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DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of the Ohio State University

By

Martha Crawford Muncieif, B.S., M.S.

* * * * * *

The Ohio State University
1973

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I

INTRODUCTION

Origin and Importance of Study

Many of the social problems of our times are intimately associated with work. This is illustrated in broad problem areas such as unemployment, automation, retirement, disability, and poverty. These problems are matters of national as well as individual concern. At the level of the individual, these problems take the form of vocational choice, selection and placement, morale, boredom and monotony, anomie, turnover, and general mental health.

Knowledge of the personal characteristics and situational forces related to work adjustment has increased enormously in recent years. We have learned much about people by the use of vocational interest inventories and devices for describing personality. An individual's vocational interest and preferences are associated with a great range of personal and background factors (Crites, 1969). Numerous studies have led to the theory that members of a vocation have similar personalities and similar histories of personal development (Roe, 1956; Siegelman and Peck, 1960). There is also support for the theory that vocational satisfaction,
stability, and achievement depend on the congruency between one's personality and the environment in which one works (Dawis, Lofquist, and Weiss, 1968). This congruency between individual personality and work environment can be used to predict satisfactoriness and satisfaction. These two dimensions of satisfactoriness and satisfaction are in turn indicators of the quality of an individual's work adjustment as proposed by Dawis, England, and Lofquist (1964) and Crites (1969).

Little of this knowledge of vocational and work adjustment has been applied to the vocation of teaching. Several surveys have been conducted which describe general areas of satisfaction and dissatisfaction for teachers. Chase (1951) provides a typical example of this kind of study. He used questionnaire returns from 1,784 teachers in surveying factors which tend to increase the satisfactions which teachers experience in their work. No studies have been found which deal with more than one aspect of work adjustment of teachers.

Three reasons support a study of work adjustment of teachers. First, there is a high attrition rate in the teaching profession. Teacher education is a costly investment if graduates do not remain in the profession. The financial and time costs of orienting new teachers into individual school systems should also be considered. It would seem beneficial to increase the tenure of teachers who have achieved satisfactory work adjustment, i.e., those who are
both successful and satisfied with teaching.

Reduction of unemployment and underemployment constitutes a second reason for studying work adjustment. Theories of work adjustment stress the need for individualized matching of people and jobs. Activities such as re-training should be based on a careful analysis both of the individual's unique abilities and needs and of the available work environments. This suggests a need for knowledge of the work personalities of teachers and the work environment involved in teaching.

Numerous psychologists have noted that vocational adjustment is a function of general personal adjustment, but the relationship is not a clear-cut one. Crites (1969) suggests that the nature of the occupation and the use the individual makes of it may intensify the relationship between vocational and general adjustment. Hoppock (1935) concluded from a study of 500 New York teachers that the major differentiation between satisfied and dissatisfied teachers was their general adjustment status. The satisfied teachers were better adjusted emotionally, had better interpersonal relationships, felt more successful, and were less subject to monotony and fatigue. Therefore, some evidence indicates that a better understanding of work adjustment among teachers might yield information which could contribute to improving general personal adjustment.
Conceptual Framework of the Study

The first formulation of A Theory of Work Adjustment was published in 1964 as a part of the Minnesota Studies in Vocational Rehabilitation. This theory provides the conceptual framework for the continuing research program of the Work Adjustment Project and for this dissertation. Minnesota researchers developed instruments for measuring variables in the theory and made considerable progress toward testing its theoretical propositions. The result was the following revised Theory of Work Adjustment quoted from Dawis, Lofquist, and Weiss (1968, pp. 3,5).

A Theory of Work Adjustment

The following Theory of Work Adjustment is based on the concept of correspondence between individual and environment. Correspondence between an individual and his environment implies conditions that can be described as: a harmonious relationship between individual and environment, suitability of the individual to the environment and of the environment for the individual, consonance or agreement between individual and environment, and a reciprocal and complementary relationship between the individual and his environment. Correspondence, then, is a relationship in which the individual and the environment are corresponsive, i.e., mutually responsive. The individual brings into this relationship his requirements of the environment; the environment likewise has its requirements of the individual. In order
to survive, i.e., exist, in an environment, the individual must achieve some degree of correspondence.

It is a basic assumption of the Theory of Work Adjustment that each individual seeks to achieve and maintain correspondence with his environment. Achieving and maintaining correspondence with the environment are basic motives of human behavior.

There are several kinds of environments, e.g., home, work, school, to which an individual must relate. Achieving and maintaining correspondence with one environment may affect the correspondence achieved and maintained in other environments. Work represents a major environment to which most individuals must relate.

The individual brings certain skills to the work environment. The work environment provides certain rewards (e.g., wages, prestige, personal relationships) to the individual. The individual's skills enable him to respond to the requirements of the work environment. The rewards of the work environment enable it to "respond" to the requirements of the individual. When their minimal requirements are mutually fulfilled, the individual and the work environment are described as correspondent. In the case of work, then correspondence can be described in terms of the individual fulfilling the requirements of the work environment, and the work environment fulfilling the requirements of the individual.
When an individual enters a work environment for the first time, his behavior is directed toward fulfilling its requirements. He also experiences the rewards of the work environment. If he finds a correspondent relationship between himself and the work environment, he seeks to maintain it. If he does not, he seeks to establish correspondence, or failing in this, to leave the work environment. There are many different kinds of work environments, many different kinds of individuals, and each work environment-individual relationship is idiosyncratic. In many cases, the initial relationship is not correspondent. In addition, both individuals and work environments are constantly changing. The continuous and dynamic process by which the individual seeks to achieve and maintain correspondence with his work environment is manifested as tenure in the job.

As correspondence increases, the probability of tenure, i.e., remaining on the job, increases. In addition, as correspondence increases, the projected length of tenure increases. Conversely, as correspondence decreases, both the probability of remaining on the job and the projected length of tenure decrease. Tenure is the most basic indicator of correspondence. It can be said, therefore, that tenure is a function of correspondence between the individual and his work environment.

From the basic concepts of correspondence and tenure it is possible to develop the concepts of satisfactoriness and
satisfaction. If the individual has substantial tenure, it can be inferred that he has been fulfilling the requirements of the work environment and that the work environment has been fulfilling his requirements. If the individual fulfills the requirements of the work environment, he is defined as a satisfactory worker. If the work environment fulfills the requirements of the individual, he is defined as a satisfied worker. Satisfactoriness and satisfaction indicate the correspondence between the individual and his work environment. Satisfactoriness and satisfaction, then are basic indicators of the degree of success an individual has achieved in maintaining correspondence between himself and his work environment. Satisfactoriness is an external indicator of correspondence, i.e., it is derived or obtained from sources other than the individual worker's own appraisal of his fulfillment of the requirements of the work environment. Satisfaction is an internal indicator of correspondence, i.e., it represents the individual worker's appraisal of the extent to which the work environment fulfills his requirements.

Organizational Framework

Statement of the Problem

The general purpose of this study was to investigate the work adjustment of vocational education teachers. Measures of vocational needs, job satisfaction, and job success were used in testing a portion of the Minnesota Theory of
Objectives and Hypothesis

The objectives of the study were:

1. To describe the vocational need patterns of secondary teachers of business education, home economics education and trade and industrial education.

2. To compare the vocational need patterns of successful teachers with need patterns of less successful teachers.

3. To compare the vocational need patterns of satisfied teachers with need patterns of less satisfied teachers.

4. To examine the relationship between job success and job satisfaction for secondary teachers of business education, home economics education, and trade and industrial education.

The major focus of the study was to test Proposition III of the Theory of Work Adjustment for the groups identified above. This proposition states that:

Satisfaction is a function of the correspondence between the reinforcer system of the work environment and the individual's needs, provided that the individual's abilities correspond with the ability requirements of the work environment (Dawis, Lofquist, and Weiss, 1968, p.11).

This proposition was restated into the following research hypothesis:
As the discrepancy between the reinforcer system of the teaching environment and the individual's vocational needs decreases, job satisfaction will increase.

Definition of Terms

Several terms have specific meanings as applied to this study. In order to avoid misinterpretation, the following definitions are given:

1. **Satisfactoriness** - evaluation of the individual's work behavior. This term was used synonymously with job success and was measured by a rating scale completed by the school administrator for each teacher.

2. **Satisfaction** - the individual's evaluation of stimulus conditions in the work environment with reference to their effectiveness in reinforcing his behavior. Job satisfaction, as defined here, was measured by the Minnesota Satisfaction Questionnaire.

3. **Vocational Needs** - specific reinforcing conditions thought to be important to job satisfaction. Vocational needs were measured by the Minnesota Importance Questionnaire.

4. **Reinforcer System of the Work Environment** - stimulus conditions available in the work environment for the satisfaction of various needs. Research in the Work Adjustment Project has led to the development of occupational reinforcer patterns (ORP's) for a representative sample of jobs, including those of secondary school teacher and
vocational school instructor (Borgen, 1968, Vol. XXIV and XXV).

Assumptions

Application of the Theory of Work Adjustment to the profession of teaching required two major assumptions. First, it was assumed that the Theory could be applied to various professions. The largest portion of the research done in the Work Adjustment Project has involved blue-collar workers rather than professional groups. A systematically cumulated body of knowledge dealing with work adjustment provided the framework for this study, but it was exploratory in its application to the teaching profession.

Proposition III from the Theory of Work Adjustment describes satisfaction as a function of the correspondence between the reinforcer system of the work environment and the individual's set of needs, provided that the individual's abilities correspond with the ability requirements of the work environment. Ability measurement of teachers is a complex job. This study assumed the existence of a correspondence between the teacher's abilities and the ability requirements of the job. This second assumption was based on the use of state certification requirements as the traditional method of affirming the qualifications of a teacher to enter the classroom.
Chapter I has stated the nature and scope of the investigation. The remaining chapters will establish the theoretical background of the investigation, outline procedures used to carry out the study, and report data findings. Chapter II contains a review of related literature and Chapter III delineates the procedure of the investigation, the research instruments used, and research objectives. Chapter IV reports and discusses the data gathered and Chapter V summarizes the investigation, states general conclusions, and suggests implications for further research.
II

REVIEW OF RELATED RESEARCH

Introduction

The studies which follow were chosen for inclusion in this chapter because of their close relationship to the problem. In order to establish relevance, research was grouped into five major categories:

1. Studies of Vocational Needs
2. Studies of Job Satisfaction
3. Studies of Job Success/Satisfactoriness
4. Studies of Job Reinforcers
5. Theories of Vocational and Work Adjustment

A computer search was made to locate meaningful studies which could be placed into one of the five categories. Sources included in this search were books, periodicals, journals, dissertations, pamphlets, and unpublished research reports.

The abundance of research in some areas, notably that of job satisfaction, resulted in the necessity to be highly selective in choosing studies to be included in this review. The general approach was to summarize the research in each area and to discuss in detail only those studies which
examined more than one aspect of work adjustment. An excep-
tion was made to include all research which concerned any
area of the work adjustment of teachers.

Studies of Vocational Needs

Work and its meaning in men's lives has been a topic
of interest since the beginning of civilization. This in-
terest became the basis for empirical studies of work by
social scientists beginning about 1910 (Robinson, Athanasiou
and Head, 1969). Early researchers attempted mainly to solve
problems which employers were having with employees. Many
efforts involved manipulating the working situation in order
to increase production. One of the best known studies of
this type involved the Western Electric Company between 1927
and 1932 at its Hawthorne plant in Chicago (Robinson, et al.,
1969).

The insights provided by the Hawthorne experiment stim-
ulated a shift in emphasis from the study of the physical to
the emotional aspects of work. Numerous attempts were made
to establish a firm relationship between workers' attitudes
and the various aspects of job performance. Herzberg, Maus-
ner, Peterson, and Capwell (1957) cited fourteen studies
showing a positive relationship between morale and productiv-
ity, nine studies showing no relationship, and three studies
showing an inverse relationship.

One explanation of this apparent paradox involves meth-
odological considerations. There are definitional and
psychometric problems involved in working with concepts such as "morale," "motivation," satisfaction," and "attitude." The problem is compounded when the researcher attempts to isolate "work attitudes," from "general attitudes."

A promising approach to the understanding of work attitudes was the development of theories of motivation by Murray and Maslow, both of which centered on basic needs. Maslow's work (1954, 1970) is the better known of the two and suggests a hierarchy of needs. The need of highest order is that of self actualization and usually rests upon some prior satisfaction of the physiological, safety, love, and esteem needs.

The application of this need theory to vocational psychology is obvious. In our society there is probably no single situation which is potentially so capable of giving some satisfaction at all levels of basic needs as is the occupation. Roe (1956) suggests that occupations may have become so important in our culture simply because so many needs are well satisfied by them. Thus the apparent relevance of need theory to the study of work plus the increased precision of measurement due to clearer definition of terms may make this a fruitful addition to the study of work adjustment.

Wolf (1970) used Maslow's work to formulate a need gratification theory which would account for some of the discrepancies in work motivation research. The theory states (p. 91):
Job motivation can be considered as a sub-classification of general motivation; as such, it follows the principles of the need hierarchy (Maslow, 1954). The individual will actively seek to gratify his active need or needs, essentially ignoring both lower level needs that are already gratified and higher level needs that have not yet emerged.

Dissatisfaction results either from the frustration of the gratification of an active need or from an interruption or threatened interruption to the continued gratification of previously gratified (lower level) needs. Satisfaction results from the gratification of any need; however, satisfaction is greater when a previously ungratified need is gratified on an on-going basis.

Job motivation occurs when an individual perceives an opportunity to gratify an active need through job-related behaviors. The strength of the job motivation is a function of the individual's subjective probability estimate of the likelihood that the desired consequences will follow given job-related behaviors.

Several research implications are suggested for the need gratification theory but the theory is untested at present.

A study by Schaffer (1953) is particularly appropriate because need theory is used for a prediction of job satisfaction. He developed a theory of job satisfaction which states, "Overall job satisfaction will vary directly with the extent to which those needs of an individual which can be satisfied in a job are actually satisfied; the stronger the need, the more closely will job satisfaction depend on its fulfillment (p. 3)." Three questionnaires were used: one to measure the strength of 12 different needs, a second to measure the extent to which the job permitted satisfying each need, and a third measuring general job satisfaction. A multiple correlation coefficient of .58 was obtained between the satisfaction of each person's two strongest needs
and job satisfaction. In other words, job satisfaction did tend to vary with the extent to which needs were met in the job. He found no significant correlation between need strength and job satisfaction. According to Super (1957), Schaffer's study lends support to the phenomenological theories which suggest that vocational satisfaction occurs when the dominant needs find outlets, i.e., when the individual can play the desired role in work.

Schaffer's study (1953) was used as a basis for some of the most comprehensive research which has been accomplished on the measurement of vocational motivation. The Minnesota Studies of Vocational Rehabilitation under the general direction of Dawis, England, and Lofquist developed their own measure of vocational needs. The Minnesota Importance Questionnaire (MIQ) asked the respondent to "draw a verbal picture" of his ideal job. Twenty relevant characteristics are presented in a paired comparison format to assist him in describing his needs. The result of this procedure is a profile of scale values for each individual (Weiss, 1969). Research with the MIQ will be discussed in more detail in the section on work adjustment.

Siegelman and Peck (1960) also examined underlying distinguishable need patterns. Three propositions formed the basis of their research:

1. Individuals choose their vocations because they believe that the occupation permits them to satisfy some of their
personality needs.

2. The job-role requirements of a given vocation satisfy some of the dominant personality needs of a certain kind of individual.

3. The majority of individuals in a given vocation, therefore, share a common personality need pattern that is different from the personality need patterns characterizing individuals in other vocational groups.

Four assessment devices were used to measure needs of several professional groups. Members of the vocations studied did manifest distinct and different need strength patterns which led the researchers in the development of personality typologies.

Two additional studies of vocational needs are noteworthy because the research used samples of teachers. Scan- drette (1962) used the Edward Personal Preference Schedule as a measure of need strength to determine whether or not it would discriminate between students preparing to teach elementary school, secondary school, and a norm group. He found women student teachers preparing for secondary positions made significantly higher scores than the norm group on order and dominance and significantly lower scores on affiliation and succorance. Maslin and Stern (1966) used the Stern Activities Index to study the interrelationships among teacher personality, teacher behavior in the classroom, and pupil response. Among the results reported were strong relationships
between teachers' needs for achievement, emotionality, and interest in humanities with high achievement scores of pupils.

These studies have demonstrated that individuals do have different perceptions of their work or vocational needs. The wide variation in vocational needs indicates the likelihood that different kinds of environments are necessary in order to result in job satisfaction for different individuals. The exact nature of the relationship between needs and job satisfaction appears to be an appropriate area for further research.

**Studies of Job Satisfaction**

Job satisfaction is most often defined as a single concept and then treated in research as a complex set of variables. Both conceptual and operational definitions abound in the substantial amount of research which has been conducted on this topic. Brophy (1959) has identified four types of theories of job satisfaction: (1) role theories, (e.g., Bullock, 1952), which define job satisfaction as the degree of compatibility between one's perceived role, as imposed upon him by the job situation, and his concept of ideal role of the position; (2) self theories (e.g., Brophy, 1959), which explain job satisfaction as a function of the correspondence between the worker self-concept, both real and ideal, and the occupational role he plays on the job; (3) expectation theories (e.g., Katzell, 1964, in which job
satisfaction is a function of the characteristics of the job and the adaptation levels the individual has for various job characteristics. The fourth group, need theories, are by far the most common type of theories (e.g., Schaffer, 1953; Holland, 1966; Herzberg, Mausner, and Snyderman, 1959; Hulin and Smith, 1965; Dawis, Lofquist, and Weiss, 1968; Crites, 1969). They conceptualize job satisfaction as a function of the degree to which the needs of the individual are satisfied by the characteristics (the reinforcers, rewards, or satisfiers) of the job.

This review is concerned with studies based upon the various interpretations on the effect of need theories upon job satisfaction. The well-known reviews of Brayfield and Crockett (1955) and Herzberg, Mausner, Peterson, and Capwell (1957) are valuable to the reader interested in other theories of job satisfaction. A more recent critique by Crites (1969) thoroughly describes theories, instrumentation, and research in this area.

One of the most comprehensive programs of research on the measurement of satisfaction was initiated by Smith and associates at Cornell University during the early 1960's. The primary purpose of this project was to construct a measure of satisfaction which would possess both discriminate and convergent validity (Smith, Kendall, and Hulin, 1969). In a review of job satisfaction instruments, the Job Description Index developed by Smith was described by Robinson,
et al., (1969) as having the best credentials. He stated that "lengthy, extensive and competent research went into the construction of this instrument, which has been administered to workers at all organization levels on a nationwide basis (p. 101)."

Vroom (1964) summarized research emphasizing the importance of individual motivational variables and work roles in determining job satisfaction. He distinguished between (p. 163):

. . . models which assert that (1) job satisfaction or some conceptually similar variable is a function of the difference between the amount of some outcome provided by a work role and the strength of a related desire or motive on the part of the person and (2) those which assume that job satisfaction is a function of the product of a work role variable and a related motivational variable.

The study described previously by Schaffer (1953) supports this latter model. He measured the strength of 12 needs, the extent to which each need was being satisfied in the work environment, and overall job satisfaction. In general, the greater the relative strength of the need, the greater the positive correlations between the measure of need satisfaction and overall job satisfaction.

Extensive research involving job satisfaction has been done as a part of the University of Minnesota Work Adjustment Project. Job satisfaction is measured by the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, and Lofquist, 1967) in terms of 20 separate components of job satisfaction in addition to a general satisfaction score. This instrument
is used in testing the portion of the Theory of Work Adjustment (Dawis, Lofquist, and Weiss, 1968, p. 11) which states:

Satisfaction is a function of the correspondence between the reinforcer system of the work environment and the individual's needs provided that the individual's abilities correspond with the ability requirements of the work environment.

One study which tested this portion of the Theory was done by Betz (1969). Five statistical measures of vocational needs/occupational reinforcers correspondence were calculated and applied as predictors of job satisfaction. Two correspondence measures were found to predict job satisfaction with better than chance success.

Need satisfaction is not the only variable which has been used to predict job satisfaction. Herzberg, Mausner, Peterson, and Capwell (1957) discussed the relationship of age, tenure, salary, and job level to a worker's job satisfaction. They concluded that the available studies revealed a definite relationship between these four variables and levels of job satisfaction. Because the relationships described were not always linear, Hulin and Smith (1965) examined the same four variables. They reported that "it seems likely that a linear model with three variates as predictors (age-tenure, job level-salary, and present salary minus desired salary)" would account for most of the variance and be relatively independent from each other (p. 216).

A study by Vollmer and Kinney (1955) yielded a high correlation between amount of education and job satisfaction.
Blai (1970) examined job satisfaction in relation to work values of women. He found that the need for Mastery-Achievement was the only work value which consistently crossed all demographic variables considered for women.

Ronan (1970) reviewed the literature on variables relating to job satisfaction. He found that in many studies the following dimensions of job satisfaction emerged (p. 2):

(a) the content of the work, actual tasks performed, and control of work,
(b) supervision of the direct sort,
(c) the organization and its management,
(d) opportunities for advancement,
(e) pay and other financial benefits,
(f) co-workers, and
(g) working conditions.

He concluded, however, that the relationships among the variables are complex and also tend to be specific to a situation rather than generalizable.

Two final studies are worthy of mention because they dealt with job satisfaction among teachers. In Hoppock's pioneer research (1935) with 500 teachers in metropolitan New York, only 10 percent of the sample actually indicated dissatisfaction with their work. A major finding was the strong positive relationship between vocational satisfaction and overall general adjustment. Chase (1951) used questionnaire returns from 1,784 teachers in 43 states in surveying factors which tend to increase the satisfactions which teachers experience in their work. He presents a table of 11 specified conditions which the teachers stated contributed
greatly to their satisfaction. Teachers rated as superior by their principals were more satisfied than a below-average and a randomly selected group.

Job satisfaction is an extensively researched variable whose principle components remain elusive. The studies reported here have each dealt with vocational needs as a function of satisfaction. Job satisfaction has many other dimensions, but need theory seems to have the most promise in furthering understanding of satisfaction.

**Studies of Job Success**

Through numerous studies behavioral scientists have attempted to establish a relationship between workers' attitudes and the various aspects of job performance. In a survey of literature, Vroom (1964) found a median correlation of .14 between job satisfaction and job performance - a relationship which has little theoretical or practical importance.

Yet attempts to relate these two variables are logical. Researchers have manipulated performance success and failure in laboratory situations and studied its effect on numerous variables. The results are generally consistent with the assumption that telling an individual he has performed well on a task is rewarding (Vroom, 1964). Vroom has an interesting explanation for the discrepancy between results in laboratory and field studies. He states (p. 146):

> In the laboratory experiment, performance is manipulated; individuals are told that they have
performed effectively or ineffectively, regardless of their actual performance. On the other hand, field studies use measure of actual performance. It is possible that performance as measured bears no relation to workers conceptions of their performance. The latter is the variable which should be expected to affect satisfaction; a relationship between actual level of performance and satisfaction is predicated on the assumption that workers have accurate knowledge concerning their performance. If this explanation is correct, then we would expect to find a positive relationship between estimates by the worker of his level of performance and his job satisfaction, even though there was no association between the latter variable and actual performance.

This explanation is consistent with Hoppock's finding (1935) that satisfied teachers said they were making a success of their job more frequently than did dissatisfied teachers.

An interesting approach in exploring this relationship was taken by Siegel and Bowen (1971). They tested three possible hypotheses of the relationship between satisfaction and performance:

(1) Satisfaction determines performance, with satisfaction measured prior to performance.

(2) Satisfaction is determined by performance, so that it is assessed at a point subsequent to performance.

(3) Satisfaction-performance relationship may be moderated by a number of variables but both may be measured at the same time.

The three research designs were used to collect data at three-week intervals for 86 graduate students assigned to 22 task groups. Cross-lob correlations indicated support for the satisfaction - follows - performance model. In addition,
self-esteem was found to moderate the relationship between performance and satisfaction.

The possibility of satisfaction as a moderator variable in the prediction of job success has been the major concern of two recent investigations. Carlson, Dawis, and Weiss (1969) were primarily concerned with the correspondence between ability level of the worker and his job satisfaction in an attempt to predict job success. Job satisfaction did affect the relationship of ability test scores with success criteria for men but results for women workers were less conclusive. Betz (1971) used a different approach to examine the same relationship. Level of job satisfaction was used as a basis for dividing workers into three groups. Results were similar to the Carlson study, i.e., the relationship under consideration was present for men but results were mixed for women.

Much of the ambivalence surrounding studies of job success may be due to inconsistency in definition of the term. Crites (1969) used abstracts from over 500 studies in an attempt to identify and enumerate as many criteria of vocational success as possible. He reported that almost two-thirds of the criteria were operationally defined psychological scales. In most cases it was the worker's supervisor who was asked to evaluate his success. The second most popular criteria was output, or productivity.

The definition of job success has been a particularly
difficult problem within the teaching profession. There is little consensus on the components of good or effective teaching. Numerous attempts have been made to quantify teacher job success along psychological dimensions through the use of various rating devices. Inter-rater reliability coefficients for these devices have usually been low. A promising trend in the measurement of teacher job success involves the establishment of observable performance criteria. In the future, teachers, like many other workers, may be evaluated on productivity as a primary indicator of job success.

Studies of Job Reinforcers

Just as occupations can be differentiated in terms of the abilities required for successful performance, they can also be differentiated in terms of the reinforcers, rewards, or satisfactions that they provide (Weiss, 1969). The exact role of job reinforcers in the total process of work adjustment has not yet been clearly defined. The four studies reported below use varying terminology, but each attempts to relate job reinforcers to one or more other work adjustment variables.

Maslin and Stern (1966) completed an extensive empirical study on unconscious motivations for teaching. Twenty-nine teachers were interviewed intensively about their primary sources of gratification from teaching. The gratifications sought in different teaching roles were:
<table>
<thead>
<tr>
<th>Role</th>
<th>Gratifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Practical</td>
<td>Instrumental rewards</td>
</tr>
<tr>
<td>2. Status-striving</td>
<td>Prestige</td>
</tr>
<tr>
<td>3. Nurturant</td>
<td>Children's affection</td>
</tr>
<tr>
<td>4. Nondirective</td>
<td>Children's autonomy</td>
</tr>
<tr>
<td>5. Critical</td>
<td>Promoting teachers' rights</td>
</tr>
<tr>
<td>6. Preadult-fixated</td>
<td>Vicarious participation</td>
</tr>
<tr>
<td>7. Orderly</td>
<td>Obsessive compulsions</td>
</tr>
<tr>
<td>8. Dependent</td>
<td>Support from superiors</td>
</tr>
<tr>
<td>9. Exhibitionistic</td>
<td>Children's admiration</td>
</tr>
<tr>
<td>10. Dominant</td>
<td>Children's obedience</td>
</tr>
</tbody>
</table>

Two related studies done at the University of Minnesota were designed to test that proposition of the Theory of Work Adjustment which states:

Satisfaction is a function of the correspondence between the reinforcer system of the work environment and the individual's needs, provided that the individual's abilities correspond with the ability requirements of the work environment (Dawis, Lofquist, and Weiss, 1968, p. 11).

Golden and Weiss (1968) examined job satisfaction measures for groups differing in degree of vocational need-job reinforcer correspondence. The major hypothesis under investigation was the following: "The average satisfaction of the high need-low reinforcement group is less than that of the high need-high reinforcement group (p. 2)." Support for the hypothesis was found in 13 of the 20 scales used. Betz (1969) examined the same proposition but placed particular emphasis on trying out five need-reinforcer correspondence measures. Results were statistically significant for two of the three groups examined using two of the correspondence measures.

Kuhlen's study (1963) had a slightly different approach. "Perceived need satisfaction opportunities," as defined in his research, were basically job reinforcers or rewards. Kuhlen
tested two hypotheses which he described as follows (p. 56):

... a first hypothesis was that those individuals whose measured needs are relatively stronger than the potential of the occupation for satisfying those needs (as they perceived this potential) will tend to be frustrated and hence to be less well satisfied with their occupation. Where needs and the perceived need-satisfaction potential of the occupation are more in harmony, it was anticipated that satisfaction with occupation would be rated higher. However, since a career role tends to be primary for males and relatively secondary for females, a second hypothesis was that these relationships will hold to a greater degree among men than among women.

Teachers were given instruments measuring needs, perceptions of need satisfaction in teaching, and occupational satisfaction. A discrepancy score was obtained between strength of one's needs and the perceived potential of the occupation for satisfying the particular need. These scores were summed algebraically and the total index was then correlated with the occupational satisfaction ratings. The obtained correlation for the male sample was .25 (significant at the .01 level). The correlation of .02 for the female sample was not significant.

The studies reported above indicate that the direction of the difference between needs and job reinforcers may be important in predicting satisfaction. When the individual's preferences are not met by the reinforcers in the work environment, the degree of dissatisfaction is higher. On the other hand, when the environment provides the individual with more than he prefers, the degree of satisfaction is greater (Weiss, 1969). Finally, while saliency appears to be
increasing in women, the occupation may still play a secondary role for most women. This means that the occupation may not yet be a major source of need gratification for most women.

Theories of Work Adjustment

Common to all definitions of work adjustment is the idea that it refers to the condition of the individual in relation to the world of work at any given moment. General agreement has not been reached, however, concerning the nature of the individual's condition and why he reacts to work as he does (Crites, 1969).

Super (1957, p. 300) suggested that "vocational adjustment is a function of the degree to which an individual is able to implement his self-concept, to play the kind of role he wants to play, to meet his important needs in his work or career." This type of self-realization should result in long-term satisfaction to the individual. But the important related concept of success should also be considered. Super views vocational adjustment as being largely dependent upon success, particularly as judged by the individual himself but also to a lesser degree as judged by others important to him. Work adjustment requires success as a basis for satisfaction.

A very thorough review of literature was completed by Scott, Dawis, England, and Lofquist (1958). In their search
for a research definition of work adjustment they came to the following conclusions:

(1) Work adjustment is inferred from two primary sets of indicators which will be referred to as "satisfaction" and "satisfactoriness." "Satisfaction" includes overall job satisfaction and satisfaction with various aspects of the individual's work environment. "Satisfactoriness" is indicated by his productivity and efficiency.

(2) The individual should be the basic unit in the study of work adjustment.

(3) Work adjustment occurs over a period of time and may differ in the same individual for different periods of time.

(4) Work adjustment patterns may differ for different occupations.

(5) The study of interrelationships among criteria is probably the most neglected aspect of research in this field.

(6) Work adjustment is likely to be affected by such factors as the individual's age, sex, education, training, personality, and adjustment outside the work situation.

An equally thorough and more recent review was completed by Crites (1969). Historical, economic, and sociological concepts of work adjustment are discussed. Particular emphasis is placed on the psychological theories, the most prominent of which have been the concepts of vocational development tasks. An interesting conclusion is made regarding the variables of success and satisfaction. Crites states
that these variables cannot be conceived of as dimensions of vocational adjustment, but rather as independent outcomes of the vocational adjustment process.

Because work occupies a central position in our society, the extent of vocational maladjustment is of concern to mental hygiene. Shaffer and Shoben (1956) indicated that vocational maladjustment is shown in many ways: amount of labor turnover, absenteeism at work, tardiness at work, inefficiency and through dissatisfactions shown by employee surveys. They suggested three sources of maladjustment (pp. 569 - 570):

(1) some fault of the job itself or the worker's competency
(2) defects in social organization and interpersonal relations
(3) the presence of general personal maladjustment

Crites' summary of research on work alienation showed that only about 15 percent of the workers studied were alienated from their jobs. Rather than widespread vocational maladjustment, he suggests that a more likely hypothesis is that most workers in our society are indifferent to their jobs (Crites, 1969).

Another difficulty in defining work adjustment results from the generality of the concept of adjustment. Is work adjustment synonymous with general or personal adjustment? While there are a few dissenting viewpoints, the most prevalent opinion is that held by Super (1957). He stated that general adjustment is a synthesis of special adjustments.
Thus changing the nature of one of the major components of the synthesis, i.e., work adjustment, should change the nature of the synthesis. Crites found very little research dealing with this relationship. He concluded that general and vocational adjustment are related and stressed the need of further research on why the relationship exists and what variables affect it.

Each of the components of vocational psychology discussed in this chapter - satisfaction, success, vocational needs, job reinforcers, and adjustment - taken separately has made a contribution to our understanding of man's relation to work. The description, prediction, and facilitation of work adjustment have become areas of major concern to the vocational psychologist and educator. A conceptual framework was needed to organize the accumulated research results and to give direction to future research.

Several models of work adjustment have been proposed (Crites, 1969; Korman, 1970; Shaffer and Shoben, 1956). The most comprehensive of these models is the Theory of Work Adjustment devised by Dawis, England, and Lofquist in 1964 and revised by Dawis, Lofquist, and Weiss in 1968. The theory is built on basic psychological principles of stimulus, response, and reinforcement and has generated numerous testable hypotheses.

The major components in the theory are the individual and the work environment. A basic assumption of the Theory
of Work Adjustment is that each individual seeks to achieve and maintain correspondence with his environment.

If the individual fulfills the requirements of the work environment, he is defined as a satisfactory worker. If the work environment fulfills the requirements of the individual, he is defined as a satisfied worker. Satisfactoriness and satisfaction indicate the correspondence between the individual and his work environment. The stability of the correspondence between the individual and the work environment is manifested as tenure in the job. The continuous and dynamic process by which the individual seeks to achieve and maintain correspondence with his work environment is called work adjustment (Dawis, et al., 1968, p. 5).

(See Chapter I, pp. 4 - 7, for a complete statement of the theory).

Summary

This review of literature has attempted to point out strengths, weaknesses, and inconsistencies of studies which dealt with various aspects of vocational adjustment. Individuals have different perceptions of their vocational needs and workers in some occupations appear to have similar need patterns. Job satisfaction is most frequently conceptualized as a function of the degree to which the needs of the individual are satisfied by the characteristics of the job. It is apparent that job satisfaction has many other dimensions whose relationship may be very complex.

Behavioral scientists have attempted through numerous studies to establish a relationship between job satisfaction and job success. It seems more realistic to think of
satisfaction and success as independent outcomes of the work adjustment process.

Just as occupations can be differentiated in terms of the abilities required for successful performance, they can also be differentiated in terms of the reinforcers, or rewards, that they provide. Studies reported in this review indicate that the difference between needs and job reinforcers may be important in predicting job satisfaction.

Research literature further indicates that the Minnesota Theory of Work Adjustment is a useful way of conceptualizing the problems of work. If the gaps in our knowledge of work adjustment can best be filled by studies grounded in theory, the present study may contribute to a more complete understanding of man's interaction with his work environment through its application of a general theory to the work adjustment of vocational education teachers.
III

PROCEDURES

Chapter III describes the procedures that were used to obtain data for the study. Sample designation, instrument selection, data collection, and data analysis constituted four procedural steps to apply work adjustment theory to vocational education teachers.

Sample Designation

High school teachers of business education, home economics education, and trade and industrial education currently employed in public high schools composed the population. A sample from this population was selected for a project entitled "Vocational Teaching in Diverse Cultural Settings," funded by The Center for Vocational and Technical Education, The Ohio State University, Columbus, Ohio. This resulted in the selection of approximately 120 teachers from each of the three vocational areas or a total of 360 participants. One additional step was taken for this specific study in order to limit the total number of participants to 180 persons. The sampling procedure for the larger project is described first, followed by specific selection procedures for this study.
A multistage sampling process was used to select participants in the three vocational areas. The sample selection process to obtain business education teachers is described. An identical procedure was used to select home economics teachers and trade and industrial education teachers.

First, letters were sent to all state supervisors and teacher educators of business education whose names appeared on an official directory published by the U.S. Office of Education, Division of Vocational and Technical Education. Recipients were asked to supply the names and addresses of 10 highly successful teachers of business education.

Responses were received from 185 educators. A total listing of teachers' names was then compiled by states. Each state supervisor was sent the names of all teachers submitted from his or her state for verification. He or she was then asked to randomly select 10 additional teachers from the state listing of business education teachers whose names had not appeared on the original list. These teachers were used as a comparison group in the study.

The principal of each teacher named in the sample of successful and comparison teachers was then contacted. The principal was asked to rate, on a preliminary rating form containing 10 multiple choice questions and an equal interval scale, the business education teacher's effectiveness in relation to all other teachers in the school. (See
The preliminary rating scale was devised to obtain a verification of the selection of successful teachers by two referent groups, state supervisors/teacher educators and high school principals. A total of 303 rating forms was returned.

The preliminary rating forms were scored and invitations to participate in the study were sent initially to the teachers with the 80 highest scores in the successful teacher group and to teachers with the 80 lowest ratings in the comparison group. Additional teachers were selected in the same manner later when some teachers were found to have primarily administrative duties, to have changed jobs, or to have no interest in participating in the project.

One hundred and twenty-two teachers eventually expressed a desire to participate in the project and 101 teachers completed the entire project, Vocational Teaching in Diverse Cultural Settings.

One additional step was taken for sample selection for the dissertation study. Using a table of random numbers, 30 teachers of business education were selected from the successful group and 30 teachers were selected from the comparison (or less successful) group. This gave a total of 60 business education teachers in the dissertation study.

The sample for this study, therefore, consisted of 180 teachers in three vocational areas. Within each
vocational area there were 30 teachers classified as successful and 30 teachers classified as less successful. Table 1 provides a summary of the sampling procedure in the three areas.

Instrument Selection

Four sets of instruments were needed to collect biographical data from each respondent and to measure the variables of vocational needs, job success, and job satisfaction. A search was made of existing instruments with demonstrated validity and reliability. Two questionnaires - the Minnesota Importance Questionnaire and the Minnesota Satisfaction Questionnaire - were selected for use in the study. Two additional questionnaires were developed to collect biographical data and to measure job success.

Administrator rating form

It was deemed crucial to determine a means by which the initial selection of successful teachers could be verified as indeed being successful teachers. It was also necessary to determine whether or not those teachers in the comparison group differed significantly in perceived effectiveness from the successful teachers.

The administrators' rating form was structured to obtain a picture of each teacher's effectiveness in relation to other teachers in the school. The instrument contained 10 multiple-choice items, together with a vertical scale
<table>
<thead>
<tr>
<th>Steps in Sample Selection</th>
<th>Trade &amp; Industrial Education</th>
<th>Business Education</th>
<th>Home Economics Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) State supervisors and teacher educators contacted for names of successful teachers</td>
<td>249</td>
<td>359</td>
<td>565</td>
</tr>
<tr>
<td>(2) Number of responses with suggestion of teachers for project</td>
<td>146</td>
<td>185</td>
<td>206</td>
</tr>
<tr>
<td>Total number of teachers' names submitted by respondents</td>
<td>944</td>
<td>1176</td>
<td>982</td>
</tr>
<tr>
<td>(3) Principals contacted for rating of teachers</td>
<td>944</td>
<td>1176</td>
<td>982</td>
</tr>
<tr>
<td>(4) Number of rating forms returned by principals</td>
<td>709</td>
<td>303</td>
<td>880</td>
</tr>
<tr>
<td>(5) Rating forms were scored and these teachers were asked to participate in the project</td>
<td>240</td>
<td>168</td>
<td>189</td>
</tr>
<tr>
<td>(6) Number of teachers who agreed to participate in the project</td>
<td>143</td>
<td>122</td>
<td>133</td>
</tr>
<tr>
<td>(7) Number of teachers who completed the entire project</td>
<td>120</td>
<td>101</td>
<td>120</td>
</tr>
<tr>
<td>Steps in Sample Selection</td>
<td>Trade &amp; Industrial Education</td>
<td>Business Education</td>
<td>Home Economics Education</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------------------</td>
<td>--------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>(8) Number of teachers asked to participate in the dissertation study</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Number of useable returns from participants</td>
<td>57</td>
<td>49</td>
<td>55</td>
</tr>
</tbody>
</table>
marked Superior, Excellent, Above Average, Average, and Below Average. It also contained a confidence-level rating ranging from "Very Confident" to "Very Doubtful." (See Appendix A).

The 341 principals of teachers in the final sample also completed a comprehensive rating form. This instrument contained 161 items and involved a more complete analysis of the teacher's characteristics and performance. One hundred of the 161 items correlated at $r > .50$ with the total score of the instrument. These 100 items were used in a composite score.

A Pearson $r$ was computed which used these composite scores from the comprehensive rating correlated with scores from the preliminary rating form. This test showed a correlation of $r = .696$, significant at .001 (Ferguson, 1972). The administrator preliminary rating form thus appeared to be an adequate measure of teacher effectiveness.

**Biographical data**

Each of the teachers participating in the project, "Vocational Teaching in Diverse Cultural Settings," was asked to complete data inventories to provide personal and professional data. Existing research was used to isolate those variables which might have a moderating influence on job satisfaction or job success. Eight variables were selected: subject matter area, age, sex, race, education,
marital status, number of years in present position, and number of years of teaching experience. A multiple-choice format was selected for ease in handling the data (See Appendix B for those items which pertained to this study).

**Minnesota Importance Questionnaire**

The Minnesota Importance Questionnaire (MIQ) is a 210-item paired-comparison instrument designed to measure 20 vocationally-relevant need dimensions. The statements used to represent each of the 20 vocational needs are as follows (Gay, Weiss, Hendel, Dawis, and Lofquist, 1971, pp. 1 - 2):

1. **Ability Utilization**: I could do something that makes use of my abilities.
2. **Achievement**: The job could give me a feeling of accomplishment.
3. **Activity**: I could be busy all the time.
4. **Advancement**: The job would provide an opportunity for advancement.
5. **Authority**: I could tell people what to do.
6. **Company Policies and Practices**: The company would administer its policies fairly.
7. **Compensation**: My pay would compare well with that of other workers.
8. **Co-workers**: My co-workers would be easy to make friends with.
9. Creativity: I could try out some of my own ideas.

10. Independence: I could work alone on the job.

11. Moral Values: I could do the work without feeling that it is morally wrong.

12. Recognition: I could get recognition for the work I do.


15. Social Service: I could do things for other people.

16. Social Status: I could be "somebody" in the community.

17. Supervision - Human Relations: My boss would back up his men.


19. Variety: I could do something different every day.

20. Working Conditions: The job would have good working conditions.

Each of the 20 statements listed above is paired with every other statement, yielding 190 pairs. For these 190 items the individual is asked to make a comparative judgment
by choosing the statement of the pair which represents the more important characteristic of his ideal job. For the final 20 items the individual is asked to indicate whether each of the need dimensions is important or not important in his ideal job (Gay, et al., 1971).

The reliability of the MIQ has been evaluated in three ways: (1) the internal consistency of the scales (2) the stability of MIQ scale scores over time and (3) the stability of MIQ profiles over time. Scale internal consistency was investigated by calculating the Hoyt reliability coefficients for each MIQ scale for each of nine different subject groups. The median reliability coefficients for the groups ranged from .77 to .81. Stability of MIQ scale scores was calculated for the same groups. The median scale stability coefficients ranged from .48 to .89 for immediate retesting. MIQ profile stability coefficients ranged from .95 for the immediate retest to .70 for the four month retest interval group (Gay, et al., 1971). (See Appendix C).

Minnesota Satisfaction Questionnaire

The Minnesota Satisfaction Questionnaire (MSQ) consists of 100 items which refer to 20 reinforcers in the work environment. The individual is asked to indicate his satisfaction with the reinforcers in his present job through five response alternatives: very dissatisfied, dissatisfied,
neither dissatisfied nor satisfied, satisfied, and very satisfied (Weiss, Dawis, England, and Lofquist, 1967). The 20 scales' titles are identical to those used for the MIQ. There are five items in each scale, and the scales can be summed for a total job satisfaction score.

Hoyt reliability coefficients for the scales of the MSQ ranged from .93 to .78. Data on the stability of the scores on the MSQ scales were obtained at time intervals of one week and one year. Median coefficients for a one-week interval were .83 and .61 for a one-year interval (Weiss, et al., 1967). (See Appendix C).

Data Collection

The sample designation procedure described earlier took place from approximately June 1971 to December 1971. Follow-up postal cards and letters were used to insure representation from all states. By January 1972 the project participants had been selected and agreed to participate.

Further sample selection for the dissertation study was done in April 1972 and all questionnaires were mailed the same month. Follow-up postal cards and telephone calls were used to insure a maximum number of responses. The total sample consisted of 180 teachers, equally divided among the three subject matter areas. One hundred and sixty-nine questionnaires were returned of which 161 were complete and useable.
The return rate of 94 percent was unusually high. Respondents were provided with an honorarium for participation in the larger project and this probably was the main source of motivation for completing the questionnaire. In addition, an attempt was made to enliven the procedure by inserting cartoon "Take a Break" pages in the questionnaires and including a stick of gum on a page between the two instruments.

Preliminary Data Analysis

Administrator Rating Form

This instrument was used to classify teachers as "successful" or "less successful" and therefore, measures the variable of job success. A simple weighting process of each score according to the confidence level of the rater was used to determine a score ranging from 20 - 400. This was accomplished by assigning a maximum value of five to each of the 10 multiple-choice questions. This score was multiplied by the confidence level (Very Confident = 4 to Very Doubtful = 1) to adjust total score according to the administrator's confidence in his own rating. The same weighting process was used with the continuous scale. The scores on both parts of the instrument were then combined.

Sample designation consisted of selecting teachers with the highest scores among those nominated as highly successful to be classified as "high job success." Teachers
with the lowest scores among the comparison group were classified as "low job success."

**Minnesota Importance Questionnaire**

This instrument was used to quantify the variable of vocational needs. Scoring of the MIQ was done by Vocational Psychology Research at the University of Minnesota. Basic scoring included computation of **adjusted scale values** for the 20 vocational need scales, and a **total circular triads** score.

MIQ adjusted scale values can range from -4.0 to +4.0. Scale values greater than zero indicate needs that are "important" to the individual and those below zero indicate needs that are "unimportant." Each person's profile is determined solely by his or her response to the MIQ rather than by comparison with any normative group. The circular triad score was used to indicate factors which might invalidate a MIQ profile, such as random responding, response set, and instability of the individual's vocational needs. A circular triad is an illogical sequence of choices which can be described in the following manner (Gay, et al., 1971, pp. 4 - 5):

1. A is chosen over B
2. B is chosen over C
3. C is chosen over A

Three questionnaires were discarded from the study
because of the circular triad score. For each remaining individual, a profile of adjusted scale values on each of the 20 dimensions was generated. These scores were used in the test of the hypothesis and in examining several of the research questions of the study.

**Minnesota Satisfaction Questionnaire**

This instrument was used to quantify the variable of job satisfaction. The MSQ was handscored to obtain a scale value on each of the 20 dimensions and an overall job satisfaction score. Response choices were weighted from Very Dissatisfied = 1 to Very Satisfied = 5. Since each scale contained five items, the total score for an individual on any scale could range from 5 to 25 and total overall job satisfaction from 100 to 500. The total job satisfaction score was used in the test of the hypothesis and in examining several of the research questions of the study.

Interpretation of each instrument and the complete data analysis will be discussed in the following chapter.
IV

PRESENTATION AND INTERPRETATION OF FINDINGS

Introduction

Findings of the investigation are reported in four sections. First, vocational need patterns projected from the Minnesota Importance Questionnaire are used to compare (1) business education, home economics education, and trade and industrial education teachers, (2) successful with less successful teachers, and (3) satisfied with less satisfied teachers. In the second section the relationship between job satisfaction and job success is explored. Two measures of vocational needs/occupational reinforcer correspondence are used in predicting job satisfaction. Finally, biographical data for each individual is used to compare teachers with two levels of work adjustment.

Statistical tests employed in the analysis of data were stepwise multiple regression, analysis of variance, multivariate analysis of variance, and correlation. A detailed description of these statistics as well as their critical values are included in this chapter. Additional findings are presented in a descriptive manner.
Vocational Need Patterns

The Minnesota Importance Questionnaire measured the vocational needs of each respondent. Questionnaires were computer-scored and a MIQ profile was constructed for each individual. Figure 1 shows a profile constructed for one of the respondents in the study. The 20 MIQ scales are listed in alphabetical order on the left side of the profile, followed by the adjusted scale value for each scale. Positive adjusted scale values, indicating important vocational needs, are plotted to the right of the zero point, and negative scale values (non-important needs), to the left of the zero point.

Scale values indicate in terms of standard deviation units how far a given raw score deviates from the individual's own mean raw score, which is arbitrarily defined as zero. Each scale value is determined solely by the individual's responses to the MIQ rather than by comparison with a normative group. Once the scale value for the zero-point is determined, values for the other scales can be adjusted by subtracting the zero-point scale value from the other scale values. This procedure yields a group of adjusted scale values. MIQ adjusted scale values can range from -4.0 to +4.0, with a maximum range for any single individual being half of this total (Gay, et al., 1971).
<table>
<thead>
<tr>
<th>MIQ Scale</th>
<th>Adjusted Scale Value</th>
<th>Very Low</th>
<th>Low</th>
<th>Mod.</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability Utilization</td>
<td>1.5</td>
<td>-4.0</td>
<td>-3.0</td>
<td>-2.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>Achievement</td>
<td>2.0</td>
<td>0.0</td>
<td>+1.0</td>
<td>+2.0</td>
<td>+3.0</td>
</tr>
<tr>
<td>Activity</td>
<td>-.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advancement</td>
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<tr>
<td>Variety</td>
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<td></td>
<td></td>
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<tr>
<td>Working Conditions</td>
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</table>

Fig. 1.—Example of a Minnesota Importance Questionnaire Profile
Comparison By Subject Matter Area

Objective 1 of this study was to describe the vocational need patterns of secondary teachers of business education, home economics education, and trade and industrial education. Simple averages for each of the 20 scales for the three groups are reported in Table 2. Vocational need patterns were similar for teachers in the three subject matter areas. Therefore, additional discussion considers vocational teachers as a group rather than by separate subject matter areas.

The Manual for the Minnesota Importance Questionnaire indicates that adjusted scale values above 1.5 are to be considered of "high importance" and 1.0 to 1.5 indicates "moderate importance." Both high and moderate scale values should be considered carefully in examining the profiles (Gay, et al., 1971).

Vocational needs of high importance for all three groups of teachers and their descriptive characteristics are:

Ability Utilization - Make use of their individual abilities

Achievement - Get a feeling of accomplishment

Social Service - Have work where they do things for other people (mean scale value was slightly lower for business education teachers)
<table>
<thead>
<tr>
<th>Scale Title</th>
<th>Business Adj. Scale Values</th>
<th>Home Economics Adj. Scale Values</th>
<th>Trade &amp; Ind. Adj. Scale Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Values</td>
<td>S.D.</td>
<td>Values</td>
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<td>Utilization</td>
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<td>.43</td>
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<tr>
<td>Achievement</td>
<td>1.81</td>
<td>.40</td>
<td>1.73</td>
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<tr>
<td>Activity</td>
<td>0.25</td>
<td>.71</td>
<td>0.02</td>
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<td>Advancement</td>
<td>1.14</td>
<td>.67</td>
<td>0.97</td>
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<tr>
<td>Authority</td>
<td>-0.32</td>
<td>.71</td>
<td>-0.38</td>
</tr>
<tr>
<td>Company Policy</td>
<td>1.21</td>
<td>.67</td>
<td>1.31</td>
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<tr>
<td>Compensation</td>
<td>0.73</td>
<td>.82</td>
<td>0.73</td>
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<tr>
<td>Coworkers</td>
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<td>0.74</td>
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<tr>
<td>Creativity</td>
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<td>Moral Values</td>
<td>1.03</td>
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<tr>
<td>Recognition</td>
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<td>.73</td>
<td>0.61</td>
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<tr>
<td>Responsibility</td>
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<td>.76</td>
<td>1.21</td>
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<td>0.90</td>
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<td>Social Service</td>
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<td>.85</td>
<td>1.58</td>
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<tr>
<td>Variety</td>
<td>0.38</td>
<td>1.01</td>
<td>0.26</td>
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<tr>
<td>Working Conditions</td>
<td>1.17</td>
<td>.75</td>
<td>1.07</td>
</tr>
</tbody>
</table>
Vocational needs of moderate importance with their descriptive characteristics are:

**Advancement** - Have opportunities for advancement (mean scale value was slightly lower for home economics education teachers)

**Company Policy** - Have a company (school) which administers its policies fairly

**Creativity** - Try out their own ideas

**Moral Values** - Do work without feeling that it is morally wrong

**Responsibility** - Make decisions on their own

**Supervision - Human Relations** - Have administrators who back up their teachers

**Working Conditions** - Have good working conditions

Ten of the vocational needs represented in the Minnesota Importance Questionnaire may therefore be interpreted as being highly or moderately important to the teachers in this study. Within the framework of the Theory of Work Adjustment, the ability of a specific job to fulfill an individual's vocational needs is a determinant of the individual's job satisfaction. Care should be taken not to over-extrapolate from the mean scale values of vocational needs. While the average profile may be of use to educators and administrators working with vocational teachers, it is the individual profile that is ultimately important in the prediction of job satisfaction.
Adjusted scale values below zero indicate vocational needs which are of very low importance. Three needs fell into this group:

**Authority** - Tell other workers what to do

**Independence** - Do their work alone

**Social Status** - Have the position of "somebody" in the community

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**Comparison of Successful and Less Successful Teachers**

Objective 2 of the study was to compare the vocational need patterns of successful teachers with need patterns of less successful teachers. Membership in the "successful" or "less successful" group was determined by each teacher's score on the administrator's rating form. It should be remembered that the Minnesota Importance Questionnaire, designed to aid in the prediction of an individual's satisfaction in an occupation, is not intended to predict satisfactoriness, or success. This objective was intended to examine the relationship between vocational needs and job success in a descriptive manner.

Figure 2 presents the relationship between vocational needs and job success. Simple averages for each of the 20 scales for the two groups of teachers were computed. Differences between the two groups were minimal. On 11 of the 20 scales, the mean adjusted scale values for less successful teachers have somewhat stronger needs on these 11 scales, but differences were slight.
Fig. 2.—Vocational Need Patterns for Successful and Less Successful Teachers
Comparison of Satisfied and Less Satisfied Teachers

Objective 3 compared the vocational need patterns of satisfied teachers with need patterns of less satisfied teachers. MIQ individual profiles were used again to compute average scores on each of the 20 scales and to construct a vocational need pattern for satisfied and another for less satisfied teachers.

Total satisfaction scores obtained from the sum of the 20 scales of the Minnesota Satisfaction Questionnaire can range from 100 to 500. The distribution of scores for this sample ranged from a low of 211 to a high score of 492. Figure 3 is a frequency distribution showing range of scores and the number of respondents in each category. The distribution is negatively skewed which has been the usual pattern in research dealing with the measurement of job satisfaction.

Objective 3 was intended to compare satisfied and less satisfied teachers. Since the Manual for the Minnesota Satisfaction Questionnaire (Weiss, et al., 1967) indicates no point on the scale which can be used to distinguish between respondents who are satisfied and those who are dissatisfied, it was necessary to devise a system for dividing the sample into groups. The decision was made to form three groups of teachers called low satisfaction, medium satisfaction, and high satisfaction. In order to avoid breaking ties, the medium group was somewhat larger. This approach resulted in placing the 50 teachers in the low satisfaction
group whose scores ranged from 211 to 366. The 61 teachers in the medium satisfaction group had scores from 367 to 413 and the 50 teachers in the high satisfaction group had scores from 414 to 492.

![Frequency Distribution of Minnesota Satisfaction Questionnaire Scores](image)

**Fig. 3.—Frequency Distribution of Minnesota Satisfaction Questionnaire Scores**

A multivariate analysis of variance was used as a test of equality of the 20 need scores for the low and high satisfaction groups. Mean scores for each scale were computed and these are shown in Figure 4. Multivariate tests of significance using the Wilks Lamda criterion yielded an F value of 1.34. This was not significant at the .05 level of
Fig. 4.—Vocational Need Patterns Comparison for Satisfied and Less Satisfied Teachers
probability, indicating that vocational need patterns were not different for teachers with low and high job satisfaction.

Univariate F tests resulted in significant differences on one of the scales. High satisfaction teachers demonstrated a greater need for the opportunity to utilize their abilities in their job. The two groups of teachers did not differ greatly in their perceived needs on the other scales. Table 3 presents the results of the multivariate and univariate analysis of variance.

**TABLE 3**

ANALYSIS OF VARIANCE OF THE NEED SCORES FOR TEACHERS WITH LOW AND HIGH JOB SATISFACTION

<table>
<thead>
<tr>
<th>Variables</th>
<th>Low Satisfaction Means</th>
<th>Low Satisfaction SDs</th>
<th>High Satisfaction Means</th>
<th>High Satisfaction SDs</th>
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</thead>
<tbody>
<tr>
<td>Ability Util.</td>
<td>1.460</td>
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<td>1.708</td>
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<td>.312</td>
<td>.775</td>
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<td>1.048</td>
<td>.822</td>
</tr>
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<td>.767</td>
<td>-0.268</td>
<td>.932</td>
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<td>Company Policy</td>
<td>1.336</td>
<td>.628</td>
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<td>Coworkers</td>
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<td>0.792</td>
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<tr>
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<td>.639</td>
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<td>-0.184</td>
<td>.674</td>
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<tr>
<td>Recognition</td>
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<td>Responsibility</td>
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<td>.633</td>
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### TABLE 3—Continued

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<td>SDs</td>
<td>Means</td>
<td>SDs</td>
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### Analysis of Variance

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<td>0.068</td>
<td>0.20</td>
<td>.65</td>
</tr>
<tr>
<td>Activity</td>
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<td>0.865</td>
<td>1.55</td>
<td>.22</td>
</tr>
<tr>
<td>Advancement</td>
<td></td>
<td>0.020</td>
<td>0.04</td>
<td>.85</td>
</tr>
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<td>Authority</td>
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<td>0.102</td>
<td>0.14</td>
<td>.71</td>
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<tr>
<td>Company Policy</td>
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<td>0.02</td>
<td>.89</td>
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<tr>
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<td>.80</td>
</tr>
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<td>Coworkers</td>
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<td>.25</td>
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<td>.06</td>
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<td>.62</td>
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<tr>
<td>Moral Values</td>
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<td>.79</td>
</tr>
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<td>Recognition</td>
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<td>.25</td>
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<td>.36</td>
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<td>.81</td>
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<td>0.85</td>
<td>.36</td>
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<td>Working Conditions</td>
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<td>0.03</td>
<td>.87</td>
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</tbody>
</table>

*p < .05

**Job Success and Job Satisfaction**

Objective 4 examines the relationship between job success and job satisfaction for secondary teachers of business
education, home economics education, and trade and industrial education. The review of literature suggested that no relationship exists between job success and job satisfaction.

Job satisfaction, with scores ranging from 211 to 492, was treated as a continuous variable. Job success was treated as a dichotomized variable, i.e., successful or less successful. A Pearson r correlation coefficient was computed using the rationale described by Guilford (1965, p. 322):

If we gave a "score" of +1 to each person with a correct answer and a "score" of zero to each person with a wrong answer, in the item variable we would have only two class intervals and we would treat them as if they were genuine categories. A product-moment r could be computed with Pearson's basic formula. The result would be a point-biserial r. Computer programs for giving Pearson r's from score data automatically yield point-biserial r's between continuous and dichotomized variables.

Correlations between the two variables for the teachers in the three subject matter areas are presented in Table 4. All correlation coefficients were low and none were significantly different from zero at the .05 level.

<table>
<thead>
<tr>
<th>Subject Matter Area</th>
<th>r</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Education</td>
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<td>ns</td>
</tr>
<tr>
<td>Home Economics Education</td>
<td>.090</td>
<td>ns</td>
</tr>
<tr>
<td>Trade and Industrial Education</td>
<td>.142</td>
<td>ns</td>
</tr>
</tbody>
</table>
Prediction of Job Satisfaction

The main focus of this study was to test Proposition III of the Theory of Work Adjustment using a sample of vocational education teachers. This proposition states that:

Satisfaction is a function of the correspondence between the reinforcer system of the work environment and the individual's needs. . . (Dawis, Lofquist, and Weiss, 1968, p. 11).

This proposition was restated in the following manner: As the discrepancy between the reinforcer system of the teaching environment and the individual's vocational needs decreases, job satisfaction will increase.

The reinforcer system of the teaching environment is a group of norms established through research at the University of Minnesota. The Minnesota Job Description Questionnaire (MJDQ) was developed to parallel the dimensions measured by the Minnesota Importance Questionnaire. Immediate supervisors of 141 occupations were asked to estimate the reinforcing characteristics of the occupation which they supervised. Three criteria were used to evaluate these ratings: (1) the ability of the supervisors to make meaningful or logically consistent judgments, (2) agreement among the ratings of the same job by supervisors in different locations, and (3) ratings from supervisors of one job should differ from the ratings from supervisors of other jobs (Borgen, et al., Vol. XXV, 1968).
Norms were established separately for reinforcing characteristics for instructors in vocational schools and teachers in secondary schools. Since the sample in this study consisted of vocational teachers in secondary schools, it seemed desirable to use both set of norms for most of the data analysis. Summary statistics for the job reinforcing characteristics are presented in Table 5.

Individual vocational needs are measured by the Minnesota Importance Questionnaire (MIQ) as discussed on page 50. Each individual received a score of -4.0 to +4.0 on each of the 20 dimensions.

Job satisfaction was measured by the Minnesota Satisfaction Questionnaire (MSQ) as discussed on page 57. Although separate scores on each of the 20 dimensions were generated, only the total job satisfaction score was used in the test of the hypothesis.

**Measures of Correspondence**

The first step in the analysis of the hypothesis was one of the most difficult. A method of measuring correspondence between the reinforcer system of the teaching environment and the individual's vocational needs was needed. The measure of correspondence represented the similarity of the individual's vocational needs (MIQ scores) and the occupational reinforcer patterns of teachers (ORPs). Job satisfaction was seen as a function of this measured correspondence.
### TABLE 5

**OCCUPATIONAL REINFORCER PATTERNS**

<table>
<thead>
<tr>
<th>Scale Title</th>
<th>Instructor Voc. School</th>
<th>Teacher Sec. School</th>
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</thead>
<tbody>
<tr>
<td>Ability Utilization</td>
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<td>1.53</td>
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<tr>
<td>Achievement</td>
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<td>Advancement</td>
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<td>0.80</td>
</tr>
<tr>
<td>Company Policies</td>
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</tr>
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</tr>
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<tr>
<td>Recognition</td>
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<td>0.66</td>
</tr>
<tr>
<td>Responsibility</td>
<td>1.32</td>
<td>1.04</td>
</tr>
<tr>
<td>Security</td>
<td>1.34</td>
<td>1.14</td>
</tr>
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<td>Social Service</td>
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</tr>
<tr>
<td>Social Status</td>
<td>0.87</td>
<td>0.40</td>
</tr>
<tr>
<td>Supr./Human Relations</td>
<td>0.72</td>
<td>0.57</td>
</tr>
<tr>
<td>Supr./Technical</td>
<td>0.41</td>
<td>0.01</td>
</tr>
<tr>
<td>Variety</td>
<td>1.10</td>
<td>1.07</td>
</tr>
<tr>
<td>Working Conditions</td>
<td>1.15</td>
<td>0.87</td>
</tr>
</tbody>
</table>

There is an almost endless variety of measures of correspondence from which to choose. The problem was complicated by the fact that the ORPs are constant values, i.e., the same 20 scores would be the reinforcer system of the teaching environment for every individual in the sample. Many measures of correspondence examined were inappropriate for use with a set of norms, or constant values.

Two statistical measures of need-reinforcer correspondence were selected for comparison in terms of their effectiveness as predictors of job satisfaction. The first measure used was the D-squared statistic used by the Work Adjustment Project at the University of Minnesota. \( D^2 \) is the sum of the squared distances between an individual's 20 need scores and the occupational reinforcer pattern for the same 20 dimensions.

The second measure was suggested by Weiss (1969, p.10) as a result of his research in work adjustment:

Some preliminary data showed that the direction of the difference between the MIQ and an ORP was important in predicting satisfaction. For these data, based on a small group of individuals, a directional \( D^2 \) measure showed differential prediction of satisfaction that was hidden by the total \( D^2 \). When total \( D^2 \) was correlated with general satisfaction we obtained a correlation of .02, indicating no relationship between correspondence and satisfaction. We then took all scales in which MIQ scores were higher than ORPs (i.e., need greater than reinforcer) and for each individual obtained an average \( D^2 \) of this type. For the same individual this measure of correspondence correlated -.26 with satisfaction. The second breakdown of \( D^2 \) was the situation in which reinforcer was higher than need. In this case, the environment is apparently providing an "excess"
of the reinforcer beyond what the individual prefers. The correlation with satisfaction for this type of D² was .44.

It seemed feasible therefore to consider direction of the difference between the MIQ and an ORP in determining a measure of correspondence. The formula used for computing a discrepancy score for each person was:

\[ D = \sum (r_1 - n_1) + (r_2 - n_2) \ldots (r_{20} - n_{20}) \]

when:
- \( r_1 \) = norm established on dimension 1 of an ORP
- \( r_2 \) = norm established on dimension 2 of an ORP
- \( n_1 \) = individual vocational need score on dimension 1
- \( n_2 \) = individual vocational need score on dimension 2

A total discrepancy score which was positive meant that the occupation provided more reinforcers than the individual needed. This individual was predicted to be high in job satisfaction. A total negative discrepancy score meant that the occupation provided less reinforcers than the individual needed. This individual was predicted to be low in job satisfaction.

**Analysis of Variance Using the D-Squared Statistic**

The scoring procedures used with the Minnesota Importance Questionnaire generated a value called \( D^2 \). It is based on the summed distance (across all 20 scales) between the MIQ and the ORPs for 148 different occupations. The following range of values are used in the scoring procedure...
to assist in predicting job satisfaction:

\[ D^2 < 9 = \text{satisfied} \]

\[ D^2 \text{ of } 9 \text{ to } 20 = \text{likely satisfied} \]

\[ D^2 > 20 = \text{not likely satisfied} \]

When the vocational school instructor ORPs were used, 28 teachers were predicted as not satisfied, 117 teachers as likely satisfied, and 16 teachers as satisfied. When the secondary school teacher norms were used, 24 teachers were predicted as not satisfied, 124 as likely satisfied, and 13 as satisfied.

An analysis of variance was computed on actual job satisfaction scores for the three groups according to their predicted level of satisfaction. The analysis using the vocational school instructor ORPs is reported in Table 6. The analysis using the secondary school teacher ORPs is reported in Table 7.

An F ratio of 3.04 was necessary for the null hypothesis to be rejected at the .05 level. The use of vocational school ORPs in the correspondence measure yielded a higher F ratio than did the use of the secondary school teachers ORPs but neither value was statistically significant. The D-squared statistic was not useful in predicting job satisfaction of vocational education teachers.
### TABLE 6

**ANALYSIS OF DATA FOR THE PREDICTION OF JOB SATISFACTION USING VOCATIONAL NEEDS/VOCATIONAL SCHOOL INSTRUCTOR REINFORCER PATTERN CORRESPONDENCE AS THE INDEPENDENT VARIABLE**

<table>
<thead>
<tr>
<th>MSQ Scores</th>
<th>All Subjects</th>
<th>Not Satisfied</th>
<th>Likely Satisfied</th>
<th>Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means</td>
<td>389.60</td>
<td>392.39</td>
<td>390.45</td>
<td>378.50</td>
</tr>
<tr>
<td>SD</td>
<td>50.41</td>
<td>53.36</td>
<td>49.06</td>
<td>56.80</td>
</tr>
</tbody>
</table>

**Analysis of Variance**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Variance</th>
<th>F Ratio</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>2272.00</td>
<td>1136.00</td>
<td>0.44</td>
<td>ns</td>
</tr>
<tr>
<td>Within</td>
<td>158</td>
<td>404480.00</td>
<td>2560.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 7

**ANALYSIS OF DATA FOR THE PREDICTION OF JOB SATISFACTION USING VOCATIONAL NEEDS/SECONDARY SCHOOL TEACHER REINFORCER PATTERN CORRESPONDENCE AS THE INDEPENDENT VARIABLE**

<table>
<thead>
<tr>
<th>MSQ Scores</th>
<th>All Subjects</th>
<th>Not Satisfied</th>
<th>Likely Satisfied</th>
<th>Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means</td>
<td>389.60</td>
<td>395.50</td>
<td>389.40</td>
<td>380.69</td>
</tr>
<tr>
<td>SDs</td>
<td>50.41</td>
<td>57.37</td>
<td>46.93</td>
<td>69.68</td>
</tr>
</tbody>
</table>
Multiple Regression Analysis Using Total Discrepancy Scores

The second statistical measure of correspondence used was the total discrepancy score. This was obtained by subtracting the need score from the ORP on each of the 20 dimensions. These new values were summed for the total discrepancy score. A total discrepancy score which was positive meant that the occupation provided more reinforcers than the individual needed. This individual was predicted to be high in job satisfaction. A total negative discrepancy score meant that the occupation provided less reinforcers than the individual needed. This individual was predicted to be low in job satisfaction.

Stepwise multiple regression analysis simultaneously partials out the effects of all intervening variables but one, and examines the relationship between that variable and job satisfaction. The independent variables used in the regression analysis were age, sex, race, martial status, educational level, years in teaching, years in present teaching position, subject matter area, vocational need scores, and total discrepancy score.
The norms for "Instructor, Vocational School" were used with MIQ scores to compute the discrepancy for each individual. The use of the vocational school instructor norms as part of the measure of correspondence had yielded the highest F ratio when D-squared was used as the statistical measure of correspondence. Prime concern was with the discrepancy score as it differentiated between the various levels of job satisfaction. Other dependent variables were also important to the extent that they made unique contributions to the prediction of job satisfaction.

The full model analysis yielded only one F ratio significant at the .05 level. This analysis is presented in Table 8. The variable which was most useful in predicting job satisfaction was "years in present teaching position." Other variables did not contribute appreciably to the prediction of job satisfaction.

A zero-order correlation coefficient computed between job satisfaction and the total discrepancy score was -0.036 which indicated virtually no relationship between the variables. It seemed important to examine the data from another perspective in an attempt to improve the prediction of job satisfaction.
TABLE 8
FIRST FIVE INDEPENDENT VARIABLES IN THE ORDER TO WHICH THEY CONTRIBUTED IN THE PREDICTION OF JOB SATISFACTION THROUGH THE USE OF STEPWISE MULTIPLE REGRESSION

<table>
<thead>
<tr>
<th>Variable Entered</th>
<th>Multiple R</th>
<th>R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years in Present Teaching Position</td>
<td>0.1979</td>
<td>0.0392</td>
<td>6.48*</td>
</tr>
<tr>
<td>Need for Creativity</td>
<td>0.2483</td>
<td>0.0616</td>
<td>3.78</td>
</tr>
<tr>
<td>Need for Recognition</td>
<td>0.3089</td>
<td>0.0954</td>
<td>5.86</td>
</tr>
<tr>
<td>Male</td>
<td>0.3351</td>
<td>0.1123</td>
<td>2.97</td>
</tr>
<tr>
<td>Age</td>
<td>0.3548</td>
<td>0.1259</td>
<td>2.41</td>
</tr>
</tbody>
</table>

*p < .05

Analysis of Variance Using Total Discrepancy Scores

In examining the total discrepancy scores, it was noted that many scores were very close to zero. Since two instruments of 20 dimensions each had been used, there was the possibility of a "rounding-off" error in the computations. The discrepancy scores were divided into a negative and a positive group, with a neutral group including those individuals whose total discrepancy scores fell between -2.0 and +2.0.

Thirty individuals were in the negative group and 103 persons in the positive group when the vocational school instructor Occupational Reinforcer Patterns (ORPs) were used.
Seventy-nine individuals were in the negative group and 46 in the positive group when the secondary school teacher ORPs were used. Tables 9 and 10 present the results of this analysis.

An F ratio of 3.04 was necessary for the null hypothesis to be rejected at the .05 level. The use of vocational school ORPs in the correspondence measure yielded a higher F ratio than did the use of the secondary school teachers ORPs but neither value was statistically significant. The total discrepancy score as a statistical measure of correspondence resulted in slightly higher F ratios than did the use of the D-squared measure of correspondence.

TABLE 9
ANALYSIS OF DATA FOR THE PREDICTION OF JOB SATISFACTION USING VOCATIONAL NEEDS/VOCATIONAL SCHOOL INSTRUCTOR REINFORCER PATTERN CORRESPONDENCE AS THE INDEPENDENT VARIABLE

<table>
<thead>
<tr>
<th>MSQ Score</th>
<th>All Subjects</th>
<th>Negative Score</th>
<th>Neutral Score</th>
<th>Positive Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means</td>
<td>389.60</td>
<td>394.67</td>
<td>401.36</td>
<td>384.93</td>
</tr>
<tr>
<td>SDs</td>
<td>50.41</td>
<td>49.95</td>
<td>42.90</td>
<td>52.19</td>
</tr>
</tbody>
</table>

Analysis of Variance

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Variance</th>
<th>F Ratio</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>6896.00</td>
<td>3448.00</td>
<td>1.36</td>
<td>ns</td>
</tr>
<tr>
<td>Within</td>
<td>158</td>
<td>399904.00</td>
<td>2531.04</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 10
ANALYSIS OF DATA FOR THE PREDICTION OF JOB SATISFACTION USING VOCATIONAL NEEDS/SECONDARY SCHOOL TEACHER REINFORCER PATTERN CORRESPONDENCE AS THE INDEPENDENT VARIABLE

Means and Standard Deviations

<table>
<thead>
<tr>
<th>MSQ Scores</th>
<th>All Subjects</th>
<th>Negative Scores</th>
<th>Neutral Scores</th>
<th>Positive Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means</td>
<td>389.60</td>
<td>393.23</td>
<td>379.69</td>
<td>391.13</td>
</tr>
<tr>
<td>SDs</td>
<td>50.41</td>
<td>49.50</td>
<td>51.77</td>
<td>51.02</td>
</tr>
</tbody>
</table>

Analysis of Variance

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Variance</th>
<th>F Ratio</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>4672.00</td>
<td>2336.00</td>
<td>0.92</td>
<td>ns</td>
</tr>
<tr>
<td>Within</td>
<td>158</td>
<td>402112.00</td>
<td>2545.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Work Adjustment

The Minnesota Theory of Work Adjustment states that satisfactoriness and satisfaction are basic indicators of the degree of success an individual has achieved in maintaining correspondence between himself and the work environment. Proposition I of the Theory states:

An individual's work adjustment at any point in time is indicated by his concurrent levels of satisfactoriness and satisfaction. (Dawis, et al., 1968, p. 11)

The work-adjusted individual is therefore a person who is both satisfied with and successful at his present job.
The opposite end of a work adjustment continuum would contain individuals who were both dissatisfied with and less successful at their present jobs.

The sample was divided into three groups according to level of work adjustment. The following criteria were used:

- **Group I** = MSQ score of 211 - 366
  Rated by principal as less successful
- **Group II** = MSQ score of 367 - 413
  Successful or less successful rating
- **Group III** = MSQ score of 414 - 492
  Rated by principal as successful

Minnesota Satisfaction Questionnaire scores were divided into three groups according to high, medium, or low satisfaction. An individual who ranked in the lower third on job satisfaction and who also had been rated as less successful was placed in Group I to indicate low work adjustment. An individual who ranked in the upper third on job satisfaction and who had also been rated as successful was placed in Group III to indicate high work adjustment. All other individuals were classified in Group II.

Only individuals in Groups I and III were used in this analysis in an attempt to explore differences between teachers with high work adjustment and those with low work adjustment. Group I contained 31 teachers and 29 teachers were classified as Group III.
Biographical data were used in comparing the two groups. Variables used were: subject matter area, age, sex, race, marital status, educational level, years in present teaching position, and years of teaching experience.

Chi square was chosen as the statistic to test for independence of variables. Eight separate analyses were made using level of work adjustment as one of the variables each time and using a different biographical data variable for each analysis. As the computed Chi square value approaches zero, this indicates that work adjustment is operating independently of the biographical variable. When the Chi square value is large enough to be statistically significant, independence of variables can no longer be assumed.

Preliminary analysis demonstrated the necessity of collapsing the last three categories for three variables: age, years in present teaching position, and years of teaching experience. While it is desirable to have cell sizes with expected frequency of 5 or greater, Siegel (1965, p.110) stated that:

"... when degrees of freedom are greater than 1, the $x^2$ test may be used if fewer than 20 percent of the cells have an expected frequency of less than 5 and if no cell has an expected frequency of less than one."

Frequency tables are included in Appendix D. Table 11 contains the three biographical variables with significant Chi square values.
### TABLE 11

**CHI SQUARE VALUES FOR INTERACTION BETWEEN WORK ADJUSTMENT AND BIOGRAPHICAL VARIABLES**

<table>
<thead>
<tr>
<th>Variable</th>
<th>High Work Adj n = 29</th>
<th>Low Work Adj n = 31</th>
<th>Chi Square</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td>2.95</td>
<td>.05&lt; p &lt;.10</td>
</tr>
<tr>
<td>Female</td>
<td>19</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years in Present Teaching Position</td>
<td></td>
<td></td>
<td>11.05</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>1 - 4</td>
<td>5</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - 9</td>
<td>8</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 - 14</td>
<td>8</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 19</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 and up</td>
<td>3</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of Teaching Experience</td>
<td></td>
<td></td>
<td>9.97</td>
<td>.05&lt; p &lt;.10</td>
</tr>
<tr>
<td>1 - 4</td>
<td>3</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - 9</td>
<td>5</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 - 14</td>
<td>7</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 19</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 - 24</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 and up</td>
<td>5</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"Years in present teaching position" was significant at the .05 level. Those teachers who had remained in the same position for a longer period of time were more likely to be found in the group which was higher in work adjustment. Two other biographical variables were marginally statistically
significant. Female teachers and teachers who had more years of teaching experience were also likely to be found in the group with high work adjustment.

Chapter IV has reported and discussed the data gathered and the various methods of analysis used. Chapter V will present a summary of the procedures and the findings in this investigation. Conclusions will be drawn and recommendations made for further study.
SUMMARY AND CONCLUSIONS

Summary

In this section the study is summarized. Information is given about the problem, objectives and hypothesis, procedures in data collection, and findings.

Statement of the Problem

The purpose of this study was to investigate the work adjustment of vocational education teachers. Measures of vocational needs, job satisfaction, and job success were used in testing portions of the Minnesota Theory of Work Adjustment.

Objectives and Hypothesis

The objectives of the study were:

1. To describe the vocational need patterns of secondary school teachers of business education, home economics education, and trade and industrial education.

2. To compare the vocational need patterns of successful teachers with need patterns of less successful teachers.
3. To compare the vocational need patterns of satisfied teachers with need patterns of less satisfied teachers.

4. To examine the relationship between job success and job satisfaction for secondary teachers of business education, home economics education, and trade and industrial education.

The major focus of the study was to test Proposition III of the Minnesota Theory of Work Adjustment for the groups identified. This proposition was restated into the following research hypothesis:

As the discrepancy between the reinforcer system of the teaching environment and the individual's vocational needs decreases, job satisfaction will increase.

Sample Designation

A multi-stage sampling process was used to select teachers of business education, home economics education, and trade and industrial education for participation in this study. The sample selection process for business education teachers is described. An identical procedure was used to select an equal number of teachers in home economics education and in trade and industrial education.

First, each state supervisor and teacher educator of business education was asked to list 10 teachers of business
in his or her state whom he or she considered highly successful as a teacher. A list of highly successful teachers was compiled for each state and sent to the state supervisor of business education. The state supervisor was then asked to randomly select 10 names of business education teachers from state files for a comparison group, excluding names already listed as highly successful.

Principals of both groups of teachers were mailed questionnaires dealing with characteristics such as the teacher's mastery of his field, attitude toward teaching and students, preparation for class, and ability to stimulate intellectual curiosity (see Appendix A).

Returned rating forms were scored. Individuals with the highest ratings among the successful teachers were selected to compose the successful teacher group. Individuals with the lowest ratings among the comparison teachers were selected to compose the less successful teacher group. These teachers were asked to participate in the project, "Vocational Teaching in Diverse Cultural Settings." Home economics education and trade and industrial education teachers were selected in a similar manner.

One additional sampling step was taken for this specific study in the interest of economy. Using a table of random numbers, 30 teachers of business education were selected from the successful group and 30 teachers were selected from the less successful group. This gave a total
of 60 business education teachers who were asked to participate in the study. Sixty teachers of home economics education and 60 trade and industrial education teachers were selected in a similar manner.

The total sample for this study consisted of 180 teachers in three vocational areas. One hundred and sixty-one teachers completed the study with useable questionnaires.

**Instrument Selection**

Four sets of instruments were used to collect biographical data from each respondent and to measure the variables of vocational needs, job success, and job satisfaction.

Each principal of a teacher involved in the study received a questionnaire containing 10 multiple-choice items which evaluated specific teacher characteristics and an equal interval scale assessing an overall rating. Job success was treated as a dichotomy and built into the study as a part of the sample selection. On the basis of this questionnaire, respondents were classified as successful or less successful (see Appendix A).

The Minnesota Satisfaction Questionnaire (MSQ) was used to measure the satisfaction of the individual's needs through work. The MSQ is a 20-scale Likert format instrument consisting of 100 items. The twenty dimensions of the work environment measured by this instrument were:
1. Ability Utilization  
2. Achievement  
3. Activity  
4. Advancement  
5. Authority  
7. Compensation  
8. Co-Workers  
9. Creativity  
10. Independence  
11. Moral Values  
12. Recognition  
13. Responsibility  
14. Security  
15. Social Service  
16. Social Status  
17. Supervision/Human Relations  
18. Supervision/Technical  
19. Variety  
20. Working Conditions  

A summed score was obtained for each scale and a general satisfaction score derived by summing responses to the 20 scales (see Appendix C).

The Minnesota Importance Questionnaire (MIQ) is a 210-item paired comparison instrument. The 20 dimensions of the work environment described previously are used to measure *vocationally relevant needs*. A score of +4.0 to -4.0 is obtained for each of the 20 scales (see Appendix C).

Biographical data were collected using a series of multiple-choice questions which asked for information about age, sex, marital status, race, educational attainment, years in present teaching position, years of teaching experience, and teaching field (see Appendix D).
The stimulus environment for the job of teaching had been established by previous research in work adjustment done at the University of Minnesota. A score was obtained for each of the 20 dimensions of the work environment which was a measure of the strength of that reinforcer in a particular job. Summary statistics for the job "instructor, vocational school" and the job "teacher, secondary school" were used in this study.

**Data Collection**

Questionnaires were mailed to teachers who agreed to participate in the project. Follow-up postal cards and telephone calls were used to obtain a return rate of 94 percent. The final sample consisted of 161 teachers in the three vocational areas.

**Findings**

Findings are summarized according to vocational need patterns, comparison of job success and job satisfaction, prediction of job satisfaction, and an analysis of total work adjustment.

Vocational need pattern profiles were compared for (1) business education, home economics education, and trade and industrial education teachers, (2) successful and less successful teachers, and (3) teachers with high, medium, and low job satisfaction.
Descriptive comparisons were made for groups divided according to subject matter area and job success. Both types of comparisons yielded very similar profiles. Vocational needs of high importance for all groupings of teachers were: ability utilization, achievement, and social service. Vocational needs of moderate importance were: advancement, company policy, creativity, moral values, responsibility, supervision/human relations, and working conditions. The three vocational needs categorized as being of very low importance were authority, independence, and social status. All other vocational needs measured fell into the medium ranges of importance.

A multivariate analysis of variance was used to compare the need patterns of satisfied teachers with those of less satisfied teachers. High satisfaction teachers demonstrated a greater need for the opportunity to utilize their abilities in their job and this difference was statistically significant at the .05 level. The two groups of teachers did not differ greatly in their perceived needs on the other scales (see Table 3, p. 60).

A Pearson product-moment correlation coefficient relating job success to job satisfaction was computed. Coefficients of .09 to .14 were found for the three subject matter areas, none of which were significant at the .05 level (see Table 4, p. 62).
The main purpose of the study was the prediction of job satisfaction as a function of the correspondence between the reinforcer system of the work environment and the individual's needs. Two different correspondence measures were used: $D^2$ (the sum of the squared distances between an individual's 20 need scores and the occupational reinforcer pattern for the same 20 dimensions) and the total discrepancy score (the sum of the distances between an individual's 20 need scores and the occupational reinforcer pattern for the same 20 dimensions). The eight biographical data variables were also used in the analysis. "Years in present teaching position" was the only variable which was useful in the prediction of job satisfaction.

Overall work adjustment was examined by using biographical data to compare teachers with high work adjustment (successful/satisfied) and teachers with low work adjustment (less successful/less satisfied). Teachers with more years in their present teaching position, with more years of teaching experience, and who were female were more likely to be found in the group of high work adjustment.

Conclusions

This section presents conclusions which were drawn from experimental findings given in the previous chapter. Conclusions are summarized according to vocational need patterns, comparison of job success and job satisfaction,
prediction of job satisfaction, and an analysis of total work adjustment.

Vocational Need Patterns

Teachers were grouped by subject matter area, job success, and job satisfaction to make comparison of their vocational needs. All three types of comparisons yielded very similar need profiles. The need profiles resemble the occupational reinforcer patterns for "instructor, vocational school" more than the patterns for "teacher, secondary school." Three needs were rated of high importance by the teachers in this study: ability utilization, achievement, and social service. These same three needs plus the need for creativity had been considered of high importance in establishing the occupational reinforcer patterns. Three needs were categorized as being of very low importance by the teachers in this study: authority, independence, and social status. No needs had been placed in this category when the occupation reinforcer patterns were established. In general, scale values for the vocational needs of the teachers in this study covered a greater range than did the scale values in the occupational reinforcer patterns.

One possible explanation for the similarities found in the need profiles is that the vocational education teachers selected for this study were a homogeneous group. Job
satisfaction scores tended to group together in the upper range so that it is difficult to view more than a few of the teachers as being dissatisfied. Thus most of the teachers may have been exhibiting different levels of satisfaction, and there was no real dissatisfied group for comparison.

Another reason for the similarity may be a function of the MIQ scoring procedures. The raw score on a scale for an individual was adjusted to an individual z-score. A mean raw score was computed for each individual. After the mean was adjusted to zero, the 20 scales were adjusted by subtracting the zero-point scale value from it. These new scores were called adjusted scale values. The computer scoring service used had programming which generated the adjusted scale values on the 20 dimensions, and raw scores were unavailable. It is possible that the method of adjusting scores removed most of the variance in score distribution. The MIQ has been useful on an individual basis as a counseling tool but may not be ideally suited for research purposes.

Job Success and Job Satisfaction

Correlation coefficients of .09 to .14 were obtained when the relationship of job success to job satisfaction was examined for the three teaching fields. It is interesting to note that the coefficient for the trade and industrial teachers (.14) is exactly the same as the median correlation.
found by Vroom (1964) when he reviewed hundreds of studies of job satisfaction and job success.

After an extensive review of the literature in work adjustment, Crites (1969) concluded that job satisfaction and job success cannot be conceived of as dimensions of vocational adjustment, but rather as independent outcomes of the vocational adjustment process. The relationship found between these two variables is consistent with his viewpoint.

**Prediction of Job Satisfaction**

In order to predict job satisfaction a measure of correspondence between the reinforcer system and individual needs had to be uncovered and defined operationally. Two correspondence measures were used in separate analyses in an attempt to predict job satisfaction of vocational educational teachers. Eight variables using biographical data were also included in the analyses. "Years in present teaching position" was the only variable which was useful in prediction of job satisfaction.

Problems with the scoring of the MIQ have already been discussed. If variance was removed from these scores, it would affect the use of the MIQ in the hypothesis. One must also consider the possibility of measurement error in the job satisfaction instrument. Scores for this sample of teachers were negatively skewed and the possibility exists
that few people were really dissatisfied with their job. The effect would be the necessity of discriminating between small degrees of satisfaction and would not permit an adequate test of the hypothesis.

Work Adjustment

Overall work adjustment comparisons yielded the predictable finding that teachers with more tenure in teaching would be more likely to be high in work adjustment. The effects of voluntary or involuntary departure would not have had the full impact for teachers with a shorter tenure.

More surprising was the finding that a higher proportion of women was found in the high adjustment group. Research had indicated that job satisfaction was generally not as high in women as in men. It may be that career saliency is higher in women today than had been found in older studies.

Recommendations for Further Study

The present study has provided some answers in furthering an understanding of the work adjustment of vocational education teachers. The following paragraphs describe recommendations for further study based upon the results of this investigation. Hopefully these recommendations will serve to stimulate future research in work adjustment which can meaningfully relate to the present findings.

While the present study had the advantages of a nationwide sample, it was limited by a predetermined sample
selection process. Regression effects are almost inevitable when groups are selected for their extremity and teachers for this study were selected on the basis of being "successful" or "less successful." Researchers considering a study involving job success as one of the variables should give strong consideration to the possibilities of random sampling.

The difficulty in developing a correspondence measure between vocational needs and occupational reinforcer patterns was discussed in Chapter IV. This problem was not resolved to this researcher's satisfaction. If the Minnesota Theory of Work Adjustment is to be adequately tested, continued exploration is needed to find a valid statistical measure of correspondence.

The instruments used in this study were selected because of their compatibility with each other. Several reliable instruments are available for the measurement of job satisfaction and vocational needs. Interesting studies could be made comparing job satisfaction or vocational needs of teachers as measured by several instruments. No one instrument measuring either variable has demonstrated superiority when used with professional workers, so further investigation is indicated.

Work adjustment research is still in the early stages of development. It is hoped that future studies of work
adjustment of teachers will be theoretically oriented and can contribute to building a framework which will be beneficial in vocational counseling.
Ratings Instructions

On the following pages are several items pertaining to the rating of the vocational education teacher named in the accompanying letter and on this rating sheet.

For the first set of items, please check the phrase which best fits this teacher in comparison with other teachers in the school. You are asked to rate this teacher on the basis of whatever available information you have regarding their teaching ability.

To complete the overall rating of this person, please place a check mark at the appropriate point on the vertical line in the center of the page. The five cue words appearing to the left of the line (superior, excellent, above average, average, below average) are only guidelines for the rating. It is not necessary to place your mark opposite one of those words; rather, you may place the mark anywhere on the line.

After rating the teacher, please indicate how confident you feel about your judgment on that teacher by checking the appropriate box.

Please do not skip any questions.

Thank you for your cooperation.
To what extent does the work of this teacher impress you as indicating mastery in the field of vocational education?

- very markedly
- markedly
- little
- very little

Teacher's knowledge of subject:

- seems to know the subject extremely well
- knows the subject well
- seems moderately well-informed
- appears to be poorly informed

How much evidence is there that this teacher has broad experience in his field aside from book knowledge?

- frequent evidence
- fair amount of evidence
- a little evidence
- no evidence

How well does this teacher assist students in knowing why they are learning certain things?

- among the best teachers I have seen
- better than most teachers in this respect
- among the poorest teachers I have seen
- less than most teachers in this respect

Attitude toward teaching:

- seems to be enthusiastic about teaching
- sometimes enthusiastic; sometimes not enthusiastic
- seems indifferent
- does not seem to enjoy teaching

Attitude toward students:

- sympathetic, helpful, actively concerned
- moderately sympathetic
- routine in attitude--avoids individual contact
- distant, aloof, cold

What is the feeling between this teacher and his students?

- excellent mutual understanding and good will
- better human relations than in most classes
- not as good rapport as in most classes
- little mutual understanding, poor human relations

Teacher's preparation for class session:

- outstanding
- well prepared
- apparently does a minimum of preparation
- frequently forgets teaching materials; obviously unprepared

Teacher's attitude toward questions:

- skillful in drawing out questions
- encourages questions
- avoids certain questions
- ignores most questions

Teacher's stimulation of intellectual curiosity:

- inspires students to seek more knowledge on subject
- maintains students' interest in subject
- often dull
- destroys interest in subject
Superior

Excellent

Above Average

Average

Below Average

How confident do you feel about this rating?

☐ Very Confident
☐ Somewhat Confident
☐ Somewhat Doubtful
☐ Very Doubtful
APPENDIX B
BIOGRAPHICAL DATA

Directions: Place the appropriate number in the blank provided to the left of the question.

_____ (1) Your age

1. 20 - 24
2. 25 - 29
3. 30 - 34
4. 35 - 39
5. 40 - 44
6. 45 - 49
7. 50 - 54
8. 55 - 59
9. 60 or over

_____ (2) Your sex

1. Female
2. Male

_____ (3) Your race

1. American Indian
2. Caucasian
3. Negro
4. Oriental
5. Other (Please state) ________________________

_____ (4) Highest educational level you have completed

1. Doctoral degree
2. Educational Specialist
3. Master's degree
4. BA or BS degree
5. Some college
6. Vocational or Technical school training
7. High school diploma
(5) Marital status

1. Married
2. Single
3. Other (Please state) ______________________

(6) Number of years you have taught in your present position

1. 1 - 4
2. 5 - 9
3. 10 - 14
4. 15 - 19
5. 20 - 24
6. 25 - 29
7. 30 - 34
8. 35 or more

(7) Number of years in total which you have taught

1. 1 - 4
2. 5 - 9
3. 10 - 14
4. 15 - 19
5. 20 - 24
6. 25 - 29
7. 30 - 34
8. 35 or more

Note: Biographical variable Number 8, subject matter area, was built into the sample designation process.
APPENDIX C
MINNESOTA IMPORTANCE QUESTIONNAIRE AND
MINNESOTA SATISFACTION QUESTIONNAIRE

The Minnesota Importance Questionnaire (MIQ) and the Minnesota Satisfaction Questionnaire (MSQ) may be obtained from the following address:

Vocational Psychology Research
Elliott Hall
University of Minnesota
Minneapolis, Minnesota 55455
TABLE 12

FREQUENCY DISTRIBUTION FOR INTERACTION BETWEEN WORK ADJUSTMENT AND BIOGRAPHICAL VARIABLES

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<thead>
<tr>
<th>Variable</th>
<th>High Work Adj (n = 29)</th>
<th>Low Work Adj (n = 31)</th>
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<td><strong>Subject Matter Area</strong></td>
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<tr>
<td>Trade and Industrial Education</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Business Education</td>
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<td>8</td>
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<tr>
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<td>3</td>
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<tr>
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SELECTED BIBLIOGRAPHY


