations that adversely affect the personality structure of the handicapped person. Thus, systematic investigation of various aspects of this problem would appear to be important.

Statement of the Problem

The present study was confined to an investigation of the counseling and rehabilitation training of disabled veterans in terminal business education. It was primarily concerned with two related problems. The first problem concerned the relationship of successful completion of terminal business training to some of the variables considered important in the counseling of disabled veterans for such a program. The second problem concerned the relative vocational adjustment of veterans who completed and veterans who failed to complete a prescribed course of business education.

Only male, white veterans rated a 50 percent or more disabled who entered a course of training in a terminal business school between January 1, 1946 and December 31, 1949 and who were residing in the Detroit Metropolitan area were considered in this study. Disabled veterans who trained in colleges, on the job, or in other types of terminal schools were excluded from the study.

Two sets of hypotheses evolved from the problems as stated and hence were tested in this study. The first series of hypotheses postulated that the objective variables employed in the counseling of disabled veterans would discriminate between successful and unsuccessful trainees. The second series of hypotheses postulated that completion of the specific disabled veterans' training program under investigation was significantly related to subsequent vocational adjustment.

In connection with the first premise, the following hypotheses were set up:

1. There is a relationship between age and completion of training.
2. There is a relationship between high school graduation and completion of training.
3. There is a relationship between the presence or absence of dependent children and completion of training.
4. There is a relationship between the type of disability and completion of training.
5. There is a relationship between the seriousness of the disability and completion of training.
6. There is a relationship between father's occupation and completion of training.
7. There is a relationship between related employment experience and completion of training.
8. There is a relationship between scores on tests of intelligence and completion of training.

9. There is a relationship between scores on the Minnesota Clerical Test and completion of training.

10. There is a relationship between scores on the Kuder Preference Record, Vocational, and completion of training.

In connection with the second premise, the following hypotheses were established:

1. There is a relationship between reported earnings and completion of training.

2. There is a relationship between expressed job satisfaction and completion of training.

Need for the Study

All of the counseling variables employed in this study are considered in the vocational advisement of disabled veterans. It has been assumed that these factors are useful in the counseling situation. However, there is little experimental evidence to support the validity of these variables in counseling with handicapped persons. There is a need for verification of the discriminating value of these variables in the selection of successes and the elimination of failures in rehabilitation training.

In addition, the assumption has been made that completion of a course of vocational rehabilitation will result in a more adequate vocational adjustment than would have prevailed without the training. The expenditure of considerable public funds has been based on this belief. Again, there is little objective evidence to support this assumption. Investigation of the value of rehabilitation training is needed.

A substantial number of persons in the United States are disabled to a degree that their work efficiency is impaired. It has been estimated that one in every seven of the male working population is disabled to the point of needing special assistance in employment (5:3).

To meet the needs of the handicapped steps have been taken to expand vocational rehabilitation services to encompass more segments of the population. The 84th Congress without a dissenting vote passed Public Law 565, which provides greatly expanded rehabilitation services including the establishment of publicly financed rehabilitation centers and sheltered workshops (2:1).

The benefits to disabled veterans accorded by Public Law 16 have been extended to individuals who have incurred a disability on or after June 27, 1950 while on active duty with the armed forces. In addition, a program to provide counseling and rehabilitation services to veterans incapacitated by non-service connected disabilities is now being established in Veterans Administration hospitals throughout the nation.

It is apparent from the foregoing that vocational rehabilitation is going to be a continuing responsibility of democractic government and is going to be enlarged in scope. All of these programs provide for counseling of the handicapped. Therefore, evaluation of the predictive value of the variables considered in this counseling and of the outcome of vocational rehabilitation becomes increasingly important.

Limitations and Scope of the Study

All disabled veterans meeting the established limitations were included as subjects for investigation in this study. It is evident

that this sample may not be representative of a universe consisting of all the disabled veterans in the United States who embarked upon a course of terminal business training. Sub-cultural differences in other geographical regions probably do exist, and these differences might alter the composition of a sample drawn from another geographical area.

Secondly, the disabled veterans who responded to the mailed questionnaire may not be representative of the entire group queried. It is possible that the respondents consist of the disabled veterans who have made the best vocational adjustment. It is conceivable that veterans dissatisfied with their vocational progress may feel some reluctance to respond to a mailed questionnaire.

In addition to the possible lack of representativeness of the response group, the limitations inherent in the questionnaire instrument itself are applicable to a part of this study. Some of these limitations include the difficulty of validating the instrument, the difficulty in securing the cooperation of the respondents, the possibility of biased returns, the limitations in the number and kinds of questions that can be asked, and the possibility that the respondent will be operating in a different frame of reference from that of the investigator.

The selection of adequate criteria invariably constitutes a limitation on research conducted in the area of the social sciences. Two criteria are utilized in this study and both have drawbacks which impose limitations on the investigation. Completion or non-completion of a business course has been selected as a criterion of success in

training. The principal weakness of this criterion is that so many factors external to those under investigation can affect completion or discontinuance of the course of training.

One of the principal factors not evaluated in this study that may have an important bearing on completion or non-completion of a course of training is motivation. Individuals have within themselves drives that are difficult to assess. It is generally known that these intangibles are often important factors in the attainment of goals. The assumption has been made in this study that motivation is related to the objective variables considered, but this assumption is not scientifically demonstrable. In addition, ability to complete a training sequence may depend in part upon changes in standards from one time to another or from school to school.

Many criteria have been used in the evaluation of vocational success. These include self-ratings of job satisfaction, earnings, obtaining employment in a given field, promotions, discharge from employment, and supervisors ratings. All of these in the final analysis involve judgments of one type or another and thus are subject to the personal biases and human inconsistencies inherent in judgments. Unfortunately, there is available no criterion which will eliminate personal inconsistencies and provide a perfectly valid measure of vocational success. Of the possible criteria available, earnings appeared to be the most pertinent and was thus selected as one criterion of vocational success. The other criterion, expressed job satisfaction, was selected because it takes into account another

aspect of vocational success, namely, the feelings and attitudes the worker has towards his employment.

Definition of Terms

Like many organizations concerned with specialized and often technical procedures, the Rehabilitation and Education Division of the Veterans Administration has adapted many general terms to their own situation. To insure understanding on the part of the reader, definitions of some terms as utilized in this study are supplied here.

1. Vocational Rehabilitation. In its modern sense, vocational rehabilitation means the restoration of the capacity to earn a living that has been lost or impaired by reason of an injury or illness. It is usually accomplished either by selective job placement or re-training to provide new work skills for the handicapped individual. In the Veterans Administration program, vocational rehabilitation is almost always accomplished through training.

2. Rehabilitated. A disabled veteran is classified as rehabilitated when he has successfully completed a prescribed course of training and is considered to be employable in a regularly practiced occupation as a result of this training.

3. Discontinued. If a disabled veteran withdraws from a training program, either voluntarily or because of action initiated by the Veterans Administration, and no definite plan is made for his re-entrance within a reasonable time, he is placed in a discontinued status.

4. Terminal. All school training other than that leading to a

college degree is classified as terminal training by the Veterans Administration. This would include courses offered in private business colleges that do not award a regular degree and courses offered in trade or technical schools.

5. Employment objective. Before a veteran can be inducted into training under Public Law 16, he must select, with the assistance and approval of his counselor, a definite occupational goal obtainable through training. This is classified as his employment objective.

Plan of Organization

Chapter II contains a brief history of vocational rehabilitation and a review of research findings pertinent to the present study. Chapter III describes the sample and its selection, the specific variables selected for investigation, and the methods employed in gathering and analyzing the data. In Chapter IV, the data are presented in tabular form and described. The counseling variables are statistically analyzed and the appropriate hypotheses are experimentally tested in Chapter V. In Chapter VI, the data related to vocational success are analyzed and appropriate hypotheses are tested. In addition, the reasons for discontinuance of training are reviewed critically. Chapter VII summarizes the findings and conclusions and their implications for further research.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

As stated in Chapter I, the principal purposes of the present study were to determine the counseling variables that are most significantly related to successful pursuit of business school training for a selected group of disabled veterans and to evaluate the vocational adjustment made by these veterans since the conclusion of their training. In order to review adequately the research findings related to this study, it has been necessary to trace the development of the Veterans Administration rehabilitation program and to examine pertinent investigations in three areas of research. The first part of this chapter provides a historical sketch of rehabilitation activities. The second part summarizes research findings that pertain to the training accomplishments of counseled veterans. In the third part of the chapter, research findings in the prediction of success in business training are discussed. Finally, research in the area of vocational success after business training is presented.

Historical Background of Vocational Rehabilitation

Rehabilitation of the handicapped is a relatively new concept in society. For many hundreds of years, treatment of individuals afflicted with physical and mental disorders consisted entirely of

incarceration in institutions designed to provide custodial care only. With the development of medical knowledge in the 18th and 19th centuries, sporadic attempts were made to effect restoration of physical facilities lost through disease and injuries. However, it was not until after the turn of the present century that rehabilitation became accepted as a responsibility of society.

As a result of civilian and military experience, rehabilitation has acquired new connotations in recent years. It has come to be regarded as a creative process in which the physical, mental, and vocational abilities of the individual are improved to the point where he can compete successfully with so-called non-handicapped individuals (21:15). It is conceived as the maximum restoration of physical facilities achievable by modern medical and scientific knowledge followed by the relocation of the individual in an acceptable place in society. Surgery, physical therapy, occupational therapy, counseling, training, and job placement are all a part of todays rehabilitation procedure.

The importance of the vocational aspects of rehabilitation was not recognized until some time after the need for medical treatment of the handicapped had gained some acceptance. The first organized attempt in this country to provide vocational training for the physically handicapped was made by the Industrial School for Crippled and Deformed Children, which opened in Boston in 1893 (19:22). Following this a few scattered school systems made attempts to provide special vocational training for their physically handicapped children. No real attempt was made to provide vocational training for physically handicapped adults until 1917, when the American Red Cross established in New York

the Red Cross Institute for Crippled and Disabled Men (21:225). On June 27 of the following year, Congress passed the Smith-Sears Vocational Rehabilitation Act which allotted funds for the vocational training and return to civil employment of disabled veterans of World War I. Two years later, the Fess-Kenyon Civilian Vocational Rehabilitation Act was passed. This law provided Federal funds, to be matched by state funds, for the vocational rehabilitation of persons injured in industry or otherwise and their return to employment (19:43). Public laws 16 and 113, both enacted in 1943, provided expanded rehabilitation services for disabled veterans and civilians respectively.

Because this study is primarily concerned with the rehabilitation of disabled veterans, a report on the magnitude of World War I and World War II programs is pertinent. Records maintained by the Veterans Administration indicate that by 1928, when training terminated for World War I veterans, 179,519 veterans had participated in the program. Out of this number 128,747 satisfactorily completed their course of rehabilitation at a cost of 645 million dollars. Forty percent trained for jobs in industry, sixteen percent for the professions, thirteen percent each for agriculture, clerical work, and trades (21:72). Complete information about the vocational rehabilitation program of World War II is not yet available as the program is still in operation as of this date. The most recent figures available indicate that as of November 30, 1952, almost 595 thousand disabled veterans had pursued training under Public Law 16 since the inception of the program in March, 1943. Of this group, 35 percent were training for professional and managerial positions, 40 percent for jobs in industry, 12 percent for agriculture,

11 percent for clerical and sales work, and 2 percent in service occupations (47).

Training of Counseled Veterans: Research Findings

Waln (48) made a study of 10,653 disabled veterans who had entered training under Public Law 16 to determine the conditions under which veterans drop out of training. Records from the Veterans Administration regional offices in 36 states were reviewed. It was found that the probability that a disabled veteran would complete his training was inversely related to his age at the time of beginning training and directly related to his educational attainment prior to the commencement of training. The investigator also found that the majority of veterans who did not complete their course dropped out of training during the first six months and that veterans who were pursuing some type of on-the-job training tended to drop out of training with a higher degree of frequency than those who were pursuing institutional training. Veterans in receipt of disability compensation of 80 percent or more tended to discontinue their training more frequently than did those with lesser disability ratings. Veterans with respiratory ailments discontinued their training more often than did veterans with other types of disabilities. Unsatisfactory progress in training was the most prevelent single factor in causing dropouts. The majority of veterans who failed to complete their course of training found employment in some occupation unrelated to the one for which they were training.

A survey based on a 79 percent sample of all veterans who entered training under Public Law 16 prior to April 30, 1947, was made by the Veterans Administration central office staff and reported in an Information Bulletin (46). It was determined that there were no significant differences between disabled veterans in training and disabled veterans in a terminated status with respect to age, sex, and educational level at the time of entrance into training. Veterans with disability ratings of 30 percent or more, veterans classified as having neuropsychiatric disabilities, disabled negro veterans, and disabled veterans with no dependents constituted a larger portion of those in a terminated status than those still in training.

Lipsett and Smith (26) randomly selected the cases of 200 disabled veterans who had received counseling at the Rochester Institute of Technology prior to May 1, 1946 and investigated the progress these veterans had made in training as of December 1, 1946. They discovered that 40 percent of the veterans comprising this sample were no longer in training for the occupational objective selected at the time of counseling. Veterans with neuropsychiatric disabilities who constituted 35.5 percent of the sample persisted in the pursuit of their objective in almost the same ratio as did veterans rated for other types of disabilities. Veterans who entered training in the same occupational field that they had listed as their choice prior to counseling remained in training with a significantly higher degree of persistency than did those veterans who made a change in their choice as a result of counseling.

Brown (8) attempted to contact all of the veterans (disabled and non-disabled) counseled at the University of Pennsylvania Guidance

Center during April, May, and June of 1945. Replies were received from 297 veterans constituting 59 percent of the total group. Almost all of the veterans who replied were disabled. Of the counseled veterans who had started a course of training, 74 percent were still in training after a period of one year but 19 percent had made a change in the type of training they were pursuing. Twenty-six percent dropped out of training entirely. Veterans with neuropsychiatric disabilities included in the response group either dropped out of training or changed their field of training with a significantly higher degree of frequency than did veterans with all other types of disabilities.

In a second follow-up, Brown (9) contacted the same group of veterans approximately two years after their counseling. Of the 53.5 percent who responded, almost one-half (48 percent) were still in training for the same occupational objective they had selected at the time of counseling or had completed their training for that objective. Twenty three veterans, or 9 percent of the response group, had discontinued their training after successfully completing at least one year. Of the total number of veterans responding, 22 percent were still in training but for a different occupational objective than the one selected at the time of counseling, 17 percent had dropped out of training entirely, and 13 percent had not started any type of training.

Ward (49) made a follow-up study of 622 disabled veterans who had entered trade and technical schools above the secondary level in the New England area. Twenty-nine percent of this group had dropped out of training after an unspecified time. The highest incidence of drop-outs incurred in business and mechanical courses. An appraisal of the

counseling records led the author to conclude that a better selection of tests and a more adequate interpretation of them might have avoided unsuitable occupational choices in a significant number of cases.

In the attempt to define occupational aptitude patterns, Barnette (4) sent a questionnaire form to 1,375 veterans who had been counseled at the Vocational Service Center of the New York City Y.M.C.A. Replies were received from 890 veterans, approximately 65 percent of the group queried. Respondents were divided into a "success" and a "failure" group on the basis of their persistence in training and their expressed satisfaction with their course of training or their job. It was found that the "success" group was significantly younger, had a significantly higher educational background, and demonstrated significantly higher clerical aptitude compared to the "failure" group. All of these differences were significant at the 1 percent level of confidence.

The author attempted to establish test patterns that would be predictive of success in various occupations. Ninety-four veterans had engaged in training for clerical positions. Of the five tests considered, only the Clerical Aptitude Test significantly differentiated between the "success" and "failure" group. However, when this group was further subdivided into general and specialized clerical functions, significant differences were obtained on the mechanical and clerical scales of the Kuder Preference Record and on the Quanitative Scale of the American Council of Education Psychological Test for the general group.

The interest of investigators in the training progress of veterans whose disabilities have been diagnosed as neuropsychiatric in nature

has been reflected in some of the studies reviewed here. Two researchers have devoted their attention exclusively to this problem. Sprol (37) conducted a study of two groups of veterans who entered some type of on-the-job training in the Baltimore, Maryland area between July 1, 1946 and September 1, 1947. One group consisted of veterans with neuropsychiatric disabilities, the other of veterans with other types of disabilities. There were 106 veterans in each group, and the groups were equated for the variables of age, percent of disability, dependency status, and educational background. The investigator found that a significantly larger number of veterans with neuropsychiatric disabilities dropped out of training than did veterans with other types of disabilities. He also discovered that a significantly greater number of veterans with neuropsychiatric disabilities had some kind of difficulty in their training or were referred for a change of their training objective because of their dissatisfaction with the training situation.

Schmid (34) made a follow-up study of 83 veterans with neuropsychiatric disabilities and 50 randomly selected veterans without neuropsychiatric disabilities who entered Michigan State College in the fall of 1946. The two groups were found to be equivalent in intelligence as measured by ACE scores. No statistically significant differences in grade point averages at the end of the first school year were found for the two groups. The author concluded that a neuropsychiatric disability did not preclude satisfactory college achievement.

While the findings of these research studies cannot in any way be considered conclusive, certain tenable hypotheses about the government sponsored training programs for veterans can be drawn from them. It

appears that from 30 percent to 40 percent of the veterans who enter some course of training drop out within the first two years. Veterans pursuing a college course are least likely to terminate their training short of completion, while veterans following some type of on-the-job training are most likely to discontinue their training before it is completed. Age and amount of previous schooling seem to be important factors, with younger veterans and veterans with higher educational backgrounds being generally more successful in training. Other factors such as scores on standardized tests and seriousness of the disability were not reported in enough studies to permit any generalizations about their importance in training.

Findings pertaining to the success in training of veterans with neuropsychiatric disabilities are inconclusive. Three of the studies considering this matter reported that veterans with this type of disability compared unfavorably with veterans having other kinds of disabilities; two studies found that veterans with neuropsychiatric disabilities were just as successful in training as other veterans. Differences in training situations, in carefulness of the medical evaluation of feasibility for training, and in degree of impairment of function may account for these varying reports.

Research in the Prediction of Success in Business Training

Considerable research has been reported on the predictive value of certain variables in the selection of clerical workers. These studies, however, are not directly related to the present investigation. Reported research on variables useful in the prediction of success in

training for clerical positions is more limited. Most of the studies of this nature have been confined to the value of standardized tests in the prediction of success in one specified course. Comprehensive research exploring the possible value of a multitude of factors in a diversified business course are woefully lacking.

Some investigations report the predictive value of a test or tests in one high school commercial subject. Vaura (44) found a significant relationship between scores on a clerical aptitude test and success in a typing course as measured by end-of-course grades. However, Stedman (38) could discover no significant relationships between any one of five tests administered at the beginning of a course in typewriting and scores on the Blackstone Proficiency Test in Typing given at the conclusion of the course. A non-standardized test in arithmetic fundamentals correlated with the criterion to the greatest extent of any of the tests used. In another study the same author (39) administered the Terman Group Test of Mental Ability, the Thurstone Clerical Test, and a test of arithmetic fundamentals to two groups of high school students enrolled in beginning classes in bookkeeping. He found that all of the tests demonstrated significant correlations with two criteria: (1) a standardized bookkeeping achievement test administered at the end of the semester, (2) end-of-course grades in bookkeeping.

Research studies on the value of tests for prediction in the training of adults for specialized clerical tasks have also been reported. Taylor (42) administered a battery of tests measuring such traits as clerical speed, vocabulary knowledge, arithmetic ability, and spatial relations aptitude to 303 soldiers that had been selected

for a course in the operation of IBM punch card equipment. The criteria consisted of both numerical and letter grades given the students upon completion of the course. It was found that the selection of operators could be improved by the use of this test battery to the extent that 70 percent of the trainees so selected would do better than the average unselected trainee. Correlations of the various tests with the criteria ranged from .42 to .58. Bills (6) administered intelligence, clerical aptitude, and personality tests to 139 adult students pursuing evening courses in stenography and comptometry and found that cut off scores could be established which would eliminate the majority of those who failed the course and accept the majority of successful students.

The Minnesota Clerical Test was administered to 89 inmates of the Minnesota State Reformatory for Men by Hales (17). These men were attending the prison school in preparation for assignment to clerical positions within the institution. Correlation coefficients between test scores and instructors grades were computed by the rank-order method. Obtained coefficients ranged from .867 to .622. The statistical significance of these correlation coefficients were not reported but all appear to be highly significant.

Gottsdanker (16) found that tests of arithmetic computation and clerical speed had predictive value in learning machine calculation. Martin (29) also found that a short test consisting of comparison of sets of digits correlated highly with performance after a period of training in the operation of the Burroughs Adding Machine.

A few studies of the use of tests for prediction of success in more general commercial courses have been reported. Klugman (22), in the fall of 1939, administered a battery of tests to all the newly enrolled students in the commercial curriculum of the Mostbaum Vocational High School, Philadelphia, and followed up these students until their graduation date. The criterion employed was graduation or non-graduation from the three year course, with approximately one-third of these students graduating. Age and verbal intelligence were found to be the most differentiating traits; younger students and those with higher intelligence test scores were more apt to graduate. Differences between graduates and non-graduates in these traits were significant at the 1 percent level of confidence, with critical ratios of 3.44 and 3.11 respectively.

In another study by Gibson (14), the General Aptitude Test Battery (GATB) was administered to all students in the school of business administration at Indiana University. None of the aptitude scores on the GATB correlated high enough with scholastic credit point ratios to be considered useful in prediction. However, students majoring in accounting and business statistics had significantly higher mean scores on the N (numerical aptitude) and G (intelligence) scales of the GATB than the mean scores of all students majoring in business administration. Students majoring in business education and secretarial training had significantly higher mean scores for Q (clerical perception), A (eye-hand coordination) and T (motor speed).

From the foregoing research reports, it would appear that tests of intelligence, clerical aptitude, and arithmetic computation do have some

value in predicting success in various types of business training. This conclusion must be tempered by the possibility that many research projects that result in negative findings are not reported in published form. Studies reporting the usefulness of biographical data in the prediction of success in this type of training are not to be found.

Research in the Evaluation of Business Training

As far as can be determined, no research has been conducted relative to the results of training in terminal business schools. However, follow-up studies have been made of the graduates of commercial courses in public secondary schools and of business administration majors in college.

Many of the studies have been centered on the graduates of one school. A few have attempted evaluation on a state-wide basis but none have been more comprehensive than this. Some of the findings are pertinent to the present study and are reported here.

Most of the follow-up studies of high school graduates who have followed a commercial curriculum indicate that the majority of these graduates are still employed in some type of clerical occupation. Tabb (41), in a questionnaire survey of the business education graduates of the Ahrens Trade High School, Louisville, Kentucky, made in May, 1951, found that 71 percent of the 1948 graduates, 73 percent of the 1949 graduates, and 93 percent of the 1950 graduates were still employed as office workers. Lomax (27) reported that 68.7 percent of the 1949-1950 business education graduates of New Jersey high schools were employed in some type of business occupation approximately one

year after graduation. Bond (7) and Park (33) reported that 65 percent and 71 percent of the business education graduates in two widely separated, medium sized high schools were employed in occupations related to their training from one to six years after graduation. All of the studies indicate that attrition in the field was due mainly to withdrawal from the labor market because of marriage or pursuit of more advanced academic training rather than to employment in other fields.

Some investigators have attempted to secure objective measurement of performance on the job in order to relate preparatory factors to these measurements. Krauth (23) secured performance ratings from a number of employers of business education graduates of an Iowa high school. He found a significant relationship between school grades in typing and shorthand and performance on the job. Grades in other business subjects did not demonstrate a significant relationship to job performance as measured by the ratings of employers. Also, scores made on intelligence tests by students in their first and second years of high school had no significant relationship to their performance on the job. Austin (3) surveyed the earnings of business graduates of Washington Technical High School, St. Louis, Missouri. He found that the graduates who had superior academic records in business subjects almost universally reported higher earnings than did those graduates with average high school grades. Jepsen (20), however, found no relationship between the grades received by 797 male graduates of Fresno State College, California, and income in any specific occupation, including accounting and related business fields.

Latham (25) conducted a comprehensive questionnaire survey of 1,600 high school graduates from ten Pittsburg high schools one year after their graduation. He utilized the expressed job satisfaction of the graduates and ratings by employers as criteria of vocational success. A significant relationship was found between job satisfaction and the extent of agreement of the job to the previous vocational plan of the graduates. However, no significant relationships were discovered between aptitude for the job (as measured by a battery of tests administered to the group while they were seniors in high school) and stated job satisfaction, between aptitude for the job and ratings of employers, or between the proximity of the job to the planned one and employers' ratings.

These limited research reports indicate that high school students who major in business subjects find their training to be useful occupationally as evidenced by their tendency to find and keep jobs in this field of work. There appears to be a relationship between performance in school and performance on the job in this field. Securing a job closely related to the one planned in school seems to result in a higher degree of job satisfaction.

Summary

In this chapter, the historical development of vocational rehabilitation has been presented and research in three areas related to the present study has been reviewed. These areas encompass veterans' training, prediction of success in business training, and evaluation of the outcomes of this particular vocational preparation. On the

basis of these research reports, it would appear that age, educational background, and scores on certain types of tests have some predictive value in estimating success in business school training. It also seems that individuals who complete training of this type with good records make an adequate vocational adjustment.

An extensive survey of the literature has failed to disclose any research devoted exclusively to the usefulness of business school training for disabled adults. In the pages that follow, the investigation of this problem is reported.

CHAPTER III

PROCEDURE AND METHODOLOGY

In this chapter the sample and its selection, the rationale underlying the specific variables selected for study, and the methods employed in gathering and analyzing the data are described.

The Sample

The subjects selected for study were seriously disabled veterans who were residing in the Detroit metropolitan area, and who entered a course of training under Public Law 16 in a terminal business school at some date subsequent to January 1, 1946 but prior to December 31, 1949. Veterans rated as less than 50 percent disabled and female and non-white veterans have been excluded from this study. The number of subjects totaled 159.

The delimitations of the sample in this study were made after careful consideration. The decision to limit the sample to disabled veterans who had trained at a terminal business college was reached for several reasons. In the first place, the curricula offered by these schools and the work standards established by them are relatively uniform throughout the nation (32). Thus, the disparity between schools and curricula, frequently a source of difficulty in attempts at evaluation, was reduced to a minimum. Secondly, the types of occupations for which these schools prepare their students would

appear on an a priori basis to be exceptionally well suited to many physically handicapped persons. The physical requirements of most clerical positions are very moderate; in particular, these positions are among the few that do not demand a considerable amount of standing. Hanover (18), Kessler (21), and Lumsden (28) are among the researchers who have found business training to be beneficial to handicapped persons. In the third place, no research based solely upon the results of business school training for disabled veterans has been attempted.

The study was limited to veterans rated as 50 percent or more disabled because it was felt that the severity of the disability in these cases almost uniformly constituted a genuine vocational handicap. Precedent for this decision was established by Public Law 877, 80th Congress, which provided additional compensation for veterans who were rated as 50 percent or more disabled and who had one or more dependents. Female and non-white veterans were eliminated from the study to reduce biases which might distort results in an initial investigation of this type. The period of 1946 to 1949 inclusive was selected because the vast majority of World War II veterans initiated their training during this period and because sufficient time had elapsed to permit evaluation of the results of the training accorded these veterans. The sample was limited to veterans residing in the Detroit metropolitan area to insure homogeneity in such employment factors as wage rates and working conditions, which are subject to wide regional differences (10).

Sources of Data

Much of the material utilized in this study was secured from records on file in the Veterans Administration Detroit Regional Office. Data on the veteran's disability, age, education, dependents, father's occupation, employment experience, test scores, and progress in training were secured from these records. The principal sources of information were as follows:

1. Application blank (VA Form 1900)
2. Veteran's Medical Case File
3. Counseling records (VA Form 1902 series)
4. Training progress reports (VA Form 1902D)

Information about the veteran's current work adjustment and his attitude towards his training was secured from a questionnaire mailed to all veterans constituting the sample. The preliminary form of the questionnaire was constructed after a number of conferences with Veterans Administration counselors, VA training officers, and veterans who had taken training under Public Law 16. The questionnaire form as originally devised was then pre-tested on a small group of disabled veterans, none of whom were included in the sample population of this study. Each of these veterans was contacted by telephone and the purpose of the contact was explained. Questionnaire forms were mailed to those veterans who indicated their willingness to cooperate. After the forms were returned, each veteran was again contacted and comments about the clarity of the items and suggestions for improvement were solicited. As a result of this pre-testing, one of the questions

originally included was omitted from the final questionnaire form and several items were re-written for added clarity. The revised questionnaire form mailed to the sample population is included as Appendix A.

Selection and Classification of the Variables

Public Law 16 makes it mandatory for all disabled veterans to have counseling prior to their entrance into training under this law. As a guide to the counselors of disabled veterans and to insure uniformity of counseling procedures on a nation-wide basis, the Veterans Administration has provided a series of forms that must be utilized by counseling personnel. On these forms is recorded pertinent information that is to be used by the counselor in his efforts to assist the veteran to select an appropriate occupational objective. The factors selected for this study were considered to be the most important ones utilized by the counselors of disabled veterans. The rationale for the selection of the respective variables included for study follows.

In vocational counseling with adults, the age of the counselee is presumed to be an important consideration in the selection of an occupational objective. If a period of formal training is required for the attainment of the objective, the age of the prospective trainee may have relationship to his completion or non-completion of the course. On the one hand, older individuals may be more apt to realize the importance of training and thus devote their full energies to the completion of the course. Or, conversely, older individuals may lack the resiliency of younger persons and may become more easily discouraged

in a formal training situation. This is a very practical question and one which this study attempted to answer on a limited scale.

School attendance for adults usually entails financial sacrifices on their part, assuming that the training is an alternate choice of employment. Married adults with one or more dependent children may be forced to terminate their schooling prior to completion with greater frequency than single adults or married childless adults. In addition, it is conceivable that veterans with children may find it more difficult to devote proper time to study because of distractions at home. For these reasons, the number of dependents of a veteran was deemed to be an important factor for consideration.

The extent and the nature of a veteran's disablement may affect his persistence in a training program. It could be assumed that the greater the impairment of normal functioning, the higher will be the motivation for completing the training. On the other hand, more seriously disabled veterans may become discouraged in their attempt to acquire skills leading to gainful employment and may fall back on government compensation for financial support. Too, veterans with a certain type of disability may be more prone to abandon their attempt at training than will veterans with another type of disability. In particular, there has been considerable speculation regarding the ability of veterans with severe neuropsychiatric disabilities to complete a training program. The degree and the type of disability were therefore selected as factors for investigation.

Private business schools generally require high school graduation as a basis for admission. However, most have waived this requirement for veterans while still purporting the desirability of a sound high school preparation. Many of the disabled veterans who entered terminal business schools in the Detroit area did not have a high school education. One of the problems of this study was to determine if veterans without this educational background terminated their business school training with a greater degree of frequency than did those who possessed the desired academic preparation.

Another important item in this study is that of father's occupation. It is now fairly well established that the father's occupation is the best single index of the family's social, economic, and cultural background (15). In a society that is becoming more stratified, it becomes increasingly important for the researcher to investigate the relationship of family background to the establishment and achievement of goals. Thus, the relative level of father's occupation in the two groups of veterans was included as a factor for investigation.

The choice of vocation made by the individual is the result of a multitude of experiences. One of the most influential of these, especially for the adult, is his experience in vocational activity. Many of the veterans who engage in rehabilitation training have had previous work experience. Some have had experience directly related to the type of training program which they later entered. Veterans with this related experience may have a more complete realization of

the vicissitudes of training and hence may be more apt to carry it through to completion. To test this assumption, the factor of related employment experiences was included in the study.

Standardized tests are almost always used by counselors associated with the Veterans Administration rehabilitation program. The results of these tests are utilized along with other pertinent data in assisting the veteran to select an appropriate employment objective and training program. Despite their extended use, little is known about the predictive value of tests for a terminal business school program; most standardized tests have been studied in relation to their usefulness in college and high school only. Therefore, scores made by veterans on tests of intelligence, a test of clerical aptitude, and an interest inventory have been included as factors in this study.

By way of summary the information utilized in the study can be classified into four major divisions:

I. Biographical Data

A. Age

B. Number of dependents

C. Educational level

D. Father's occupation

II. Data on the Handicap

A. Type of disability

B. Disability rating in percentages

III. Occupational Factors

A. Related work experience before training

B. Relationship of current employment to training

C. Expressed satisfaction with present job

D. Earnings

E. Contribution of training to employment

IV. Test Scores

A. Intelligence test scores

B. Interest test scores

C. Clerical aptitude test scores

Procedures Used in Securing and Analyzing the Data

A list of veterans who had entered training under Public Law 16 and who met the qualifications established for this study was secured from the IBM records section in the Detroit regional office. The training sub folder and the medical case file of each veteran on this list were then obtained from the storage files and pertinent information was extracted from these records. A total of 159 suitable subjects was available. Of these, 104 were rehabilitated cases and 55 were discontinued cases.

The current address of each of these veterans was then obtained from the "pay card" maintained by the Finance Division. A questionnaire form together with an explanatory letter[1] and a stamped, self-

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[1] See Appendix B

addressed envelope were mailed to each of these veterans during the first week in August, 1954. Sixty returns, constituting 38 percent of the sample, were received from this first mailing. One form was returned as non-deliverable because the veteran had moved and left no forwarding address.

Approximately one month after the questionnaires were dispatched, all non-respondents were sent a follow-up, double postcard[1] emphasing the importance of the study and providing opportunity for the recipient to indicate his intention to return the questionnaire, his desire for another questionnaire form, or his unwillingness to participate in the study. As a result of this procedure, 15 additional forms were received to make a cumulative return of 47 percent. Three veterans indicated their unwillingness to complete and return the questionnaires.

Two weeks after the follow-up postcards were mailed, telephone calls were made to all non-respondents listed in the Detroit and suburban telephone directories. As a result of these telephone contacts, 26 additional forms were received to make a cumulative total of 101 forms, or 64 percent of the sample.

Sixty-seven questionnaire forms were returned from veterans rehabilitated through their training and 34 forms were returned by veterans discontinued prior to completion of training. This constituted 65 percent and 62 percent of the total of each respective

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[1] See Appendix C

sub-group. Obviously, the difference in percentage of response from veterans who completed their training and those who did not was very small. Therefore, the sampling was proportionally representative of the two sub-groups.

Information obtained from the case records and from the questionnaire forms was then punched on IBM cards in accordance with a prearranged code. Each card was checked to avoid the possibility of error. Frequency distributions were then computed to form the basis for statistical analysis.

To test the hypotheses constituting the problem under investigation, tests of significance of difference in the two groups were employed. Inspection of the data indicated that the standard error of the difference in means technique (critical ratio) could be employed with the variables of age, scores on the Number Comparison and Name Comparison sections of the Minnesota Clerical Test, and all nine scales of the Kuder Preference Record. These critical ratios were calculated by means of the formula $CR = \frac{M_1 - M_2}{Dm}$ (13:199). Significance of difference between the two groups in regard to the other variables considered in this study was tested by means of chi square. The derived formula utilized for the computation of this statistic was $\chi^2 = \frac{(a\,d - b\,c)^2\,n}{(a-b)\,(c-d)\,(a-c)\,(b-d)}$ (36:198).

CHAPTER IV

STATUS OF THE SAMPLE WITH RESPECT TO THE VARIABLES STUDIED

In this chapter the characteristics of the two groups with respect to the variables studied are described. As an aid to understanding, these variables are presented in tabular form.

The ages of the disabled veterans comprising this study are revealed in Table I. The actual range in chronological age for the total group is from 20 to 58 years, with the mean age being 25.8 years. It is apparent that the distribution is skewed positively, with almost 50 percent of the group falling in the age range of 22 through 25. Veterans comprising the sample are essentially a young adult group. Rehabilitated veterans are slightly younger on the average than discontinued veterans.

The number of dependents for this group of disabled veterans is revealed in Table II. Approximately two-fifths of the total sample had no dependents at the time they started their training while about one-quarter had one dependent. The distribution of dependents is very much the same for rehabilitated and discontinued veterans.

The number of veterans included in each major disability category is listed in Table III. In the total group, veterans with orthopedic disabilities are most numerous with vision and hearing, circulatory, and miscellaneous groups being the smallest and about equal in number.

TABLE I

AGE OF DISABLED VETERANS IN REHABILITATED AND DISCONTINUED GROUPS AT TIME OF COMMENCEMENT OF TRAINING

Age in Years	Total Both Groups	% of Total	Rehabilitated Group	% of Rehabilitated	Discontinued Group	% of Discontinued
20-21	11	7.0	5	4.8	6	10.9
22-23	40	25.2	34	32.8	6	10.8
24-25	37	23.4	18	17.4	19	34.8
26-27	30	18.8	19	18.3	11	20.1
28-29	17	10.7	15	14.4	2	3.6
30-31	12	7.5	7	6.7	5	9.0
32-33	6	3.7	3	2.8	3	5.4
34 and older	6	3.7	3	2.8	3	5.4
Total	159	100.0	104	100.0	55	100.0
M (Age)	25.8		25.5		26.0	

TABLE II

NUMBER OF DEPENDENTS OF DISABLED VETERANS IN REHABILITATED AND DISCONTINUED GROUPS AT TIME OF COMMENCEMENT OF TRAINING

Number of Dependents	Total Both Groups	% of Total	Rehabilitated Group	% of Rehabilitated	Discontinued Group	% of Discontinued
0	64	40.3	42	40.4	22	40.0
1	39	24.5	26	25.0	13	23.6
2	34	21.4	23	22.1	11	20.0
3	16	10.1	9	08.8	7	12.8
4	5	03.1	3	02.8	2	03.6
5	1	00.6	1	00.9	0	-
Total	159	100.0	104	100.0	55	100.0

TABLE III

TYPES OF DISABILITIES OF VETERANS IN REHABILITATED AND DISCONTINUED GROUPS CLASSIFIED ACCORDING TO MAJOR CATEGORIES*

Category	Total Both Groups	% of Total	Rehabilitated Group	% of Rehabilitated	Discontinued Group	% of Discontinued
Orthopedic	38	23.8	31	29.7	7	12.8
Wounds	26	16.4	14	13.5	12	21.7
Respiratory	23	14.5	16	15.4	7	12.8
Neuro-psychiatric	24	15.1	10	09.6	14	25.5
Vision and Hearing	16	10.1	10	09.6	6	10.9
Circulatory	17	10.7	11	10.6	6	10.9
Others	15	09.4	12	11.6	3	05.4
Total	159	100.0	104	100.0	55	100.0

* An explanation of the classification system used appears to be desirable. Orthopedic disabilities consist of a leg or arm amputation or a complete loss of function of at least one limb. A disability is classified as a wound when a bullet or shell fragment penetration has resulted in damage to a nerve or muscle. Respiratory ailments are primarily tuberculosis and asthma. Neuropsychiatric disabilities include psychoneurosis, psychosis, and epilepsy. Impairment of vision or hearing is partial in most cases, complete in a few. Circulatory disabilities are those involving mal-function of the heart or its blood vessels. Disabilities which occur infrequently are grouped in a miscellaneous classification.

Veterans with neuropsychiatric disabilities constitute about one-quarter of the discontinued group and only about one-tenth of the rehabilitated group. There is also a disproportionate representation of veterans with wound disabilities in the discontinued group. On the other hand, veterans with orthopedic disabilities make up almost 30 percent of the rehabilitated group and less than 13 percent of the discontinued group. Veterans with other types of disabilities appear to be fairly well balanced between the two groups.

In Table IV the number of veterans in each assigned rating group is shown. The distribution reveals a gradual decrease in the number in each rating group from 50 percent through 90 percent and a marked increase again in the number of 100 percent ratings. This is probably an artifact of the rating system and is not unexpected. The proportionate distribution of veterans in rehabilitated and discontinued statuses appears to be fairly well balanced for each rating classification.

The educational level attained by this group of veterans prior to their entrance into specialized business training is given in Table V. Over one-half of these veterans had completed high school but had had no further education. Nine veterans had finished one or more years of college; while the group is too small for comparative analysis, it is interesting to note that every one of these veterans finished their terminal business training course. Veterans with less than a high school education constitute approximately one-fourth of the rehabilitated group and almost one-half of the discontinued group.

TABLE IV

MAGNITUDE OF DISABILITY OF VETERANS IN REHABILITATED AND DISCONTINUED GROUPS ACCORDING TO PERCENT OF RATING*

Rating in Percent	Total Both Groups	% of Total	Rehabilitated Group	% of Rehabilitated	Discontinued Group	% of Discontinued
50	43	27.0	22	21.2	21	38.2
60	30	18.9	24	23.0	6	10.9
70	22	13.9	15	14.3	7	12.8
80	16	10.0	8	7.8	8	14.5
90	7	4.4	7	6.8	0	-
100	41	25.8	28	26.9	13	23.6
Total	159	100.0	104	100.0	55	100.0

* Disabilities incurred or aggravated in military service are rated by the Adjudication Division of each Veterans Administration regional office in accordance with a standardized schedule. Disability ratings are assigned in percents in multiples of ten e.g. 10 percent, 20 percent, 30 percent, etc.; the possible range encompasses zero percent to one hundred percent. Disability compensation payments are made to veterans on the basis of the disability rating, so much for each ten percent of rating.

TABLE V

EDUCATIONAL LEVEL OF DISABLED VETERANS IN REHABILITATED AND DISCONTINUED GROUPS AT TIME OF COMMENCEMENT OF TRAINING

Grades Completed	Total Both Groups	% of Total	Rehabilitated Group	% of Rehabilitated	Discontinued Group	% of Discontinued
8	4	02.5	2	01.9	2	03.6
9	14	08.8	7	06.8	7	12.8
10	22	13.9	13	12.6	9	16.4
11	15	09.4	7	06.8	8	14.5
12	95	59.7	66	63.3	29	52.7
13	3	01.9	3	02.8	0	-
14	4	02.5	4	03.9	0	-
15	2	01.3	2	01.9	0	-
Total	159	100.0	104	100.0	55	100.0

The occupational classifications of the fathers of veterans who entered a terminal business course are presented in Table VI. There appears to be little difference in the socio-economic levels of veterans in rehabilitated and discontinued groups as measured by fathers' occupation.

It is interesting to note that, excluding cases where the information is unknown, almost 70 percent of the disabled veterans in the sample come from families where the father earned his livelihood in a manual occupation. This contrasts to the approximately 40 percent of the gainfully employed adults in the nation who are engaged in occupations of this type (50). This is possibly an indication that veterans are utilizing their educational benefits in an effort to accomplish upper mobility from "blue-collared" to "white-collared" occupational status.

A test designed to measure general learning capacity was administered to all of the veterans in the group being studied. Due to the latitude permitted counselors in the selection of tests to be administered to their veteran counselees, not every disabled veteran took the same intelligence test. However, every veteran in the sample was given one of the following tests: Army General Classification Test, First Civilian Edition; American Council on Education Psychological Test for College Freshmen; California Short-Form Test of Mental Maturity, Advanced; Otis Higher Test of Mental Ability, Form D. The quartile distribution of veterans by percentages on each of these tests is shown in Table VII.

TABLE VI

FATHER'S OCCUPATION OF VETERANS IN REHABILITATED AND DISCONTINUED GROUPS AS CLASSIFIED BY DICTIONARY OF OCCUPATIONAL TITLES, PART II

Occupational Classification	Total Both Groups	% of Total	Rehabilitated Group	% of Rehabilitated	Discontinued Group	% of Discontinued
Professional and Managerial	21	13.2	13	12.5	8	14.5
Clerical and Sales	10	06.2	8	07.7	2	03.6
Service	5	03.1	2	01.9	3	05.4
Agriculture	9	05.7	5	04.9	4	07.3
Skilled	44	27.7	29	27.8	15	27.3
Semi-skilled	36	22.6	26	25.0	10	18.2
Unskilled	18	11.4	14	13.4	4	07.3
Not known	16	10.1	7	06.8	9	16.4
Total	159	100.0	104	100.0	55	100.0

TABLE VII

QUARTILE DISTRIBUTION OF INTELLIGENCE TEST SCORES MADE BY DISABLED VETERANS IN REHABILITATED AND DISCONTINUED CLASSIFICATIONS, IN PERCENTAGES

Name of Test	Rehabilitated Group (N-104)					Discontinued Group (N-55)				
	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	Total	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	Total
Army General Classification Test	-	20	24	56	100	17	8	25	50	100
American Council on Education Test	41	28	21	10	100	17	49	17	17	100
California Mental Maturity Test	6	13	55	26	100	-	15	70	15	100
Otis Higher Examination	16	37	26	21	100	29	43	14	14	100

On the basis of this tabular distribution, it does not appear that tests of intelligence discriminate between rehabilitated and discontinued veterans. On one test, the ACE, a reversal of the expected distribution is found, with over two-fifths of the veterans who completed their course scoring in the lowest quartile. Only on the Otis test does there seem to be a tendency for veterans in the rehabilitated group to make higher scores than are made by veterans who discontinued their training.

The Kuder Preference Record, Vocational, was administered to all but five of the veterans in the sample. The quartile distribution of scores on the nine scales of this interest inventory is recorded in Table VIII. Only the computational, clerical, and musical scales reveal differences in the two groups of veterans. On the computational and clerical scales, there appears to be a positive relationship between magnitude of scores and completion or non-completion of training. On the musical scale, a negative relationship seems to exist.

The Minnesota Clerical Test was administered to 124 of the veterans included in this study, and the quartile distributions are given in Table IX. On the number comparison part of this test, almost one-half of the rehabilitated veterans scored in the upper quartile while only about one-fourth of the discontinued veterans made scores this high. Conversely, a higher proportion of discontinued veterans than rehabilitated veterans made scores on this part of the test that placed them in the lower two quartiles. The name comparison part of this test demonstrated a remarkable evenness of score distribution between the two groups of veterans.

TABLE VIII

QUARTILE DISTRIBUTION OF SCORES ON THE KUDER PREFERENCE RECORD, VOCATIONAL, MADE BY DISABLED VETERANS IN REHABILITATED AND DISCONTINUED CLASSIFICATION, BY PERCENTAGES

Kuder Scales	Rehabilitated Group (N-103)					Discontinued Group (N-51)				
	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	Total	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	Total
Mechanical	43	25	14	18	100	37	31	24	8	100
Computational	10	16	20	54	100	21	18	20	41	100
Scientific	18	41	25	16	100	41	22	27	10	100
Persuasive	18	32	23	27	100	25	18	37	20	100
Artistic	38	24	17	21	100	31	29	16	24	100
Literary	23	33	17	27	100	34	12	27	27	100
Musical	30	33	23	16	100	18	23	18	41	100
Social Service	31	23	23	23	100	33	27	18	22	100
Clerical	2	11	23	64	100	20	10	16	54	100

TABLE IX

QUARTILE DISTRIBUTION OF SCORES ON THE MINNESOTA CLERICAL TEST MADE BY DISABLED VETERANS IN REHABILITATED AND DISCONTINUED GROUPS, IN PERCENTAGES

Minnesota Clerical Parts	Rehabilitated Group (N-78)					Discontinued Group (N-46)				
	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	Total Percent	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	Total Percent
Number Comparison	4	21	27	48	100	7	32	35	26	100
Name Comparison	5	28	39	28	100	7	28	37	28	100

The nature of the current employment of this group of disabled veterans as evaluated in terms of the training they received is shown in Table X. Approximately three-quarters of the veterans who completed their course of training are employed in an occupation related to their training whereas only one-third of the veterans who discontinued their training are so employed. Almost ten percent of the veterans in the response group were unemployed. This may be a reflection of the high index of unemployment prevaling in the Detroit area at the time this survey was undertaken. Less than five percent of the rehabilitated veterans in the response group were unemployed while twenty percent of the discontinued veterans were not employed.

The degree of satisfaction disabled veterans derive from their jobs is indicated in Table XI. Almost one-half of the total group stated that they were very well satisfied with their current employment; only seven percent expressed dissatisfaction. On the whole rehabilitated veterans seem to be more satisfied with their jobs than discontinued veterans.

The earnings of disabled veterans for the 1953 calendar year are listed in Table XII. The mean earnings for rehabilitated and discontinued veterans are 4,303 dollars and 3,797 dollars respectively. The proportion of discontinued veterans reporting earnings in excess of 4,500 dollars or less than 3,000 dollars is slightly greater than rehabilitated veterans reporting similar earnings. In general, differences in earnings between the rehabilitated and discontinued groups appear to be small.

TABLE X

RELATIONSHIP OF CURRENT EMPLOYMENT TO THE TRAINING RECEIVED UNDER PUBLIC LAW 16 FOR REHABILITATED AND DISCONTINUED VETERANS*

	Total Both Groups	% of Total	Rehabili-tated Group	% of Rehabili-tated	Discon-tinued Group	% of Discon-tinued
Employed in same field as training	61	60.4	50	74.6	11	32.4
Employed in different field than training	30	29.7	14	20.9	16	47.1
Not employed	10	9.9	3	4.5	7	20.5
Total	101	100.0	67	100.0	34	100.0

* The relationship of the job to the training was obvious in many cases e.g. a veteran who studied accounting and is now employed as an accountant. In those cases where this relationship was not obvious, the decision was made by a panel of three judges, all of whom were experienced vocational counselors. In cases where the judges were in disagreement, the majority decision was utilized.

TABLE XI

SATISFACTION WITH CURRENT EMPLOYMENT AS EXPRESSED BY DISABLED VETERANS IN REHABILITATED AND DISCONTINUED CLASSIFICATIONS

	Total Both Groups	% of Total	Rehabilitated Group	% of Rehabilitated	Discontinued Group	% of Discontinued
Very satisfied	45	49.4	36	56.3	9	33.3
Satisfied	30	33.0	21	32.8	9	33.3
Neutral	9	10.0	4	6.2	5	18.6
Dissatisfied	7	7.6	3	4.7	4	14.8
Total	91	100.0	64	100.0	27	100.0

TABLE XII

EARNINGS REPORTED FOR THE YEAR 1953 BY DISABLED VETERANS IN REHABILITATED AND DISCONTINUED CLASSIFICATIONS

Earnings	Total Both Groups	% of Total	Rehabilitated Group	% of Rehabilitated	Discontinued Group	% of Discontinued
6,000 and above	8	8.5	5	7.8	3	10.0
5,500 - 5,900	1	1.1	0	-	1	3.3
5,000 - 5,400	15	16.0	10	15.6	5	16.7
4,500 - 4,900	11	11.6	7	10.9	4	13.3
4,000 - 4,400	20	21.3	17	26.5	3	10.0
3,500 - 3,900	22	23.4	16	25.0	6	20.0
3,000 - 3,400	7	7.4	5	7.8	2	6.7
2,500 - 2,900	2	2.2	2	3.1	0	-
2,400 and below	8	8.5	2	3.1	6	20.0
Total	94	100.0	64	100.0	30	100.0

CHAPTER V

ANALYSIS OF THE DATA RELATED TO THE COUNSELING VARIABLES

In this chapter, the counseling variables with which this study is concerned are analyzed in terms of the significance with which they discriminate between the two groups in the sample. In Chapter I, a number of hypotheses were postulated regarding these variables. These hypotheses are:

1. There is a relationship between age and completion of training.
2. There is a relationship between high school graduation and completion of training.
3. There is a relationship between the presence or absence of dependent children and completion of training.
4. There is a relationship between the type of disability and completion of training.
5. There is a relationship between the seriousness of the disability and completion of training.
6. There is a relationship between father's occupation and completion of training.
7. There is a relationship between related employment experience and completion of training.
8. There is a relationship between scores on tests of intelligence and completion of training.

9. There is a relationship between scores on the Minnesota Clerical Test and completion of training.

10. There is a relationship between scores on the Kuder Preference Record, Vocational, and completion of training.

The findings of this study as they relate to their respective hypotheses are listed below.

Hypothesis 1.

For the rehabilitated group the mean age proved to be 25.5 years, while the mean age of the discontinued group was 26.0 years. The sigmas of the groups were 3.42 and 3.74 respectively. When these results were evaluated in terms of the critical ratio technique, the difference in age for the two groups proved to be not statistically significant. (CR = .66, non significant). Therefore, the first hypothesis is not supported by the evidence, and in the light of the entire data it appears that age is not an important variable in determining completion or discontinuance of the training program.

Hypothesis 2.

To test the second hypothesis, the sample was divided into two groups with high school graduation constituting the focal point of the division. The rationale for this division of the sample rests on the generally accepted assumption that a high school education is a desirable but not a mandatory pre-requisite for terminal business training. Most private business schools admit veterans as students whether they are high school graduates or not. Table XIII gives the results of this analysis of the data.

TABLE XIII

FOUR-FOLD CLASSIFICATION OF EDUCATIONAL LEVEL BY COMPLETION OR NON-COMPLETION OF HIGH SCHOOL IN REHABILITATED AND DISCONTINUED GROUPS

	Rehabilitated	Discontinued	
Less than high school	29	26	55
High school or more	75	29	104
	104	55	N = 159
Chi-square = 6.01	P<.02		

The difference between the two groups with respect to the educational level attained was significant at the two percent level of confidence. Therefore, the second hypothesis is confirmed by the data. On the basis of this sample, the chances are almost two to one that an individual without a high school education will fail to complete this course. Thus, it would appear that a high school education is an important requirement for successful pursuit of terminal business training. Counselors of disabled adults can logically continue to stress the importance of high school as preparation for specialized business education.

Hypothesis 3.

In the rehabilitated group, 68 subjects (65 percent) had no dependent children while 36 subjects (35 percent) had one or more dependent children. In the discontinued group, 35 veterans (64 percent)

had no dependent children while 20 veterans (36 percent) had one or more dependent children. When the two groups were evaluated by means of chi-square, no significant difference was discovered ($\chi^2 = .05$, $P = .90$).

Consequently the third hypothesis is not supported by the evidence and must be rejected. On the basis of the findings, it may be concluded that the presence or absence of dependent children is not an important factor in completion or non-completion of a terminal business course. It would appear that the subsistence allowance provided seriously disabled veterans pursuing institutional training is adequate even for veterans with families.

Hypothesis 4.

Inspection of the data relating to the major disability classifications of the veterans constituting the sample revealed two distinct trends. Veterans with orthopedic disabilities demonstrated a pronounced tendency to complete training while veterans with neuropsychiatric disabilities displayed a similar tendency to discontinue training. To analyze statistically this distribution of the data, both orthopedic and neuropsychiatric cases were compared with each other and then with cases in each of the other disability classifications and tested for significance of difference by means of chi-square. In addition, cases constituting the second most widely divergent disability classifications, respiratory and wound conditions, were compared statistically. The results of this analysis are presented in Table XIV.

TABLE XIV

DIFFERENCES BETWEEN DISABLED VETERANS IN REHABILITATED AND DISCONTINUED GROUPS ACCORDING TO DISABILITY CLASSIFICATIONS

	Chi-square	P
Orthopedic vs Neuropsychiatric	10.46	.01 **
Orthopedic vs Wounds	5.69	.05 *
Orthopedic vs Respiratory	.94	.40
Orthopedic vs Vision and Hearing	2.24	.20
Orthopedic vs Circulatory	1.85	.20
Neuropsychiatric vs Wounds	- .74	.50
Neuropsychiatric vs Respiratory	-10.06	.01 **
Neuropsychiatric vs Vision and Hearing	- 1.67	.20
Neuropsychiatric vs Circulatory	- 2.11	.20
Respiratory vs Wounds	1.27	.30

** Significant at the one percent level of confidence.

* Significant at the five percent level of confidence.

Veterans with orthopedic disabilities demonstrated a tendency to complete training with a significantly higher degree of frequency than veterans with either neuropsychiatric disabilities or wound disabilities. Also, veterans with respiratory disabilities showed a tendency to complete training with a significantly higher degree of frequency than veterans with neuropsychiatric disabilities. Differences between subjects in other disability classifications were not significant statistically. Thus, the fourth hypothesis is supported by the evidence to the extent that the relationship between type of disability and completion of training is significant in three instances.

Practical implications of these findings to counselors of disabled veterans are more meaningful if the findings are stated in terms of expected outcomes. Based on this sample, a veteran with an orthopedic disability has 82 chances in 100 of successfully completing a terminal business course while a veteran with a neuropsychiatric disability has only 42 chances in 100 of finishing the course. A veteran with a respiratory disability has 70 chances in 100 of being successful, a veteran with a wound disability 54 chances in 100.

It is quite possible that these differences are accounted for by the varying residuals of the disability conditions. Orthopedic conditions are invariably static, and the physical limitations imposed by the disability are obvious to the person affected and to others. In respiratory cases, especially tuberculosis, the prolonged hospitalization required for treatment of the disease and the ever-present danger of re-infection cause keen awareness of the physical restrictions

imposed. Veterans with disabilities of these types may realize that preparation for a sedentary occupation is essential to their ultimate vocational adjustment and hence may be highly motivated to complete their training.

Muscle wounds, on the other hand, tend to improve with the passage of time, so the physical limitations imposed by disabilities of this nature are not static in many instances. It is reasonable to assume that many veterans with wound disabilities abandoned training because the improvement in their physical condition encouraged them to accept employment for greater financial remuneration.

The failure of veterans with neuropsychiatric disabilities to complete training may be explained by the common manifestations of maladjustment demonstrated by individuals with ailments of this type. Some of the usual neurotic symptoms are: frequent changes of jobs, reticence and withdrawal, spasmodic and irregular application, deficiency in range and power of attention, distractability, and day-dreaming (35:104). It is not surprising that individuals with these behavior traits are unsuccessful in training. Similar findings have been reported by Sprol (37) and Brown (8).

On the basis of this analysis, it would appear that rehabilitation counselors should appraise veterans with neuropsychiatric and wound disabilities very carefully prior to recommending business school training for them.

Hypothesis 5.

Only veterans in receipt of 50 percent or more disability compensation were included in the sample. In analyzing the effect of the

extent of the disability on completion of training, the assumption was made that the percent of rating is a valid indicator of the seriousness of the disability. To test the hypothesis of relationship between magnitude of disability and completion of training, the sample was divided into two parts equal with respect to their range of percentage rating. Thus, one group consisted of veterans with disability ratings of 50 percent through 70 percent; the other group was composed of veterans with disability ratings of 80 percent through 100 percent.

When the rehabilitated and discontinued groups were compared statistically by means of a two by two contingency table in accordance with this division, no significant difference was discovered ($\chi^2 = .15$, $P = .70$). Therefore, the fifth hypothesis is not supported by the evidence and must be rejected. It appears that rehabilitation counselors need not be concerned about the magnitude of their clients' disabilities when a business course is being considered for vocational rehabilitation.

Hypothesis 6.

The occupations engaged in by the fathers of the disabled veterans constituting the sample were classified in accordance with Part II, Dictionary of Occupational Titles (12). This classification system resulted in seven groupings. However, to facilitate analysis, it was considered appropriate to consolidate the occupations into two major classifications, those occupations where work performance was primarily with the "head" and those primarily with the "hand". This breakdown is employed commonly in the field of industrial sociology. Consequently,

the professional-managerial, sales-clerical, and service occupations were combined into one group, while skilled, semi-skilled, and unskilled occupations were combined into another group. The agricultural occupation was eliminated because it did not fall clearly into either classification.

In the "white-collar" group there were 23 rehabilitated cases (64 percent) and 13 discontinued cases (36 percent). In the "blue-collared" group, there were 69 rehabilitated cases (70 percent) and 29 discontinued cases (30 percent). When these results were analyzed by means of chi-square, the difference was found to be not significant ($\chi^2 = .52$, $P = .50$). Therefore, the sixth hypothesis is not confirmed by the evidence and must be rejected. It can be concluded that father's occupation is not a significant variable in determining completion or discontinuance of a terminal business training program.

Hypothesis 7.

Of the 159 veterans constituting the sample, only 32 were acquainted with business activity through actual experience; 127 subjects had no employment experience related to their training. Twenty-two (69 percent) of the veterans with related experience completed their training and 10 discontinued. Of the veterans without related experience, 82 (65 percent) were rehabilitated and 45 were discontinued. Analysis of the data revealed that the difference between the two groups was not significant statistically ($\chi^2 = .20$, $P = .70$). Therefore, the seventh hypothesis must be rejected on the basis of the evidence. The

conclusion is reached that related employment experience is not a significant variable in the prediction of completion or non-completion of a business course.

Hypothesis 8.

As stated previously, one of four different intelligence tests had been administered to every veteran in the sample. The tests and the number of veterans to whom each test was administered follows: Army General Classification Test - 37; California Test of Mental Maturity - 48; American Council on Education Psychological Test for College Freshmen - 41; Otis Higher Examination, Form D - 33. To evaluate the usefulness of these tests as predictors of success in terminal business training, the following procedure was employed: the median score for each test was calculated and cases falling above and below the median were tabulated. A chi-square value was then computed for each test by means of a two by two contingency table. This analysis of the data revealed that none of the tests differentiated significantly between the rehabilitated and discontinued groups. Therefore, the eighth hypothesis is not upheld by the evidence and must be rejected. It can be concluded that the tests of intelligence administered to the subjects constituting this sample do not differentiate successful and unsuccessful candidates for terminal business training.

Hypothesis 9.

The Minnesota Clerical Test had been administered to 112 of the veterans making up the sample group. This test consists of two parts,

a Number Comparison section and a Name Comparison section. Differences in the rehabilitated and discontinued groups were tested by means of the critical ratio technique. The results of the analysis are presented in Table XV.

TABLE XV

MEANS AND SIGMAS OF DISABLED VETERANS IN REHABILITATED AND DISCONTINUED GROUPS ON THE MINNESOTA CLERICAL TEST

	Rehabilitated		Discontinued		
	M	S.D.	M	S.D.	Critical Ratio
Number Comparison	103.2	29.92	91.6	19.47	2.61 **
Name Comparison	92.2	22.98	87.0	22.17	1.24

** Significant at the 1 percent level of confidence.

The difference between the two groups on the Number Comparison part of this test was significant at the one percent level of confidence. The difference between the two groups on the Name Comparison part of this test was not significant statistically, although rehabilitated veterans did make a higher mean score on this section than discontinued veterans. Thus, the ninth hypothesis as stated appears to be supported by the evidence.

Clarification of the divergent findings relating to the sub-parts of the test is needed. It appears that the Numbers and Names sections

are measuring two functions that are not completely related. This allegation is supported by other investigations. Andrew (1) found that the correlation between Number-checking and Name-checking was .66, which is less than the individual retest reliabilities of .76 and .83 discovered by Darley (11).

Explanation for the fact that one part of this test significantly differentiated successful and unsuccessful trainees while the other part did not may lie in the subject content of the training program. Almost without exception, the disabled veterans considered in the investigation were engaged in training programs that emphasized the study of accounting. It has been demonstrated that successful pursuit of accounting courses requires a high degree of number facility. Therefore, it is not surprising that the Number Comparison section of the Minnesota Clerical Test successfully discriminates between rehabilitated and discontinued trainees.

Hypothesis 10.

The Kuder Preference Record, Vocational, was administered to 154 of the 159 veterans constituting the sample. Critical ratio was the statistic employed to determine the significance of the differences between the rehabilitated and discontinued group on each of the nine sub-tests that form the Kuder. Table XVI presents the results of this analysis.

A significant difference was found between rehabilitated and discontinued veterans on the computational and musical scales of the Kuder Preference Record. These differences were significant at the five

TABLE XVI

MEANS AND SIGMAS OF DISABLED VETERANS IN REHABILITATED AND DISCONTINUED GROUPS ON THE KUDER PREFERENCE RECORD, VOCATIONAL

Kuder Scales	Rehabilitated		Discontinued		
	M	S.D.	M	S.D.	Critical Ratio
Mechanical	69.1	24.56	67.9	21.53	0.30
Computational	44.1	12.55	38.9	11.86	2.04 *
Scientific	57.5	15.18	57.8	14.61	-0.12
Persuasive	77.4	19.98	74.4	20.03	0.90
Artistic	43.4	14.82	43.5	14.87	-0.02
Literary	47.8	14.63	47.6	20.12	0.09
Musical	14.3	7.89	20.0	10.87	-3.35 **
Social Service	73.0	19.54	71.1	18.73	0.67
Clerical	66.8	14.84	62.2	18.21	1.54

* Significant at the 5 percent level of confidence.

** Significant at the 1 percent level of confidence.

percent and one percent levels of confidence respectively. However, on the musical scale, the difference was in the opposite direction of the computational scale i.e. veterans who failed to complete training made significantly higher scores on the musical scale than veterans who completed their course.

Because of the nature of the test instrument being employed, it was decided to make further analysis of the data. In actual practice, counselors tend to ignore Kuder scale scores that fall in the middle range and to concentrate their attention on scores above the 75th percentile and below the 25th percentile. The rationale for this procedure is based on the assumption that only areas in which the measured interest is either very pronounced or very low are important in vocational counseling. This practice is recommended by Kuder (24:4) in the test manual.

In accordance with this commonly accepted counseling practice, sub-test scores that fell in the middle quartiles were eliminated from the data. Differences between rehabilitated and discontinued veterans were then tested for significance on each of the interest scales by means of chi-square. The results are shown in Table XVII.

This analysis confirmed the findings that the two groups differed significantly on the computational and musical scales, the confidence level remaining at five percent and one percent respectively. In addition, a difference on the clerical scale significant at the one percent level of confidence was found. The distribution of scores

TABLE XVII

COMPARISON OF DISABLED VETERANS IN REHABILITATED AND DISCONTINUED GROUPS BY UPPER AND LOWER QUARTILE SCORES ON THE KUDER PREFERENCE RECORD

	χ^2	P
Mechanical	1.40	.30
Computational	5.52	.05 *
Scientific	3.45	.10
Persuasive	2.61	.20
Artistic	- .37	.70
Literary	.58	.50
Musical	-9.01	.01 **
Social Service	.14	.70
Clerical	14.52	.01 **

** Significant at the 1 percent level of confidence.

* Significant at the 5 percent level of confidence.

in the middle ranges evidently concealed the discriminative power of this scale which was revaled when only the extreme scores were considered.

None of the other scales discriminated significantly between veterans who finished and those who did not finish their course of terminal business training. It was not expected that they would in view of the nature of the training under consideration. The tenth hypothesis appears to be substantiated on the basis of these findings.

There is an obvious and logical rationale for the difference between the two groups on the computational scale of the Kuder. The construction of this scale is such that a high score is designed to reflect a high interest in dealing with number symbols, while a low score indicates an absence of interest in this type of activity. Since the specific training under consideration involves extensive work with numbers, it is not surprising to find a significant difference between graduates and drop-outs on this scale.

Similarly, the difference between finishers and non-finishers on the clerical scale of the Kuder is not unexpected. The correlation between the two scales has been found to be .50 (40:452), indicating that individuals scoring high on one scale tend to score high on the other. In addition, the training course encompasses a variety of activities which are clerical in nature.

On the musical scale, the reasons for the difference are not so obvious. One possible explanation for the difference between the two groups on this scale is that a high interest in an asthetic field such

as music may reflect a corresponding lack of interest in a field requiring considerable application of concrete numerical symbols. Another possible explanation is that a high score on the musical scale reflects some degree of emotional instability, which would account for the tendency of high scorers to discontinue training. An investigation by Triggs (43) suggests, although it does not offer conclusive evidence, that a relationship does exist between scores on the musical scale of the Kuder and a schizophrenic process. A third explanation, based on the conclusions arrived at by Super (40:457), is that a high musical score is a reflection of a lack of a crystalization of interest. Hence, high scorers would tend to lack the motivation for training possessed by individuals with highly developed interests.

CHAPTER VI

ANALYSIS OF THE DATA RELATED TO THE VOCATIONAL ADJUSTMENT CRITERION AND THE TRAINING

In order to evaluate the relationship of completion or non-completion of training to vocational adjustment, it was necessary to explore first possible differences between the rehabilitated and discontinued groups relative to the nature of their current employment. If the two groups were found to be essentially homogeneous with respect to their current occupations, further comparisons would be meaningless, for this evaluation of vocational adjustment was based on the assumption that the groups were heterogeneous vocationally. To explore the existence of occupational heterogeneity, the answers to these questions were sought: (1) Are a significantly greater number of rehabilitated as compared to discontinued veterans employed in occupations directly related to their training? (2) Do rehabilitated veterans feel that their training has made a more significant contribution to their current employment than discontinued veterans?

In an effort to evaluate the relationship of the training to the veteran's present occupation, a space was provided on the mailed questionnaire for the recording of the title and description of the present job. This information was then compared with the content of the training program pursued by the veteran, and a decision was made regarding the similarity of the two. Questionable cases were referred

to a panel of three experienced vocational counselors for a final determination, and the majority decision of this group was accepted.

To assess the attitudes of veterans towards the contribution of their training to their employment, the following question was included on the mailed questionnaire: "How much has the training you received under Public Law 16 contributed to your success in your present occupation?" Possible responses ranged from "practically nothing" to "very much". A total of 93 veterans responded to this question.

The results of the first inquiry are given in Table XVIII. The difference in the two groups with respect to the relationship of current employment to training is highly significant. The possibility that the difference is due to chance is less than one in five hundred. Therefore, it can be concluded with some confidence that the rehabilitated group is different than the discontinued group with respect to current employment.

In the analysis of responses concerning the attitude of disabled veterans to the value of the training they received, the replies were dichotomized into favorable and unfavorable responses. The findings are presented in Table XIX. It is apparent that the rehabilitated and discontinued groups differ significantly in their feelings towards the contribution made by their training to their current occupation. The difference is significant well beyond the one percent level of confidence.

On the basis of the findings, the conclusion can be drawn that the two groups differ in their composition in at least two respects,

TABLE XVIII

FOUR-FOLD CLASSIFICATION OF RELATIONSHIP OF CURRENT EMPLOYMENT TO TRAINING IN REHABILITATED AND DISCONTINUED GROUPS

	Rehabilitated	Discontinued	
Employment related to training	50	11	61
Employment not related to training	17	23	40
	67	34	N = 101

Chi-square = 16.85 $P < .01$

TABLE XIX

FOUR-FOLD CLASSIFICATION OF CONTRIBUTION OF TRAINING TO EMPLOYMENT IN REHABILITATED AND DISCONTINUED GROUPS

	Rehabilitated	Discontinued	
Training contributed	47	10	57
Training did not contribute	17	19	36
	64	29	N = 93

Chi-square = 12.76 $P < .01$

their occupational classification and their attitude towards their training. A comparison of the groups with regard to the vocational adjustment criteria is now possible.

In Chapter I, it was hypothesized that veterans who completed a terminal business course would make a better vocational adjustment than veterans whose course was terminated short of completion. Two criteria were selected as determinents of vocational adjustment. These were current earnings and expressed job satisfaction. It was further postulated that a relationship would exist between completion of training and each of these criteria.

Hypothesis 1.

For the rehabilitated group, mean earnings reported for the 1953 calender year proved to be 4303 dollars, while for the discontinued group the average was 3797 dollars. The sigmas were 1303 and 1706 respectively. When these findings were evaluated in terms of the critical ratio technique, the results were found to be not significant (CR = 1.45, non-significant). Therefore, the hypothesis of relationship between completion of training and earnings is not supported by the evidence and must be rejected.

Hypothesis 2.

To permit evaluation of the degree to which veterans were satisfied with their current employment, they were asked to respond to a five point scale designed to measure their attitude towards their jobs. This scale was constructed to yield two possible favorable responses, two possible unfavorable responses, and one possible neutral response.

For the purpose of analysis, all neutral and dissatisfaction responses were combined into one classification while highly satisfied and fairly satisfied responses were combined into the second classification. The findings are given in Table XX.

TABLE XX

FOUR-FOLD CLASSIFICATION OF JOB SATISFACTION OR DISSATISFACTION IN REHABILITATED AND DISCONTINUED GROUPS

	Rehabilitated	Discontinued	
Satisfied	57	17	74
Dissatisfied	7	10	17
	64	27	N = 91
Chi-square = 6.67		P < .01	

The difference in the two groups with relation to expressed job satisfaction is significant at the one percent level of confidence. It appears highly improbable that the difference is attributable to chance. Hence, it may be concluded with reasonable confidence that veterans who completed their training are more satisfied on the whole with the work they are doing than veterans whose training was discontinued.

On the basis of the findings, it would appear that veterans who completed their training have made a better vocational adjustment than veterans whose training was discontinued short of completion. Their

expressed job satisfaction is significantly higher. In addition they report substantially higher earnings, although the difference between the two groups is not significant statistically.

In the effort to further evaluate the comparative vocational adjustment of rehabilitated and discontinued veterans, the employment experience of the two groups as reported on the questionnaire was examined critically. Three aspects of the work history - employment, promotion, and job stability - were deemed to have relationship to vocational adjustment. These variables were analyzed non-statistically.

Analysis of Work Histories

Only three of the 67 rehabilitated veterans who responded to the questionnaire reported that they were unemployed at the time the survey was conducted. In the discontinued group, seven of the 34 veterans who responded to the questionnaire revealed that they were not employed. In other words, unemployed veterans constituted four percent of the rehabilitated group responding and 21 percent of the discontinued group responding. The questionnaires were submitted during a period when approximately 13 percent of the labor force in the Detroit area was unemployed (30). These results can be interpreted as an indication that disabled veterans who complete a terminal business course are able to compete for jobs in an unfavorable employment situation more successfully than disabled veterans whose training is terminated before completion.

Appraisal of the employment histories submitted by disabled veterans indicated that rehabilitated veterans were more likely to advance to better jobs than discontinued veterans. Twenty-five percent of the rehabilitated veterans who responded to the questionnaire demonstrated clear evidence of promotion to more responsible positions in their work histories. Only 11 percent of the responding discontinued veterans presented evidence of promotion.

Further analysis of the work records revealed that disabled veterans who completed their business course portrayed more employment stability than non-finishers. Thirty-five percent of the discontinued group evidenced two or more job changes that involved a shift in occupational areas. This was in contrast to the 10 percent of the rehabilitated group that made similar job changes.

The findings listed above appear to substantiate further the second major hypothesis postulated in the study, namely, that completion of the training program is related to vocational adjustment.

Thus far in this chapter, attention has been directed to the evaluation of the comparative vocational adjustment of rehabilitated and discontinued veterans. Some evaluation of the training program without regard to the vocational adjustment criterion would appear to be a logical and desirable adjunct to this analysis. In an effort to appraise the opinions of veterans towards the Veterans Administration rehabilitation program, three free-response questions were included on the mailed questionnaire. Two of these questions sought to secure the reaction of disabled veterans to the training program, one by

requesting suggestions relative to improvement of the training program, the other by the more non-direct method of soliciting the advice these World War II veterans would give to Korean veterans. The third question was directed to discovering the reasons why veterans who discontinued their training had done so. The nature of the responses and their possible significance are presented here.

Veterans' Evaluation of the Training Program

Analysis of the answers provided to the free-response questions revealed that the Veterans Administration rehabilitation program was regarded favorably by a substantial number of the veterans who had received training. Over one-half of the respondents indicated that they would advise disabled veterans recently released from service to undertake some type of training under the auspices of the Veterans Administration. Approximately one-fourth of the veterans answering the questionnaire revealed their satisfaction with the program and advised that they felt little or no improvement could be made.

Of the suggestions made for betterment of the Veterans Administration vocational rehabilitation program, the most frequently mentioned were related to the counseling services. A considerable number of veterans felt that the counseling function could be improved through a more careful appraisal of the capacities of the disabled veteran and by this, a better selection of the specific training program to be followed. The next most frequently recurring suggestions were those related to

better supervision of veterans while they were in training. More effective job placement following training, greater opportunities for on-the-job training, and more liberal subsistence allowances for married veterans were other suggestions made by several veterans.

That the counseling services were not too lowly regarded was indicated by the fact that a substantial number of veterans would recommend that Korean veterans seek counseling before deciding upon a course of training. An equal number of disabled veterans suggested that their Korean counterparts make a careful analysis of vocational fields before choosing their occupation. Many veterans proposed college or apprenticeship training as a more suitable choice than terminal business schooling.

Veterans' Reasons for Termination of Training

Of the 34 veterans in the discontinued group who responded to the questionnaire, 28 listed the reasons for their termination of training. Careful appraisal of these responses indicated that they could be grouped into six classifications. Table XXI reveals the categories and the number of veteran responses in each.

Investigations of school drop-outs have revealed that the reasons supplied by the school leaver are not always the actual reasons for his action. To evaluate the validity of the explanations offered by the respondents, their progress in training up to the time of termination was assessed. Five veterans had been in training such a short time that no report of their progress was available. Five veterans

TABLE XXI

CLASSIFICATION OF VETERANS' REASONS
FOR TERMINATING TRAINING

Reason	Number	Percent of Total
Financial	8	28
Lack of interest in the course	6	21
Preference for employment to school	5	18
Illness	5	18
Dissatisfied with the instruction	3	11
Lack of educational background	1	04
Total	28	100

were doing definitely unsatisfactory work, according to reports from the training institution, and four were marginally satisfactory. Only six veterans in this group were above average in their school performance. Of the eight veterans who cited finances as the reason for their termination of training, four were unsatisfactory or borderline in their school achievement. On the basis of this evidence, it would appear that either lack of ability to perform the school work or lack of motivation were the primary reasons for the failure of disabled veterans to complete a terminal business course.

Six veterans commented on their attitude about their action in terminating their schooling. Five of these subjects expressed regret that they had not finished the course. Only one veteran expressed a definite opinion that he had made the right decision by leaving training for employment.

CHAPTER VII

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER RESEARCH

Purpose of the Study

More than one million veterans were disabled to some extent as a result of military service in World War II. In the effort to assist these disabled veterans to acquire vocational skills compatible with physical limitations, the 78th Congress passed Public Law 16. This law delegated to the Veterans Administration the responsibility for providing courses of training which would restore vocational competence to disabled veterans whose ability to secure gainful employment had been hampered by their disabilities.

A wide variety of training programs were established to meet the needs of disabled veterans. In addition, counseling prior to initiation of training was made mandatory for all disabled veterans. It was the responsibility of the counselor to evaluate with the veteran all of the factors that required consideration in order to effect maximal opportunities for success in the training program selected. Despite the diversification of training offered and the counseling service provided, over one-half of the disabled veterans who commenced a course of training failed to complete the program. This raised many questions concerning the adequacy of the counseling services and the training afforded disabled veterans.

It was from such a problem that this study evolved. The first purpose of the study was to determine which of the objective variables utilized in the counseling of disabled veterans best discriminated between veterans who completed and veterans who failed to complete a specified type of training program. A knowledge of which variables would be most predictive of completion of training would obviously allow counselors to proceed in the selection of the employment objective with more confidence. The second purpose of the study was to determine the relative vocational adjustment of disabled veterans who were rehabilitated by reason of this training and those who discontinued this training short of completion. This was considered an important phase of the study because the results would enable counselors of disabled veterans to appraise realistically the expected outcome of such a course of vocational rehabilitation.

The Sample

This study was limited to male, white veterans rated as 50 percent or more disabled who entered a terminal business course during the period 1946 - 1949 inclusive and who were residing in the Detroit metropolitan area at the time of the investigation. There were a total of 159 veterans who met these conditions; of this group, 104 had completed their training and 55 had terminated short of completion. The entire group was utilized as a basis for analysis of the counseling variables that were most predictive of success in training.

In order to assess the results of terminal business training relative to the vocational adjustment criteria (job satisfaction and

earnings), questionnaires were mailed to all of the veterans comprising the sample. One-hundred and one or 64 percent of these veterans returned usable questionnaires. The response group was made up of 67 rehabilitated veterans and 34 discontinued veterans. This constituted 65 percent and 62 percent of the total subjects in the rehabilitated and discontinued groups respectively. This sub-group formed the basis for determining whether completion of training contributed materially to vocational adjustment.

Methodology

A set of hypotheses was established for each of the problem areas being investigated. The first series of hypotheses centered around the question of what counseling variables would discriminate between veterans who completed and veterans who failed to complete the prescribed training program. The counseling variables considered were age, education, number of dependents, type of disability, magnitude of disability, father's occupation, related employment experience, measured intelligence, performance on the Minnesota Clerical Test, and Kuder Preference Record scale scores.

The second series of hypotheses focused on the relationship of completion of training to vocational adjustment. It was postulated that veterans who completed terminal business training would report higher earnings and express greater satisfaction with their jobs than veterans who discontinued their training before completion.

Data relative to the counseling variables were secured from training sub-folders and medical files maintained at the Detroit regional office of the Veterans Administration. Information relative to vocational adjustment was secured from questionnaire forms as completed by disabled veterans. The statistical techniques of chi-square and critical ratio were employed as appropriate to test the hypotheses. Further evaluation of the relative vocational adjustment of rehabilitated and discontinued veterans was accomplished by analysis of the free-responses permitted on the questionnaire.

Findings

It was discovered that rehabilitated and discontinued veterans did not differ significantly with respect to the following counseling variables: age, number of dependents, magnitude of disability, father's occupation, related employment experience, intelligence test scores, performance on the Names Comparison section of the Minnesota Clerical Test, and scores on six scales (mechanical, scientific, persuasive, artistic, literary, and social service) of the Kuder Preference Record. A difference significant at the five percent level of confidence was found on the computational scale of the Kuder Preference Record. High school graduation differentiated successes and failures at the two percent level of confidence. Differences significant at the one percent level of confidence were found on the Number Comparison section of the Minnesota Clerical Test and on the musical scale of the Kuder; the latter difference was in the reverse direction

of the other measurements, with high scorers demonstrating a significant tendency to terminate training. A difference significant at the one percent level of confidence was discovered on the clerical scale of the Kuder when only veterans making scores in the upper and lower quartiles were included in the analysis. It was also found that veterans with neuropsychiatric disabilities terminated training with a higher degree of frequency than did veterans with orthopedic or respiratory disabilities; differences were significant at the one percent level of confidence.

No significant difference with respect to reported earnings was found between rehabilitated and discontinued veterans. A difference significant at the one percent level of confidence was discovered with respect to expressed job satisfaction; rehabilitated veterans were found to be more satisfied with their work status than discontinued veterans. In addition, it was found that veterans who had completed their training were more likely to be employed, demonstrated more advancement, and changed jobs less frequently than discontinued veterans.

The reason most frequently cited by disabled veterans for discontinuance of this training program was financial. Other reasons given frequently were lack of interest, illness, preference for employment, and dissatisfaction with the instruction. However, analysis of the training reports for veterans who terminated their training led to the conclusion that poor progress in school and lack of motivation were key factors in the withdrawal of disabled veterans from training.

Conclusions and Implications for Further Research

It was postulated that a series of variables would discriminate between successful and unsuccessful disabled veteran trainees in a terminal business course. Some of the counseling variables considered did discriminate significantly between these two groups but others did not. In the light of these findings, counselors of disabled veterans may want to re-examine the degree to which they emphasize certain factors when a business course is being considered as the vocational rehabilitation plan. In particular, it would appear that these counselors should look for a constellation of factors when such a course is being considered. Probability of success seems to be maximized when the veteran possesses a high school education, speed and accuracy in comparing sets of numbers, a pattern of interests demonstrating high regard for computational and clerical activities, and an orthopedic or respiratory type of disability. On the other hand, veterans with a neuropsychiatric disability and a high measured musical interest appear to be poor prospects for this type of training and consequently should be appraised very carefully before business training is recommended.

It was also postulated that veterans who completed their training would make a better vocational adjustment than veterans whose training was terminated short of completion. This hypothesis appeared to be supported by the findings. Rehabilitated veterans indicated that they are substantially more satisfied with their jobs than discontinued

veterans. Also, disabled veterans who completed their training demonstrated greater job stability, more advancement, and less unemployment. Rehabilitated veterans also reported higher earnings than discontinued veterans although the difference did not quite reach statistically significant proportions. It would appear that counselors of disabled veterans can recommend this course of training to qualified candidates with confidence that completion of the training will materially aid the trainee in his vocational adjustment.

There is a paucity of research on the counseling and vocational adjustment of disabled veterans. Consequently, a great many investigations could be indicated. Suggestions for further research made here have been limited to those that are a direct outgrowth of the present study.

Cross-validation of the results of this study in other geographical regions would appear to be desirable. Practical application of the findings of this study is limited to the geographical area encompassed by the sample because of possible variations in school standards and employment conditions in other localities. Local studies are recommended because most disabled veterans train in their home communities. Hence, counselors are concerned with prediction of success in local situations rather than on a national scale.

Disabled veterans have entered a number of training programs other than the one investigated in this study. Analysis of the occupational objectives selected by disabled veterans reveals that almost one-half of all the veterans who commenced training under Public Law 16 were preparing for employment in the skilled trades (50). There has been

almost no research conducted to demonstrate the relationship between counseling variables and successful pursuit of training in trade occupations. In addition, there is practically no evidence that reflects on the vocational adjustment of disabled veterans who have trained in this area. Consequently, investigation of the degree to which the counseling variables discriminate between successful and unsuccessful trainees in trade occupations and of the outcome of this training would appear to be needed.

The objective counseling variables utilized in this study reflect only a part of the total factors that the counselor must integrate and interpret during the counseling process. Many of the less tangible aspects of personality such as motivation, maturation, and attitude towards and adjustment to the disability are important in the prediction of success in training and in subsequent vocational adjustment. Therefore, research directed towards the quantification and analysis of these intangible variables is essential to the continued development of scientific counseling.

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APPENDIX A

THE LETTER

MICHIGAN STATE COLLEGE
EAST LANSING

DEPARTMENT OF GUIDANCE AND
COUNSELOR TRAINING

Dear

Many people have been concerned about how much the Veterans Administration training program has helped disabled veterans. In order to get the facts, I am making a study under the sponsorship of the Department of Guidance and Counselor Training at Michigan State College to find out if veterans have benefitted from their training under Public Law 16. We feel that information secured from this study will help the younger veterans who are now getting out of service. You can assist these veterans by taking a few minutes to fill out the enclosed form and returning it in the envelope provided for that purpose.

Permission to conduct this study has been officially granted by the Veterans Administration. However, all of the information you supply will be held in strict confidence and will be known only to the person conducting this study. Thank you very much for assisting in this project.

Very truly yours,

JOHN S. STOREY

APPENDIX B

THE QUESTIONNAIRE

QUESTIONNAIRE FORM

The information requested here is to be used as the basis for studying the effectiveness of the disabled veterans' training program. Since all answers will be held in strict confidence, please answer the questions in accordance with your true feelings. If not enough space is allowed for your answers, feel free to add additional comments on a separate sheet of paper.

NAME_____AGE_____TELEPHONE_____

1. In what branch of the armed forces did you serve? _____

2. How long were you in military service? _____years, _____months.

3. Check (x) one.

   ( ) I am unemployed. I have not worked for _____ months.

   ( ) I am now employed as a _____.

   I have held this job since _____.

   My duties are: _____

   _____

4. Please list the jobs you have held since your training under Public Law 16 was completed or interrupted. Do not include the present one.

		Period of Employment			
		From		To	
	Job Title	Mo.	Year	Mo.	Year
a.	_____	_____		_____	
b.	_____	_____		_____	
c.	_____	_____		_____	

5. Check (x) one.

   My gross weekly earnings (before deductions) are:

   ( ) $40.00 or less

   ( ) Between $41.00 and $50.00

   ( ) Between $51.00 and $60.00

   ( ) Between $61.00 and $70.00

   ( ) Between $71.00 and $80.00

   ( ) More than $80.00

6. My total earnings last year were approximately $_____.

7. Check (x) one.

( ) I dislike my present job very much.

( ) I dislike my present job quite a bit.

( ) I neither like nor dislike my present job.

( ) I like my present job fairly well.

( ) I like my present job very much.

8. Check (x) one.

How much has the training you received under Public Law 16 contributed to your success in your present occupation.

( ) Practically nothing.

( ) A little.

( ) Some.

( ) Quite a bit.

( ) Very much.

9. What advice would you give to a Korean veteran who is just getting out of the service and who has the same problems you had when you were released from the military service?

10. How do you think the disabled veterans training program could be improved?

11. If you discontinued your training before completion, what was the principal reason (or reasons)?

( ) Check here if you would like to know the results of this study. A summary of the findings will be mailed to you upon completion of the study if you desire.

APPENDIX C

THE FOLLOW-UP POSTCARD

Dear

Recently a form containing questions about your G.I. training was mailed to you. As yet, this form has not been returned. As your response is very important to the success of this study, it would be greatly appreciated if you would answer the questions and return the form to me promptly. Remember that your answers will be held in strict confidence.

Please mark the attached card in the appropriate place and mail it to me as soon as possible.

JOHN S .STOREY

( ) I will complete the form and return it very soon

( )I have mislaid the form but will fill it out if you will send me another copy.

( ) I do not plan to return the questionnaire.

(Signed) _____