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A Comparison of Job Satisfaction Needs of Selected Rural and Urban Industrial Education Students in the State of Utah

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A COMPARISON OF JOB SATISFACTION NEEDS OF SELECTED RURAL AND URBAN INDUSTRIAL EDUCATION STUDENTS IN THE STATE OF UTAH

by

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Alvin E. Lybarger

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A Comparison of Job Satisfaction Needs of Selected Rural and Urban Industrial Education Students in the State of Utah

by

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The purpose of this study was to investigate, compare, and analyze personal-social needs of rural and urban students who were preparing for occupations in the industrial education areas.

The study was a descriptive research which employed the survey technique using the Minnesota Importance Questionnaire. The questionnaire was administered to high school students in the state of Utah classified in two categories: 151 industrial and agricultural students enrolled in rural high schools and 91 industrial vocational students enrolled in urban high schools.

Major findings. The rural and urban students possessed similar vocational needs. To the entire student sample, advancement, security, and ability utilization were considered most important; while independence, social status, and authority were considered least important. A small percentage of the students were actually preparing for occupations which corresponded to their selected job clusters. Both rural

and urban students selected professional and semi-professional occupations as the vocational areas in which their needs would be most likely met.

Major conclusions. Students want to work with others, but they do not want to tell others what to do. Supervisors want workers who will obey instructions and go ahead on their own to complete a task. Students have greater vocational needs than the occupations for which they are training appear able to provide. If behavioral objectives were to be written on the state level in the affective domain and with vocational needs in mind, it would appear that the objectives would be functional for both rural and urban groups. Due to the students' high vocational needs, it would be difficult for many students to find complete job satisfaction in occupations in clusters 7 and 9, which are manual occupations.

(113 pages)

CHAPTER I

THE PROBLEM

Introduction

Origin and nature of the problem

As the labor movement was developing in Europe at the turn of the eighteenth century, the concern for the character of the student was expressed by many of the leaders and educational systems of that time (Bennett, 1926). The early sloyd schools, which developed into educational sloyd toward the end of the nineteenth century, were organized chiefly because of the deep interest which the elders had for their children's social welfare. When manual training was introduced in America, many of the same character objectives found in sloyd became a part of America's educational objectives (Bennett, 1937).

Educational objectives can be classified into three categories: cognitive domain, affective domain, and psychomotor domain. Some of the objectives listed by the U.S. Office of Education (Sredl, 1964), by the Educational Policies Commission, and included in the Cardinal Principles of Secondary Education (Silvius and Curry, 1953) are related to the building of good character traits, appreciation, occupational adjustment, social understanding, responsibility, and the development of skills. Bonser, Selvidge, and Struck all referred to character-building traits and skill development as valid educational objectives (Sredl, 1964).

Although these educational objectives are considered important by many leaders in education, numerous studies reveal that workers are

discharged from their jobs because of a lack of desirable personal-traits, rather than the lack of vocational skills (Guthrie, 1954). As the worker begins his job, skills may be important; but as he seeks promotion and sets higher goals, he must display good human relations (Cook and Lanham, 1968).

In a report by Liles (1959), the reasons for employees being discharged from their jobs were studied. Brewer found 62.4 percent of the employees studied were discharged for undesirable personal-traits. Hunt found 80 percent were dismissed for undesirable personal-traits, and Thompson found 69 percent were dismissed for these same reasons.

The panel of Consultants on Vocational Education, which was created by President Kennedy in 1961, expressed two major failures of vocational education: (1) lack of sensitivity to changes in the labor market, and (2) lack of sensitivity to the needs of various segments of the population (Evans, Mangum, and Pragan, 1969).

Included as a part of the objectives of the Vocational Education Act of 1968 was the following statement:

> . . . Will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training. (U.S. Congress, 1968, p. 1)

Because of the concern for disabled workers and their ability or inability to obtain employment and remain employed, the Industrial Relations Center at the University of Minnesota began research in 1957 on a theory of work adjustment. As the project developed, the predicting of job satisfaction became a primary concern. To have

satisfaction in one's job, the employee must adjust to his work situation. Therefore, work adjustment was defined as the "process by which the individual acts, reacts, and comes to terms with his work environment." (Dawis, England, and Lofquist, 1964, p. 8)

The theory of work adjustment fostered by the University of Minnesota focused on determining desirable work adjustment outcomes. In this theory of prediction, when an individual's work personality was closely correlated with the work environment, favorable work adjustment outcomes were expected. Figure 1 illustrates that if favorable work adjustment were to take place, the individual's vocational abilities and vocational needs which make up the work personality should closely correspond with the ability requirements of the job and the reinforcer system which constitute the work environment.

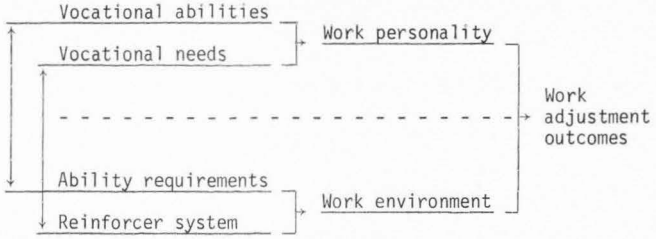

Figure 1. The theory of work adjustment.

Work personality focused on two sets of factors: vocational abilities and vocational needs. Vocational abilities included a wide range of responses used by the individual. Some examples of abilities were general intelligence, verbal ability, spatial ability, form

perception, clerical ability, motor coordination, finger dexterity, and manual dexterity. Vocational needs were more difficult to define. However, the research team identified 20 personal-social needs which were important to the individual. In the studies conducted on work adjustment, the needs were considered as reinforcers which the individual believed to be important to receive from his work environment. The Minnesota Importance Questionnaire, hereafter referred to as the MIQ, became the questionnaire form designed to identify these needs (Dawis, England, and Lofquist, 1964).

Following are the 20 need categories which were included in the MIQ:

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.
13. *Responsibility:* I could make decisions on my own.
14. *Security:* The job would provide for steady employment.
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 (with top management).

18. *Supervision-Technical:* My boss would train his men well.
19. *Variety:* I could do something different every day.
20. *Working Conditions:* The job would have good working conditions. (Weiss et al., 1964, p. 21)

The work environment was also determined by two sets of factors: ability requirements and the reinforcer system. To simulate the ability requirements, several ability aptitude tests could be used to determine the individual's vocational ability. In the research conducted by Minnesota, the Employment Service's Occupational Aptitude Patterns and Worker Trait Requirements ratings were used (Dawis, 1967).

The reinforcer system was important for it provided the reactions of working supervisors to a series of questions concerning the job's working environment. Reinforcers were conditions in the employee's working environment which caused him to respond favorably or unfavorably on the job. If an employee received a favorable reaction from his employer, job satisfaction would be more likely to occur. However, if the employee received unfavorable reactions from his employer, job dissatisfaction would likely occur. If job satisfaction were to be predicted, it became necessary for the Minnesota research team to simulate reinforcers which various occupations were likely to produce.

To do this, they developed a questionnaire similar to the Minnesota Importance Questionnaire (MIQ) called the Minnesota Job Description Questionnaire (MJDG). The MJDQ was then administered to supervisors in 81 occupations. The supervisors' reactions to the MJDQ were numerically evaluated and plotted graphically in profile form. These profiles established the Occupational Reinforcer Patterns (ORPs). When an ORP for a given occupation was combined with the abilities required

for that occupation, the theoretical work environment was established (Borgen et al., 1968b).

One of the main contributions of the theory of work adjustment was its ability to predict job satisfaction. To accomplish the prediction of job satisfaction, the MIQ would be administered to students; each student's reactions to the 20 vocational needs would be given a numerical value and plotted graphically in a profile form. When used in a counseling situation, the physical and mental abilities of the individual would be matched with the ability requirements of the job; and his vocational needs would be matched with a similar reinforcer system.

Although the theory of work adjustment was based upon four factors--vocational abilities, vocational needs, ability requirements, and the reinforcer system--this study measured the vocational needs of the students and compared these results to the previously established ORPs.

Statement of the Problem

A general problem was that workers lose their jobs because their work environment was not compatible with their personal-social needs. A more specific problem was that job turnover was greater among young workers than among older workers. Therefore, in order to improve job satisfaction, one method was to gain more knowledge of the vocational needs which employees believe to be important. As indicated by the theory of work adjustment, the work success, which an individual may or may not have obtained, depended upon his abilities and vocational needs.

Little information was available to indicate whether students were being prepared in occupations which would meet their needs. Even if

the school adequately developed the abilities of the individual, but had not considered his personal-social needs, the individual might be preparing for an occupation in which he would not find job satisfaction.

Purpose of the Study

The purpose of this study was to investigate, compare, and analyze the personal-social needs of selected rural and urban industrial education high school students. From the compiled and profiled data of the MIQ, the answers to the following questions were sought:

1. What is the rank order of importance, from most to least, of the 20 needs identified by the MIQ and expressed by the entire population?

2. What is the rank order of importance, from most to least, of the 20 needs identified by the MIQ and expressed by each individual school sample?

3. Is there a significant difference between the composite profiles of the students in the rural high schools and the composite profiles of the students in the urban high schools?

4. What percentage of the students in each high school is presently preparing for occupations in the Occupational Reinforcer Pattern (ORP) cluster which is identical to their Minnesota Importance Questionnaire (MIQ) profile?

5. What percentage of the students in each high school is preparing for occupations in which they will be satisfied, likely satisfied, and not satisfied as identified by the MIQ?

Limitations of the Study

This descriptive research employed the survey technique using a questionnaire. The questionnaire was the MIQ which was administered to high school students in the state of Utah. The high school students were classified into two categories: (1) those industrial and agricultural students enrolled in rural high schools, and (2) those industrial vocational students enrolled in urban high schools.

The rural high school student population was limited to those high schools participating in the Small Schools Integrated Shop Program. Seven rural high schools participated in the Integrated Shop Program, which was an educational program designed to combine industrial arts, trade and industrial, and agricultural mechanics learning experiences to provide a more complete educational program. The urban high school student population was limited to three high schools in the Davis and Granite school districts which are in the Salt Lake City area.

The students involved in the study were those participating in industrial education programs and represented the ninth, tenth, eleventh, and twelfth grades. The schools represented by these students were identified in the study by letter designation only.

Definition of Terms

The terms used throughout this study were used in accordance with the following definitions:

Satisfaction. Satisfaction or dissatisfaction refers to how the worker himself viewed overall job satisfaction, as well as satisfaction with various aspects of the work environment, including supervisor,

co-workers, working conditions, hours, pay, and type of work (Scott et al., 1960).

Satisfactoriness. Satisfactoriness and unsatisfactoriness means how the employer evaluated the worker's productivity and efficiency, the matching of his abilities with job requirements, his ability to get along with others and to follow company policies (Scott et al., 1960).

Vocational abilities. Abilities include a wide range of responses used by the individual. Some examples of abilities are general intelligence, verbal ability, numerical ability, spatial ability, form dexterity, and manual dexterity (Dawis, England, and Lofquist, 1964).

Vocational needs--job satisfaction needs. Dimensions of reinforcement experience associated with types of stimulus conditions which operate differently as effective reinforcers. Some examples are: achievement, authority, creativity, economic reward, independence, and recognition (Dawis, England, and Lofquist, 1964).

Work personality. The work personality is the culmination of vocational abilities and vocational needs.

Ability requirements. Specifications of ability which the job required for a satisfactory work performance. These specifications were expressed in terms of the same dimension as the individual's set of abilities (Dawis, England, and Lofquist, 1964).

Reinforcer system. In the theory of work adjustment, this term represents a phase of the work environment. Reinforcers are environmental conditions which create positive or negative reactions on the part of the worker. The reinforcer system was simulated by the

Occupational Reinforcer Pattern profiles which were obtained from working supervisors (Betz et al., 1966).

Work environment. The work environment is the culmination of ability requirements of the job and the reinforcer system.

Occupational Reinforcer Patterns. The Occupational Reinforcer Patterns (ORPs) were developed to represent a reinforcer system which was a part of the work environment. The reinforcer system indicated the reactions which supervisors considered important for employees to possess.

Work adjustment. Work adjustment is the "process by which the individual acts, reacts, and comes to terms with his work environment"; the outcome of the interaction between an individual's work personality and his work environment (Dawis, England, and Lofquist, 1964, p. 8).

Cluster. Included in a given cluster were the vocations which had similar Occupational Reinforcer Patterns.

Rural school. The rural high school sample included those schools located in open country or agricultural areas with high school enrollments of 350 or less.

Urban school. The urban high school sample included those schools located in or near a city with high school enrollments of 1,000 to 3,000.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Because one's occupation is such an essential part of life for most people, finding satisfaction in one's work is a primary goal in life. Vocational counseling has attempted to help individuals find their rightful place in society and in the world of work.

Most research on vocational counseling has indicated that those being counseled come closer to finding satisfaction in their work than do those without counseling. It has been determined that those being counseled receive a higher proportion of realistic vocational choices, receive higher pay, tend to reflect more continuous employment, experience greater job satisfaction, and receive better ratings by their employers (Rosengarten, 1962).

The major theories of vocational guidance investigated for this study were: (1) trait-factor, (2) patterns, (3) motivational, and (4) the theory upon which this study was based, the theory of work adjustment. To better understand the theories, it was necessary to reveal their purposes and functions.

Trait-Factor Theory

As early as 1890, Frank Parsons began counseling underprivileged youth in Boston. This work paved the way for his development of an organized vocational guidance service (Borow, 1964). His pattern or

model of vocational guidance went unchallenged for three decades and is still being applied by many vocational counselors (Patterson, 1964). In 1908, Parsons maintained that the wise choice of a vocation involved:

> (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and their causes; (2) a knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; (3) true reasoning on the relations of these two groups of facts. (Parsons, 1967)

With the development of mental testing in the early 1900's, vocational placement became the center of attention. Just prior to World War I, the measuring of individual differences became the main function of the testing programs. Many attempts to identify occupations were made through the use of the results of the testing for individual differences. As early as 1920, students were being channeled into various subject areas; these areas depended upon the scores which the students received through testing. The Army-Alpha Intelligence test was used for similar reasons during World War I (Bailey, 1968).

In 1922, Fryer established five occupational-intelligence standards: (1) professional, (2) technical, (3) skilled, (4) semi-skilled, and (5) unskilled. The basis for establishing the levels was a different intelligence grouping for each level. An example of the classifications would be: engineer, 161; clergyman, 152; teacher, 122; fireman, 27; sheet metal worker, 22; and fisherman, 20 (Bailey, 1968).

The emphasis after World War I and up to World War II was that of prediction, to predict how successful an individual would be in the occupation of his choice (Bailey, 1968). During this period, the emphasis shifted to the evaluation of aptitudes, abilities, and interests. Ability tests were constructed to predict success in vocational

activity. The short cut to vocational guidance became the simple matching of the person and the job, which is commonly referred to as the trait-factor approach (Paterson, 1949).

A study by the University of Minnesota in the 1930's involving unemployed workers added much knowledge to the vocational guidance program. This study gave increased knowledge on intelligence testing, clerical aptitude tests, mechanical ability tests, tests of manipulative dexterities, vocational interest blanks, and personalities. From this research, the accepted procedure of matching abilities and interests with occupational requirements and trends became a popular and accepted guidance procedure (Bailey, 1968).

World War II further stimulated the use of the trait-factor approach. The attempt which the armed services made to place personnel into positions in which they could best serve was accomplished chiefly through testing.

The trait-factor theory took on a new light when experimental and theoretical studies began. These studies developed mock experiences for the person to complete. In the simulated work or ability experiences, the individual had the opportunity to discover which skills he could perform the best (Bailey, 1968).

Patterns Theory

In the 1950's, the Patterns Theory provided a new basis for vocational guidance. One of the best known pattern theories dealt with life stages. The theory was introduced by Buehler, who labeled the life stages: (1) growth, (2) exploration, (3) establishment, (4) maintenance, and (5) decline. People go through corresponding developmental

stages at similar ages, and vocational development fits into this same pattern (Barry and Wolf, 1962).

Heading a team of vocational theorists, Eli Ginzberg projected another theory of occupational choice consisting of three stages: (1) fantasy, (2) tentative, and (3) realistic. Fantasy occurs during the ages of childhood through 11 years of age. During this time, the individual thinks about an occupation in terms of his wish to be an adult. To some degree, he believes he can be whatever he wants to be. The tentative stage occurs between the ages of 11 and 17 when a person recognizes the problem of deciding on a future occupation. His choices are determined by interest, capacities, and then by values. Ginzberg further divided the realistic stage into states of exploration, crystallization, and specification (Ginzberg, 1963).

The Ginzberg study emphasized a concept of occupational choices, rather than the idea that a vocational decision is a single process. Instead, one's occupational choice is made over a period of six to seven years. Decisions are made as one goes along, and each decision affects one's future. Since one cannot go back and reverse decisions, he is geared to these previous decisions, and the final choice of an occupation is a compromise.

Miller and Form (1964) viewed occupational development as a life-long process, and established life stages in terms of work. Similar to Buehler's, they were called: (1) preparatory, (2) initial, (3) transition, (4) trial, (5) stable, and (6) retired.

Donald Super (1957), one of the most notable people in the area of vocational development, combined all of the above stages into the following: (1) growth, birth to 14 years; (2) exploration, 15 to 24

years; (3) establishment, 25 to 44 years; (4) maintenance, 45 to 64 years; and (5) decline, 65 years and beyond.

Through the research and writing efforts of Super, his 12 propositions on the nature of vocational developmental theory were developed. The propositions are as follows:

1. Vocational development is an ongoing, continuous, and generally irreversible process.
2. Vocational development is an orderly, patterned process and thus predictable.
3. Vocational development is a dynamic process of compromise or synthesis.
4. Self-concepts begin to form prior to adolescence, become clearer in adolescence, and are translated into occupational terms in adolescence.
5. Reality factors play an increasingly important part in occupational choice with increasing age, from early adolescence to adulthood.
6. Identification with a parent or parent substitute is related to the development of adequate roles, their consistent and harmonious interrelationship, and their interpretation in terms of vocational plans and eventualities.
7. The direction and rate of the vertical movement of an individual from one occupational level to another is related to his intelligence, parental socio-economic level, status needs, values, interests, skill in interpersonal relationships, and the supply and demand in the economy.
8. The occupational field which the individual enters is related to his interests and values, the identifications he makes with parental or substitute role models, the community resources he uses, the level and quality of his educational background, and the occupational structure, trends, and attitudes of his community.
9. Although each occupation requires a characteristic pattern of abilities, interests, and personality traits, the tolerances are wide enough to allow both some variety of individuals in each occupation and some diversity of occupations for each individual.
10. Work satisfactions depend upon the extent to which the individual can find adequate outlets in his job for his abilities, interests, values and personality traits.
11. The degree of satisfaction the individual attains from his work is related to the degree to which he has been able to implement his self-concept in his work.
12. Work and occupation provide a focus for personality organization for most men and many women, although for some persons this focus is peripheral, incidental, or even nonexistent, and other foci such as social activities and the home are central. (Super, 1953)

Vocational development became the new term which succeeded Super's vocational research. Vocational development begins early in life and proceeds along a curve until late in life. This continuum of vocational development can be broken into vocational life stages with their peculiar characteristics (Super, 1957).

Motivational Theory

The Motivational Theory is primarily concerned with the reason people work and the meaning of satisfaction (Bailey, 1968).

Work

Work means different things to different people. For many, it is the means of earning a living. However, Morse and Weiss (1955) found that if men had enough money, they would still want to work; so work means more than earning a living.

Most people take work for granted. Even though it is a necessary part of life, people do not fully realize what it means to them. Although leisure, modern conveniences, and social life are being emphasized, work continues to dominate the lives of most people. "The other activities of daily living depend in large measure upon the nature and conditions of one's work." (Peters and Hansen, 1966, p. 1)

Morse and Weiss (1955) asked what work meant to various classes of people. For middle-class people, work allowed them to gain a sense of accomplishment. To the working class, work meant having something to do; and without work, there was no chance for physical activity. To the farmer, work meant keeping busy, and it was difficult for him to even consider not working.

Schrecker (1948) included several conditions in his definition, but basically it was the expenditure of energy, designed to overcome resistance and bring about change. This was more of a strict physics definition.

Motivational work theory. Why do men work? What satisfaction do they gain from work? From the search for answers to these questions came the introduction of motivational theories.

Maslow (1954) listed human needs in the hierarchy of: (1) physiological; (2) safety; (3) belongingness and love; (4) importance, respect, self-esteem, independence; (5) information; (6) understanding; (7) beauty; and (8) self-actualization. Only when the lower needs are satisfied will or can a man seek a higher need level. If a man is hungry, he will take any kind of work to earn money for food. Other needs will come into focus only after the primary ones are satisfied. Thus, love would not emerge as a strong need in a starving man.

Anne Roe (1956) applied Maslow's theory to occupations in hypothesizing that childhood experiences are occupational determinants. Genetic factors and need hierarchies combine to influence the selection of a vocation.

As an example, a home, in which the child is the center of attention, provides the surroundings in which the lower-level needs are satisfied. In contrast, rejecting parents may only be satisfying the lowest need level of their child. Roe (1956) contended that the latter child will be defensive and uncertain and will turn to non-person-type occupations. The individual from the child-centered home will relate with others and turn to person-type occupations.

Switzer et al. (1962), Powell (1968), and Green and Parker (1965) all attempted to test Roe's hypotheses and could not uphold her theory conclusively. Partial support, however, was obtained by all of them which indicated the possibility that one's childhood experiences are occupational determinants. There is no doubt that many more variables are involved.

Satisfaction and satisfactoriness

Both satisfaction and satisfactoriness refer to work adjustment; satisfaction is viewed from the individual's standpoint, while satisfactoriness is viewed from the employer's standpoint.

Satisfaction. Satisfaction or dissatisfaction is how the worker himself views overall job satisfaction, as well as satisfaction with various aspects of the work environment including supervisors, co-workers, working conditions, hours, pay, and type of work (Scott et al., 1960).

Likert made the following statement concerning discrepancy, and Katzell (1964) and Vroom (1964) held similar views:

> The subordinate's reaction to the supervisor's behavior always depends upon the relationship between the supervisory act as perceived by the subordinate and the expectations, values, and interpersonal skills of the subordinate. (Likert, 1961, p. 94-95)

Schaffer (1953, p. 3) contended "overall job satisfaction will vary directly with the extent to which those needs of an individual which can be satisfied are actually satisfied . . . ."

Locke (1968, p. 10) stated that job satisfaction and dissatisfaction are "a function of the perceived relationship between what one wants from one's job and what one perceives it as offering or entailing." With reference to Figure 1 on page 3, this would mean that the needs and abilities must be determined first before comparing them

with the work environment when determining satisfaction or dissatisfaction.

According to Locke (1968), too many studies correlate satisfaction with age, tenure, pay, and education. As a result, correlations are low and inconsistent because these measures are not based on values as perceived by the individual.

For instance, Turner and Lawrence (Locke, 1968) attempted to find correlations between characteristics of the work task and job satisfaction without considering workers' values. Correlations failed to come out as expected. Zaleznick, Christensen, and Roethlisberger (1958) tried to predict job satisfaction from workers' social status with the same disappointing results.

Katzell (1964) believed that a given amount of object-value discrepancy would produce different degrees of satisfaction, depending upon the importance of the value to the individual. The more one wants of some element the less dissatisfying a given discrepancy will be (Locke, 1968).

For example, a man had been offered two jobs. The first job was in a part of the country which the man found more to his liking. The conditions of work were better than the second job also. In other words, the first job was more desirable. The discrepancy in pay for both jobs was the same--that is, the difference between what the man thought he should have and what the companies had offered to pay him. According to Katzell (1964), the gentleman found the discrepancy in pay for the second job more dissatisfying than the discrepancy in pay for the first job.

To predict satisfaction, Locke (1968) considered the individual differences in values. He correlated ratings of degree of discrepancy between the amount of pay a group of workers actually received from a job and the amount they believed they should receive. A high degree of correlation was obtained.

Job satisfaction and motivation. Important indicators of work adjustment were found in the literature on job satisfaction. In two different studies, Herzberg, Mausner, and Snyderman (1959) and Walt (1962) found the following to be strong determiners of job satisfaction: work itself, responsibility, achievement, and recognition. While interpersonal relations proved to be a satisfier according to Walt, Herzberg found it to be a dissatisfier. Both found salary to be a source of job satisfaction.

McRae (1963) found that persons in job compatible with interests measured seven to nine years earlier, expressed a greater degree of satisfaction with their jobs than did those who were in jobs not compatible with earlier measured interests.

Rogers (1964) found that those persons who dropped out of college or trade school were less satisfied with their jobs than were those who entered the world of work immediately after high school.

Morale and employee attitudes. Attitude has more than one meaning, and Fishbein (1967) listed several. In one way or another, each definition stated that preparation or readiness for responses was the essential feature of attitude.

> An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related.
> . . . . . .

> An attitude provokes behavior that is favorable or unfavorable, affirmative or negative toward an object or objects. (Fishbein, 1967, p. 8)

Changes in attitude would be significant as indicators of work adjustment. Yet, very few attempts to measure changes have been made. Perhaps this lack was due to the fact that this would require longitudinal studies and many researchers do not want to take that much time (Scott et al., 1960).

Likert and Seashore (1954) concluded that supervisors who saw their job in human-relations terms and did not stress production, efficiency, and rule enforcement, led higher-morale groups than did supervisors concentrating on production. Productivity was also higher when the morale was higher.

Browne and Nietzel (1952) found that morale scores tended to correlate positively with supervisory level and negatively with the supervisors' estimates of their responsibility, authority, and delegation of authority. Thus, the closer one's self-estimates were to his superior's and peer's judgments, the higher the morale tended to be.

In a study by Jurgensen (1947), mechanical workers ranked security as having the most important influence on job preference. They ranked advancement and type of work second and third. Sales and clerical workers ranked the same three factors, but listed type of work first and security third.

Lindahl (1949) surveyed office workers and factory workers to determine what they felt was most important in a good job. The office workers ranked interesting work highest, while the factory workers ranked security highest.

After a review of literature by Scott et al. (1960), certain aspects of the work situation tended to appear consistently. These factors were: supervision, wages, working conditions, co-workers, identification with company, advancement and promotion, communication management and administration, job demands, and over-all satisfaction.

Kirchner (1965) studied attitudes toward work and job satisfaction of outdoor advertising salesmen. He found persons with more favorable work attitudes were better salesmen.

Herzberg, Mausner, and Snyderman (1959) believed there were a great variety of measures of job attitudes. One can have the worker express his job satisfaction by answering questions which reflect his over-all attitudes toward his own job. Another measure was a scaled inventory of morale or job attitudes to evaluate specific aspects of his work.

Satisfactoriness. Satisfactoriness or unsatisfactoriness is how the employer evaluates the worker's productivity and efficiency, the matching of his abilities with job requirements, his ability to get along with others and to follow company policies (Scott et al., 1960).

Do employers realize the needs of employees? Watson (1966) studied workers in an aerospace firm and found disagreement between supervisors and subordinates in the perception of the needs for achievement and recognition. Supervisors consistently undervalued the importance of these needs of their employees.

Is work adjustment necessary on the part of the employee because he must adjust to the wishes of his employer? If employers concentrated on satisfying the needs of their employees, would workers be better satisfied? Robert Ford, personnel director for manpower utilization

at American Telephone Company in New York, has put into practice his job enrichment theory to make the job more interesting for the employee. He believed each employee should be given multiple responsibilities so as to feel a part of the total operation. Results indicated job turnover had dropped substantially, and general work morale had increased. In one plant, the number of formal union grievances dropped from one per week to none in one year (Miller, 1970).

Theory of Work Adjustment

Development

When the research project at the University of Minnesota began in 1957, two major goals were identified: (1) to determine the employment problems of the disabled, and (2) to investigate the job placement procedures in the various rehabilitation services. With financial aid from the Office of Vocational Rehabilitation, a survey was conducted to identify the disabled and their problems. Some of the early studies which were conducted on the disabled were concerned with: earnings, tenure, employer satisfaction, job satisfaction, job adjustment, absenteeism, accident record, efficiency, and promotion (Betz et al., 1966).

The second stage of the project, during those years including 1959, 1960, 1961, and 1962, was channeled towards job placement. During this period, an extensive review of literature was conducted and a theoretical framework for the project was developed (Dawis, 1967).

The concept of work adjustment, which was to measure vocational rehabilitation outcomes, was suggested from the research findings. The theory was supported through studies on job satisfaction, employee

attitudes, industrial conflicts and industrial morale, utilizing counseling interviews and exit interviews, productivity and efficiency, job tenure, and work history patterns (Betz et al., 1966).

In 1964, the theory of work adjustment was published by the University of Minnesota. In the third stage of the project, which is now in progress, efforts are being devoted to the development and implementation of the work adjustment theory.

Work adjustment

The theory of work adjustment is basically a theory of job placement. It is a vocational guidance effort using the trait-factor theory which matches the work personality of an individual with a compatible work environment (Betz et al., 1966).

Work adjustment is defined as the "process by which the individual acts, reacts, and comes to terms with his work environment." (Dawis, England, and Lofquist, 1964, p. 8). It is the outcome of the interaction between an individual and his work environment. Work adjustment occurs throughout one's working years and involves cycles of satisfaction and dissatisfaction, and of satisfactoriness and unsatisfactoriness (Scott et al., 1960).

Borgen et al. explained the theory in the manner below:

> This theory uses the correspondence (or lack of it) between the work personality and work environment as the principal reason or explanation for observed work adjustment outcomes (satisfactoriness, satisfaction, and tenure). The theory states further that vocational abilities and vocational needs are significant aspects of the work personality, while ability requirements and reinforcer systems are significant aspects of the work environment. Work adjustment is predicted by matching an individual's work personality with work environment. (Borgen et al., 1968, p. v)

When the vocational abilities are combined with the vocational needs, the individual's work personality has been determined. When the job ability requirements are combined with the reinforcers of the occupation, the work environment is determined. The closer the matching of the individual's work personality to the work environment, the greater will be his job satisfaction.

Work personality. The work personality of an individual is based on two categories: (1) abilities, and (2) needs. To measure the abilities, special intelligence, aptitude, and interest, tests can be administered to the individual. To measure the vocational needs, the Minnesota research team found it necessary to develop a special instrument which they called the MIQ.

Abilities include a wide range of responses used by the individual. Some examples of abilities are general intelligence, verbal ability, spatial ability, form perception, clerical ability, motor coordination, finger dexterity, and manual dexterity (Dawis, England, and Lofquist, 1964).

There are 20 needs identified in the theory of work adjustment. In the studies on work adjustment, the needs are reinforcers which the individual believes important to receive from his work environment (Dawis, England, and Lofquist, 1964). These needs were discussed in greater detail in Chapter I.

One of the assumptions of the theory of work adjustment is that the work personality is relatively stable. Without this assumption, the theory would have to be changed. However, it should be noted that stability of the work personality is not completely possible, for there are those individuals who never reach a stable point. There is also

the possibility that a work personality can be altered by intensive counseling. Despite these problems, the theory of work adjustment places heavy reliance on the relative stability of the work personality (Dawis, 1967).

Work environment. The work environment is comprised of two variables: (1) ability requirements of the job, and (2) the reinforcer system. To simulate the ability requirements, several ability aptitude tests could be used to determine the individual's vocational ability. In the research conducted by the Minnesota team, the Employment Service's Occupational Aptitude Patterns and Worker Trait Requirements ratings were used (Dawis, 1967). To simulate the reinforcer system, it was necessary to develop a special instrument, the Occupational Reinforcer Pattern (ORP) (Dawis, England, and Lofquist, 1964).

In the absence of a comparable measure for the reinforcer system, it was necessary for the research team to develop another questionnaire. This was accomplished by altering the Minnesota Importance Questionnaire (MIQ) and allowing supervisors to react to a similar needs scale. The new measuring device was called the Minnesota Job Description Questionnaire (MJDQ). From the reactions of supervisors to the MJDQ, a numerical and graphical representation called ORP was established (Dawis, England, and Lofquist, 1964).

The term reinforcer system refers to "environmental conditions which are associated with the continuance of responding." (Dawis, England, and Lofquist, 1964, p. 5)

Betz et al. explained reinforcers by stating that the individual was a responding organism:

> The individual will respond when his response potentials make responding possible, and when the environment permits and/or stimulates responding. As he responds, his responding becomes associated with reinforcers--environmental conditions which maintain responding. (Betz et al., 1966, p. 5)

The work environment is the culmination of the ability requirements of the occupation and the reinforcer system of that occupation.

Propositions

Nine propositions evolved from the theory of work adjustment, and they are as follows:

1. An individual's work adjustment at any point in time is defined by his concurrent levels of satisfactoriness and satisfaction.
2. Satisfactoriness is a function of the correspondence between an individual's set of abilities and the ability requirements of the work environment, provided that the individual's needs correspond with the reinforcer system of the work environment.
3. Satisfaction is 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.
4. Satisfaction moderates the functional relationship between satisfactoriness and the correspondence of the individual's ability set with the ability requirements of the work environment.
5. Satisfactoriness moderates the functional relationship between satisfaction and the correspondence of the reinforcer system of the work environment with the individual's set of needs.
6. The probability of an individual's being forced out of the work environment is inversely related to his measured satisfactoriness.
7. The probability of an individual's voluntarily leaving the work environment is inversely related to his measured satisfaction.
8. Tenure is a function of satisfactoriness and satisfaction.
9. The correspondence between the individual (abilities and needs) and the work environment (ability requirements and reinforcer system) increases as a function of tenure. (Betz et al., 1966, p. 6)

The Assessment Instrument

In this study, the 1967 revision of the Minnesota Importance Questionnaire (MIQ) was the instrument administered to the students. The Occupational Reinforcer Patterns (ORPs), which were previously established by the Minnesota research team, were used for occupational needs comparisons.

Minnesota Importance Questionnaire

Development. The first attempt to develop a questionnaire which would measure vocational needs was the N-Factors Questionnaire (NFQ). The NFQ identified 12 vocational needs, with four questions directed toward each of the 12 needs. To respond to the NFQ, a yes or no indication was needed. The validity of the NFQ was generally adequate; however, the low reliability was the factor which made a revision necessary (Gay and Weiss, 1969).

The questionnaire which replaced the NFQ was the first form of the MIQ. To help improve the reliability of the NFQ, the number of questions was increased from 48 to 100 items on the MIQ. Twenty vocational needs were identified, with five questions for each of the 20 needs. To obtain a response to the questionnaire, the Likert Scale was employed. The responses were: very unimportant, not important, important, very important, and neither. Although the first form of the MIQ was an improvement over the NFQ, there still existed a need for improving the reliability (Gay and Weiss, 1969).

The next revision of the MIQ occurred in 1965. This revision continued to use the 20 vocational need scales; however, the number of questions was increased to 380. The responses to the questions were

obtained through the pair comparison technique. The 1965 revision of the MIQ resulted in a higher reliability, with the lowest scale having a .73 and the highest scale a .94 with a median of .82 for the 20 need scales (Gay and Weiss, 1969, p. 33-34).

Revision of 1967. The 1967 revision of the MIQ was the questionnaire form used in this study. During the revision, concern was given to two factors: meaningfulness of the scores and format of the questionnaire. Did all people have the same zero point on the questionnaire? This question prompted the development of the absolute judgment section of the MIQ which adjusted each individual's score to his own subjective neutral point. The questionnaire continued to use the 20 need scales, but the instrument was reduced to 210 items (Gay and Weiss, 1969).

The reliability of the MIQ was analyzed in four ways: (1) the internal consistency of the scale, (2) the internal consistency of total profiles, (3) the stability of MIQ scale values over time, and (4) the stability of MIQ profiles over time (Gay and Weiss, 1969).

To test the scale internal consistency of the MIQ, each of the 20 scales was investigated by the means of the Hoyt Internal Consistency Reliability Coefficient. For the nine different groups in the study, the median scale internal consistency reliability coefficients ranged from .77 to .81. The lowest single scale reliability for any group was .30, and the highest was .95. This reliability rating was considered acceptable by the University of Minnesota research team (Gay and Weiss, 1969, p. 36).

The profile internal consistency was determined by the Total Circular Triads (TCT). The TCT indicated the consistency of the individual's responses to the 210 questions on the MIQ; the higher the

TCT score, the greater the inconsistency of the individual's responses. This score was tabulated by the computer as the scoring took place and was indicated on each individual's MIQ profile (Gay and Weiss, 1969).

To determine how stable the MIQ was, the questionnaire was analyzed by the test-retest method. The test-retest ranged from immediate retesting to 10 months. The median scale stability coefficients ranged from .48 for the four-month period to .89 for the immediate retesting (Gay and Weiss, 1969, p. 37).

The stability of the MIQ profiles became a concern as well. One assumption upon which the theory of work adjustment was based was that the individual's MIQ profile is stable. If the MIQ were to be used for long-term vocational planning, the results of the instrument could not be subject to change. Therefore, the stability of the MIQ profile was studied over nine time intervals. The median stability coefficient for the immediate retest was .95; for the four-month retest, .71; and for 10 months, .87. These results supported the theory of work adjustment for long-range planning (Gay and Weiss, 1969, p. 37-38).

One of the major requirements for determining whether the MIQ was valid or not was to determine its ability to distinguish between groups which were assumed to have had different vocational needs patterns. Some of the groups which were studied by the Minnesota researchers were: (1) disabled versus non-disabled workers, (2) persons with different occupations, (3) those with and without employment experience, (4) sex differences, and (5) occupational tenure differences. In each of the above cases, the MIQ distinguished a difference between the groups studied (Gay and Weiss, 1969).

Occupational Reinforcer Patterns

The Occupational Reinforcer Patterns (ORPs) were developed to represent a reinforcer system which is a part of the work environment. The reinforcer system indicated the reactions which supervisors considered important for employees to possess. These reactions were obtained through the use of the Minnesota Job Description Questionnaire (MJDQ), which was developed by the University of Minnesota research team and administered to supervisors in 81 different occupations.

The supervisor was selected to represent the work environment because he was considered a compromise between the employee and the personnel manager. The supervisor was close to the job and had most likely observed employees on the job (Borgen et al., 1968b, p. 56).

The validity of the ORPs was determined by comparing the mean scores of each scale for 81 occupations by using the one-way analysis of variance and by rank-ordering the scale mean scores. The results indicated that occupational differences in scores were highly significant on the scales of the MJDQ (Borgen et al., 1968b).

ORPs cluster patterns. The occupations were then grouped into similar clusters and classified into a taxonomy of occupations. This was accomplished by the University of Minnesota research team's comparing all of the occupations studied. The analysis of the nine clusters was not concerned with a scale-by-scale analysis, but an analysis which was concerned with the total profiles for the 81 occupations (Borgen et al., 1968b).

Nine clusters were developed from the 81 occupations, and an occupational hierarchy was formed. The nine cluster profiles in order

of their hierarchy were: (1) technical occupations, professional; (2) technical occupations, semi-professional; (3) sales occupations, service; (4) service occupations, social-education; (5) service occupations, business detail; (6) service occupations, personal; (7) manual occupations, building trades; (8) manual occupations, manufacturing; and (9) manual occupations, service-maintenance.

Examples of occupations included in each cluster are shown in Appendix A, which indicates the numerical values and graphical profiles of the nine clusters as rated by supervisors in those occupational clusters. Included on these figures are the divisions low, moderate, and high, which indicate the degree of importance of the scale values.

Summary

Although vocational counseling was a concern for many years, the contributions of Frank Parsons in 1909 were among the first to advocate a scientific approach.

The development of intelligence testing some years later brought a completely new outlook to vocational guidance. This concept developed into the trait-factor theory, which advocated the determination of an individual's mental and physical factors and matched them to a vocation which had similar characteristics.

In the early stages of vocational guidance, those years preceding World War I, the primary concern was for building tests which would measure specific psychological variables (Bailey, 1968). However, after World War I, the primary goal of test makers became the construction of tests for predictive value.

The growth of interest in vocational behavior since the early 1950's had been accompanied by increased research devoted to the study of vocational behavior and development (Holland, 1964). During the early 1950's, the Patterns Theory was developed. This theory identified life stages which occurred at different times in people's lives. It was during the various stages when the prospective worker began and completed his occupational choice.

The third theory was related to why people work and what satisfaction meant. This theory was usually referred to as the Motivational Theory. This theory attempted to determine the role work played in a vocation and what made an individual satisfied with his work.

The Theory of Work Adjustment, identified by the University of Minnesota, recognized the importance of the work personality and the work environment. The work personality was a culmination of the individual's abilities and his personal-social needs. The work environment was a culmination of the abilities required by the job and the reinforcers which the job supplied. If the individual had the necessary abilities to fulfill the job requirements, and if his needs could have been fulfilled or reinforced by the work environment, he would probably have been more satisfied with his job.

One of the primary goals of the Theory of Work Adjustment was to predict work adjustment outcomes. This was accomplished by matching the individual's work personality with a similar work environment.

CHAPTER III

METHOD OF PROCEDURE

Introduction

Five major objectives were investigated in the study: (1) to determine the vocational needs of the entire population, (2) to determine the vocational needs of each school, (3) to determine if there were a difference in vocational needs between rural and urban students, (4) to determine if students were preparing for occupations which were similar to their vocational needs, and (5) to determine the percentage of the students who will be satisfied, likely satisfied, and not satisfied in their areas of training. The results of each objective were dependent upon the reactions of high school students to the 20 needs on the Minnesota Importance Questionnaire.

The completion of the study was dependent upon the selection of a sample, the selection of an instrument which would measure vocational needs, and the selection of a statistical treatment.

The Sample

The population for the study was selected from the state of Utah and was classified into two categories: (1) rural industrial and agricultural high school students, and (2) urban industrial vocational high school students.

Rural sample

The rural high schools selected for the study were those participating in a project known as the Integrated Shop Program. This is a program for small high schools in Utah and is under the direction of the Utah State Board for Vocational Education. It was designed to provide a more complete vocational education program for the students in small high schools than they had been able to offer in the past, and its subject matter was drawn from the common instructional elements of industrial arts, trade and industrial education, and agricultural mechanics. At the time of this study, it was being offered in seven high schools.

The Integrated Shop Program was designed as a four-year program, grades 9 through 12. The first two years of the program are exploratory in nature. In the ninth grade, students complete courses in drafting and woodwork and building construction. In the tenth grade, the courses are in power mechanics and metal fabrication. Power mechanics includes a study of many kinds of power, such as wind, water, steam, atomic, jet, electric, internal combustion engines, especially small engines, and external combustion engines. There are four major aspects of the metal fabrication course--welding, sheet metal work, bench metal work, and machine work. Each course in the exploratory program is one semester of 18 weeks in length, and is for one class period per day. Nearly all of the ninth and tenth grade boys in the pilot schools enroll in this program. Upon completion of the exploratory program, students decide whether or not they desire to continue in the program. If they do, they elect one of the four areas of work; that is, drafting, building construction, power mechanics, or metal fabrication, as a

field of specialization, and pursue this program for the next two years as eleventh and twelfth graders for two hours per day. With this kind of arrangement, students are able to obtain considerable specialized training by the time they complete high school. At the time of this study, only the exploratory program was in operation.

The Integrated Shop Program was under the direction of a committee of selected members of the vocational technical division of the Office of State Superintendent of Instruction. Permission to conduct this study was received from this committee. When permission was granted, each classroom instructor was personally contacted by the writer.

The rural student population were those students enrolled in the Small Schools Integrated Shop Program. The sample size was comprised of those students attending the integrated shop classes on the day when the questionnaire was administered.

Urban sample

The urban high schools selected for the study were also from the state of Utah. For the urban population, the metropolitan area of Salt Lake City was chosen, which included two school districts, Granite and Davis. Within the Granite district, six large high schools were identified; while in Davis district, five large high schools were identified. From Granite district, two of the larger high schools were selected, and one high school was selected from the Davis district.

In order to include these schools in the study, permission was received from the district vocational coordinators. When permission was granted, each classroom instructor was personally contacted by the writer.

The urban student population consisted of those students enrolled in vocational education classes in the schools chosen. The sample size was comprised of those students attending the vocational classes on the day when the questionnaire was administered.

The Procedure

Selection of the problem

One of the primary functions of education has been to help each individual to find satisfaction and adjustment in the world of work. Although educational procedures and teaching techniques were of the most importance, the researcher believed the real handicap for most workers was their social environment. Due to this concern, the researcher investigated, identified, and compared the vocational needs of high school students. As a preliminary review of literature progressed, it became more and more evident that adjustment was and would continue to be a grave problem for many workers.

Selection of the instrument

When the investigation of vocational needs began, it was the intent of the researcher to identify the needs and construct a questionnaire. As indicated by Borg (1963), one of the primary reasons for a review of literature was determining what work had taken place in the subject field so duplication would not take place. In the review of literature, several questionnaires were revealed, and often these questionnaires were developed by professional personnel through funded projects over long periods of time.

If the study of the vocational needs of students in the state of Utah were to be meaningful, an instrument was to be selected which had

already proved to be functional. The Minnesota Importance Questionnaire showed statistical evidence of possessing the necessary requirements for accomplishing the study. The reliability of the MIQ was analyzed in four ways: (1) the internal consistency of the scale, (2) the internal consistency of total profiles, (3) the stability of MIQ scale values of time, and (4) the stability of MIQ profiles over time (Gay and Weiss, 1969).

If the MIQ were to be used for long-term vocational planning, the results of the instrument must not be subject to change. Therefore, the stability of the MIQ was considered to be most important. Consequently, the stability of the MIQ was studied over different time intervals. The median stability coefficient for the immediate retest was .95; for the four-month retest, .71; and for 10 months, .87. These results were considered satisfactory to support the theory of work adjustment for long-range planning (Gay and Weiss, 1969).

Although little comparison of vocational needs had taken place in Utah, the director of the University of Minnesota work adjustment project supported the use of the questionnaire for measuring the high school students (Weiss, 1970).

Administration of the MIQ

After each high school had been identified and arrangements completed to administer the questionnaire, the school was personally visited. The questionnaire was explained to each class, as prescribed by the instructions for administering the MIQ, and administered during the students' regular scheduled class periods.

Scoring of the MIQ

Due to the complexity of scoring the MIQ, and under the advisement of the Minnesota research director, the completed questionnaires were mailed to the research project center on the University of Minnesota campus. Each questionnaire was then scored by computer, which produced a numerical value for each need scale as well as a graphical profile for each questionnaire. The consistency of each individual's responses to the questionnaire was also checked.

Analysis procedure

The data were then processed and analyzed in accordance with the objectives of the study.

Objective 1. What is the rank order of importance, from most to least, of the 20 needs identified by the MIQ and expressed by the entire population?

If the teacher and counselor were to realize the aspirations of students, these vocational needs had to be identified. To make the identification easier, the needs were placed in rank order.

To answer objective 1, it was necessary to complete the following steps: (1) the scale values for ability utilization for all the students in the study were totaled, (2) the same process was continued until all of the 20 needs were totaled, (3) the need scales receiving the larger totals on the scales values were considered to be more important to the students, and (4) the needs were then listed as they ranked from high to low in value.

Objective 2. What is the rank order of importance, from most to least, of the 20 needs identified by the MIQ and expressed by each individual school?

The problem confronted in objective 2 was solved similarly to objective 1; however, the totals for individual schools were sought.

Objective 3. Is there a significant difference between the composite profiles of the students in the rural high schools and the composite profiles of the students in the urban high schools?

If the vocational needs of rural and urban students were found to be similar, this could indicate that the educational approach might be similar for both rural and urban students when dealing with vocational needs.

To answer objective 3, it was necessary to analyze the responses through a statistical means. To determine whether there was a difference between the rural high schools and the urban high schools, two statistical tools were employed, one to give the difference between means and one to note the homogeneity of the responders. The following steps were followed to solve for objective 3: (1) the questionnaires were grouped by high school, (2) the need scales (as: ability utilization, achievement, and activity) for each student were totaled by schools, (3) the responses of the rural school students were totaled and the responses of the urban school students were totaled, (4) the results were statistically treated by using the student's t-ratio and the F-distribution, and (5) the results were recorded in table form.

Objective 4. What percentage of the students in each high school were preparing for occupations in the Occupational Reinforcer Pattern cluster which was identical to their Minnesota Importance Questionnaire profile?

The findings for this objective indicated the percentage of students who had realistic vocational needs in terms of the occupations for which they were preparing.

The students in the Small Schools Integrated Shop Program had not made definite vocational commitments because they were in the exploratory phase of the educational program. The rural students were preparing in the industrial education areas of drafting, woodworking, building construction, power mechanics, small engines, metals fabrication, sheet metal, bench metal, machine work, and welding. Since these occupations were included in clusters 7 (building trades) and 9 (service-maintenance), these were the clusters used in the analysis of data. Cluster 7 included those manual occupations related to the building trades, while cluster 9 included those manual occupations in the service-maintenance area. The nine clusters are in Appendix A.

The rural high schools and their students were analyzed by the following procedure: (1) the questionnaires were grouped by high schools, (2) the number of students from each high school was totaled, (3) the number of students from each school whose MIQ results indicated their favoring clusters 7 (building trades) and 9 (service-maintenance) were totaled, and (5) to determine the percentage, the total number of students in the study from each high school was divided into the total number of students listed in clusters 7 (building trades) and 9 (service-maintenance).

The students from the urban high schools were preparing for definite occupations which were indicated by each student. To answer objective 4 related to urban high schools, each school was analyzed by the following steps: (1) the questionnaires were grouped by schools, (2) within each urban high school, the questionnaires were grouped by vocations for which the students were being trained, (3) the number of students in each vocational area was totaled, (4) within the vocational

areas, the students' MIQ responses were totaled by clusters, (5) to obtain the percentages, the total number of students in each vocational area was divided into the total number in the corresponding cluster, and (6) the results were recorded in table form.

Objective 5. What percentage of the students in each high school is preparing for occupations in which they will be satisfied, likely satisfied, and not satisfied as identified by the MIQ?

One of the purposes of the theory of work adjustment was to determine the probability of job satisfaction in an occupation. The results of this objective gave the predictions of job satisfaction for the sample involved in the study.

To answer objective 5, the D-squared index score for each cluster for each student was used. As identified by the computer analysis of each D-squared index score, a cluster receiving a score from 1.00 to 8.99 will produce satisfaction for an individual. This individual will be likely satisfied in occupations in the clusters scoring 9.00 to 19.99, while he will not be satisfied in those occupations in clusters scoring above 19.99.

For the purpose of this study, the rural students' questionnaire results were analyzed by comparing them with clusters 7 (building trades) and 9 (service-maintenance). These clusters were selected because they represented the occupations in which the students were preparing. On the other hand, however, since the urban students had already made their occupational choices, their questionnaires results were analyzed only with the chosen occupational cluster.

The rural student sample was analyzed by the following steps: (1) the questionnaires were grouped by schools; (2) the number of

students from each high school was totaled; (3) the D-squared index score for clusters 7 (building trades) and 9 (service-maintenance) for each student was identified from the MIQ computer output sheet and placed in the categories satisfied, likely satisfied, and not satisfied; (4) clusters 7 (building trades) and 9 (service-maintenance) were recorded separately, as the students could be pursuing occupations in either cluster; (5) the number of students whose D-squared index score for cluster 7 (building trades) was in the satisfied category was totaled, the number of students whose score for cluster 7 (building trades) was in the likely satisfied category was totaled, and the number whose score for cluster 7 (building trades) was in the not satisfied category was totaled; (6) to obtain the percentages, the total number of students in each school was divided into the total in each satisfaction category; (7) steps 5 and 6 were repeated for cluster 9 (service-maintenance); and (8) the results were recorded in table form.

The urban student sample was analyzed by the following steps: (1) the questionnaires were grouped by schools; (2) the number of students from each high school was totaled; (3) within each urban high school, the questionnaires were grouped by the vocational cluster for which the students were being trained; (4) the D-squared index score for these was identified from the MIQ computer output sheet and placed in the categories satisfied, likely satisfied, and not satisfied; (5) the number of students in each category was totaled; (6) to obtain the percentages, the total number of students in each school was divided into the total in each satisfaction category; and (7) the results were recorded in table form.

Summary

The study was conducted in the state of Utah involving rural and urban industrial vocational high school students. The rural students were those participating in the Small Schools Integrated Shop Program which was under the direction of the State Board of Education. The urban students were from the Salt Lake City-Ogden area and were preparing for vocations in industrial areas.

One questionnaire, the Minnesota Importance Questionnaire (MIQ) was administered to both rural and urban high school students. The MIQ, which was developed at the University of Minnesota, was selected because of its ability to measure vocational needs. The MIQ responses represented a part of the student's work personality.

In the procedure of analysis, the vocational needs considered most important to the entire population and to each individual school were determined. The students' t-ratio two-case sample was used to determine if a difference of means existed between the rural and urban schools. The F-distribution was used to determine the homogeneity of variance among the rural and urban high schools.

The Occupational Reinforcer Patterns (ORPs), which were also developed at the University of Minnesota, represents the work environment as seen by supervisors in 81 occupations. The students' MIQ profiles were compared to the supervisors' profiles to determine the percentage of students preparing for occupations which would meet their vocational needs and the percentage of students who would find job satisfaction.

CHAPTER IV

FINDINGS

Introduction

The findings of this study, which centered around the responses of high school students, were limited to the accuracy of scoring and analysis of the questionnaires. The results of five objectives were sought: (1) to determine the ranking of the vocational needs, from most important to least important, by the entire student population; (2) to determine the ranking of the vocational needs, from most important to least important, for the composite rural and composite urban high schools; (3) to determine if there were a difference between the vocational needs of the composite rural and the composite urban high schools; (4) to determine if students were preparing for occupations which were similar to their vocational needs; and (5) to determine the percentages of students for which the MIQ responses indicated would be satisfied, likely satisfied, and not satisfied in their occupations. In each of the above cases, the objectives were analyzed as prescribed in Chapter III in those combinations deemed necessary to give an accurate account of the findings.

Subjects in the Study

The high school students in the study were comprised of ninth and tenth graders from seven rural schools and eleventh and twelfth graders from three urban schools in the state of Utah.

If the results of the questionnaires were to be meaningful, the validity of the students' responses had to be determined. The internal consistency of each student's profile was determined by the Total Circular Triads (TCT). The TCT indicated the consistency of the individual's responses to the 210 questions on the MIQ; and the higher the TCT score, the greater the inconsistency of the individual's responses. If the TCT score were 255 or greater, the questionnaire was considered invalid due to any one of the three following reasons: (1) random responses due to poor motivation, carelessness, faking, patterned response, and lack of understanding; (2) non-random responses due to difficulty in interpreting some of the variables; and (3) incomplete questionnaire.

Table 1 gives the total number of students responding to the questionnaire, as well as the results of those declared valid and invalid.

Results

The first objective was to determine the rank order of the vocational needs, from most important to least important, by the entire sample population. As shown in Figure 2, none of the needs were ranked high in importance by the combined school groups. Seven needs were ranked moderate in importance, the four most important being: advancement, having a scale value of 1.40; security, 1.37; ability utilization, 1.37; and achievement, 1.33. Two vocational needs, independence and social status, were ranked low in importance with scale values of .24 and .12, respectively. Authority was ranked the lowest by the students, with a scale value of -.04.

Figure 2 also shows the vocational needs for the rural and urban students and their relationship to the composite student sample. The urban students showed a high need for advancement, with a scale value

Table 1. Number of responses, valid and invalid, for the rural and urban samples

High schools	Number of responses				
	Total	Valid	Invalid		
			Random	Non-random	Inc.
Rural schools					
A	20	14	2	3	1
B	41	26	11	4	0
C	18	15	2	1	0
D	25	24	1	0	0
E	32	26	5	1	0
F	31	25	0	6	0
G	24	21	1	2	0
Total	191	151	22	17	1
Urban schools					
X	29	20	7	2	0
Y	47	32	8	7	0
Z	41	39	1	0	1
Total	117	91	16	9	1

1.60. Although the two groups did not rank the first seven needs the same, they were considered moderately important to both groups. In six of the first seven needs, the urban students had a higher need drive than did the rural students. Authority and social status were ranked least important by both student groups, with the rural students giving authority a -.11 scale value. The ranking of moral values revealed a significant mean difference of .45 between the rural and urban students. Other significant mean differences between the groups were found in the ranking of co-workers (.32), advancement (.28), and authority (.24).

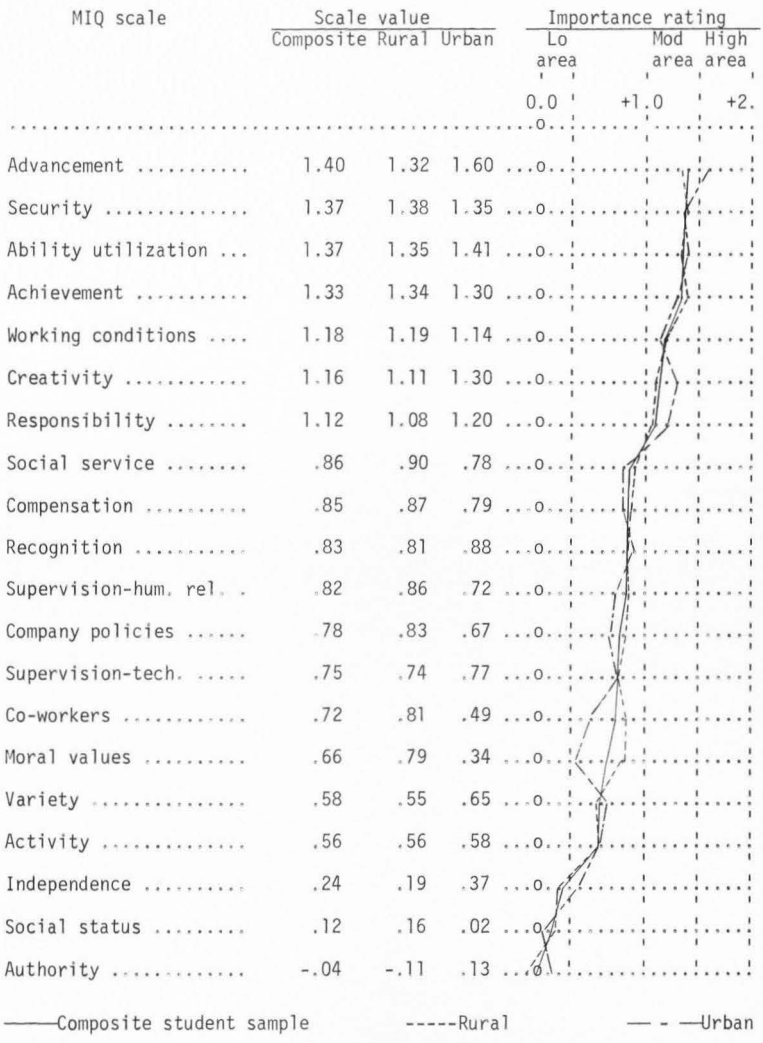

Figure 2. Rank order and scale value of vocational needs, from most important to least important, by the entire student sample and the comparison with the rural and urban student samples.

In other studies which identified the factors influencing job preference, Jurgenson (1947) found security and achievement received the highest ranking by mechanical workers, while sales and clerical workers ranked advancement and security high. A study by Lindahl (1949) revealed that factory workers also ranked security high in importance.

Although the Minnesota Importance Questionnaire (MIQ) and the other studies used different questions and had different objectives for their questions, the results did reveal that security, advancement, and achievement were important to more than one group of individuals.

In objective two, the rank order of importance of the vocational needs, from most to least, for each individual school was sought. Table 2 shows the relationships of the ranking of the vocational needs according to the responses of students in the rural high schools, and Table 3 shows the relationships of the ranking for the urban high schools. In both tables, the number placed by each vocational need indicates its ranked position of importance by the students in that school.

Among the rural schools, security, ability utilization, achievement, and advancement were the first four needs ranked in order of importance. These needs were ranked in the top five by all of the seven rural schools. Although security was ranked most important as a need, only three schools ranked it first. Despite the fact that these needs were ranked the top four in importance, they were only considered moderately important on the scale value. On the opposite end of the scale, independence, social status, and authority were ranked 18, 19,

Table 2. Rank order of vocational needs as indicated by the individual rural high schools

MIQ scales	A	B	C	D	E	F	G
Ability utilization	1.0	3.0	3.0	4.0	3.0	3.0	3.0
Achievement	2.0	1.0	4.0	5.0	1.0	4.0	5.0
Activity	13.0	17.0	13.0	16.0	17.0	16.0	17.0
Advancement	3.0	2.0	2.0	1.0	5.5	5.0	2.0
Authority	19.0	20.0	20.0	20.0	20.0	20.0	20.0
Company policies	11.0	13.5	11.0	11.0	10.0	14.0	10.0
Compensation	10.0	11.0	12.0	14.0	9.0	11.0	8.5
Co-workers	14.0	12.0	16.0	12.0	11.0	8.0	13.0
Creativity	8.0	5.0	7.5	7.0	4.0	7.0	7.0
Independence	17.0	19.0	18.0	19.0	18.0	18.0	19.0
Moral values	18.0	8.0	17.0	9.0	15.0	9.0	16.0
Recognition	6.0	9.0	10.0	15.0	12.0	13.0	14.0
Responsibility	9.0	7.0	9.0	6.0	7.5	6.0	4.0
Security	4.5	4.0	1.0	3.0	2.0	1.0	1.0
Social service	7.0	10.0	14.0	8.0	7.5	10.0	12.0
Social status	20.0	18.0	19.0	17.5	19.0	19.0	18.0
Supervision--human rel.	12.0	13.5	5.0	10.0	16.0	12.0	8.5
Supervision--technical	16.0	16.0	6.0	13.0	14.0	15.0	11.0
Variety	15.0	15.0	15.0	17.5	13.0	17.0	15.0
Working conditions	4.5	6.0	7.5	2.0	5.5	2.0	6.0

Table 3. Rank order of vocational needs as indicated by the individual urban high schools

MIQ scales	X	Y	Z
Ability utilization	2.0	3.0	2.0
Achievement	3.5	4.0	4.0
Activity	9.0	14.0	17.0
Advancement	3.5	1.0	1.0
Authority	19.0	19.0	19.0
Company policies	15.0	15.0	10.0
Compensation	8.0	9.0	12.0
Co-workers	16.0	16.0	14.0
Creativity	5.0	5.0	3.0
Independence	11.0	17.0	18.0
Moral values	17.0	18.0	16.0
Recognition	10.0	11.5	9.0
Responsibility	7.0	8.0	5.0
Security	1.0	2.0	6.0
Social service	18.0	13.0	7.5
Social status	20.0	20.0	20.0
Supervision--human relations	14.0	10.0	11.0
Supervision--technical	13.0	7.0	13.0
Variety	12.0	11.5	15.0
Working conditions	6.0	6.0	7.5

and 20, respectively. Six of the seven schools ranked authority as being the least important need.

In the urban schools, advancement, ability utilization, security, and creativity were the first four needs ranked in order of importance. These needs were ranked in the top five by all three urban schools. Advancement was ranked most important by the urban students, with two of the schools placing it first. On the scale value, advancement was valued high in importance. Social services and authority were unanimously ranked 18 and 19, respectively.

The third objective posed the question: Is there a significant difference between the composite responses of the rural students and the composite responses of the urban students? In the analysis of the schools, two considerations were given: (1) the difference between the composite means of the rural and urban high schools, and (2) the homogeneity of the two groups. To determine if a difference between the two composite profiles existed, the Student's t-ratio two-case sample at the 5 percent level of confidence was employed. To establish whether the two school groups were homogeneous, the F-distribution was employed. Table 4 shows the calculated results of the Student's t-ratio and the F-distribution for the composite 20 need scales. No significant difference between the composite rural and composite urban groups was found by either statistical treatment when the questionnaires were analyzed.

Table 5 shows the results of the analysis of each of the 20 need scales when the Student's t-ratio and F-distribution were applied. In the test for the difference between means, the rural and urban groups differed significantly on four of the need scales. Moral values

Table 4. Comparison of means and test for homogeneity of the combined 20 needs between the composite rural and composite urban high schools using the Student's t-ratio and F-distribution

Statistical test	Rural mean	Urban mean	t-value	F-ratio	Critical value	Decision*
Student's t	0.83	0.84	0.11	----	1.96	No dif.
F-distribution	----	----	----	1.01	1.37	Homog.

*Significant at 5 percent level.

created the greatest disagreement, receiving a more important rating by rural students. Co-workers showed the second greatest disagreement, again being rated more important by the rural students. Advancement and authority ranked third and fourth in disagreement, but these were considered more important by the urban students. In the test for homogeneity, no significant difference was found between the groups on any of the need scales.

Figure 3 shows a numerical and graphical representation of the differences between the means of the needs of the composite rural and composite urban students. Advancement was the only need to receive the high level of importance rating.

For objective 4, the percentage of the rural and urban students preparing for occupations similar to their first options of vocational needs cluster was determined. The rural students were training in a broad industrial-agricultural program which included occupations found in cluster 7 (building trades) and cluster 9 (service-maintenance). For the purpose of this study, therefore, the results were analyzed with the assumption that the rural students would continue their

Table 5. Comparison of means and test for homogeneity for each of the 20 vocational needs between the composite rural and composite urban high schools using the Student's t-ratio and F-distribution

MIQ scales	Rural mean	Urban mean	Statistical test t-value	Statistical test F-ratio	Critical value	Decision
Ability util.	1.35	1.42	-0.65	----	1.96	No dif.
			----	1.00	1.37	Homog.
Achievement	1.34	1.30	0.44	----	1.96	No dif.
			----	1.21	1.37	Homog.
Activity	.56	.58	-1.41	----	1.96	No dif.
			----	1.15	1.37	Homog.
Advancement	1.32	1.60	-2.69	----	1.96	Dif.*
			----	1.20	1.37	Homog.
Authority	-.11	.13	5.30	----	1.96	Dif.*
			----	0.12	1.35	Homog.
Company policies	.83	.67	1.59	----	1.96	No dif.
			----	1.34	1.37	Homog.
Compensation	.87	.79	0.67	----	1.96	No dif.
			----	1.23	1.35	Homog.
Co-workers	.81	.49	3.02	----	1.96	Dif.*
			----	1.20	1.37	Homog.
Creativity	1.11	1.30	-1.72	----	1.96	No dif.
			----	1.22	1.35	Homog.
Independence	.19	.37	-1.91	----	1.96	No dif.
			----	1.17	1.35	Homog.
Moral values	.79	.34	3.47	----	1.96	Dif.*
			----	1.21	1.37	Homog.
Recognition	.81	.88	-0.61	----	1.96	No dif.
			----	1.13	1.37	Homog.
Responsibility	1.08	1.20	-1.06	----	1.96	No dif.
			----	1.07	1.35	Homog.
Security	1.38	1.35	0.23	----	1.96	No dif.
			----	1.06	1.37	Homog.

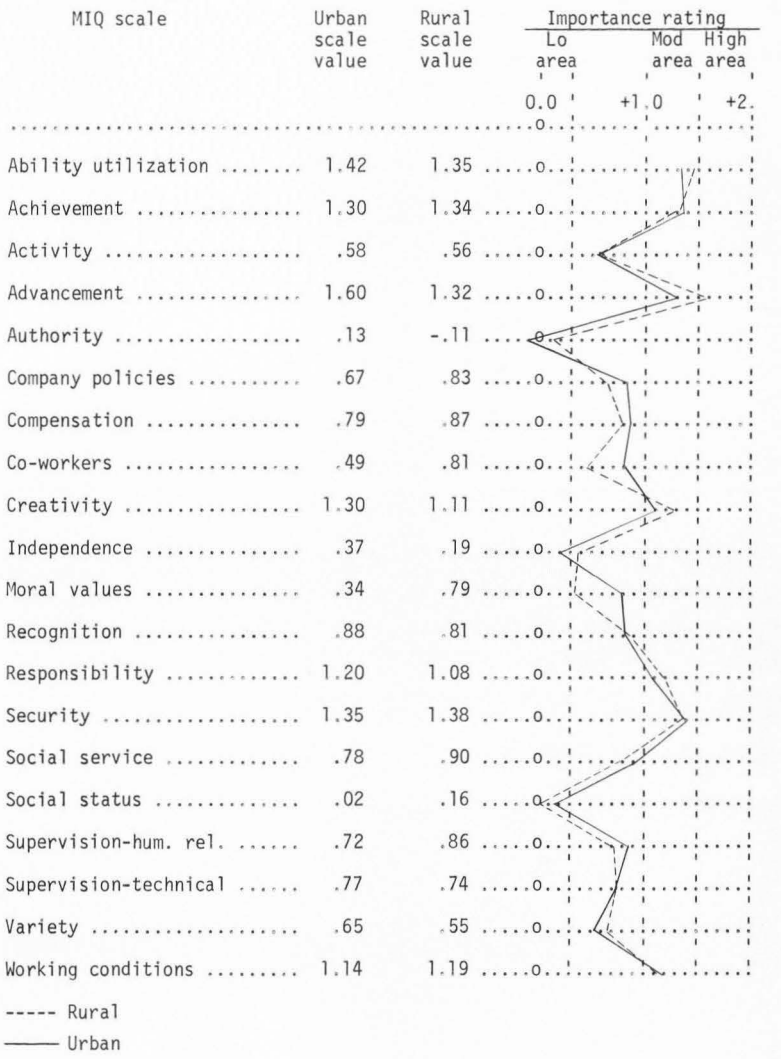

Figure 3. A comparison of the scale values of the vocational needs between the composite rural schools and the composite urban schools.

Table 6. Percentage of rural and urban students by school and totals preparing for occupations which correspond to their first, second, and third options of vocational needs clusters

High schools	Percentage		
	1st option	2nd option	3rd option
Rural schools			
In cluster 7			
A	28.6	7.1	21.4
B	7.7	15.4	15.4
C	0.0	33.3	6.6
D	0.0	8.3	0.0
E	8.0	8.0	16.0
F	3.8	7.7	15.4
G	4.8	9.5	9.5
Total	6.6	11.9	11.9
In cluster 9			
A	0.0	14.3	14.3
B	3.8	11.5	11.5
C	20.0	20.0	26.6
D	12.5	8.3	16.7
E	20.0	12.0	24.0
F	7.7	15.4	38.4
G	23.8	23.8	14.2
Total	12.5	14.6	21.2
Urban schools			
X	9.2	27.3	36.4
Y	9.1	18.2	22.7
Z	10.7	7.1	21.4
Total	9.8	14.8	24.6

When all three options were analyzed, the rural students favored cluster 9 (service-maintenance) over cluster 7 (building trades). Although the percentage in the first option was small, approximately one-half of the rural students' occupational needs preferences fell in one of the first three options.

Although the urban students were preparing for definite occupations, their percentages for the first three options were similar to those of the rural students. Approximately one-half of their occupational needs preferences also fell in one of the first three options.

The purpose of objective 5 was to determine what percentage of the rural and urban students were preparing for occupations in which they would be satisfied. This satisfaction was determined through the responses of the students to the MIQ. The lower the vocational needs of an individual, the greater the probability of his finding job satisfaction. In order to be not satisfied in any occupation, the individual usually would have extremely high vocational needs.

Table 7 shows the percentage of students for which the MIQ responses indicated they would be satisfied, likely satisfied, and not satisfied in the occupations for which they were preparing. Eighty to 85 percent of the students from the rural schools would be either satisfied or likely satisfied in an occupation in cluster 7 (building trades) or cluster 9 (service-maintenance) with 65 to 80 percent of the students being likely satisfied in those clusters. Schools A, B, C, and D showed a high percentage of students who would not be satisfied in occupations in either cluster 7 (building trades) or 9 (service-maintenance).

Table 7. Percentage of rural and urban students by school and totals who would be satisfied, likely satisfied, and not satisfied in their occupations as based on responses of the MIQ

High schools	Percentages		
	Satisfied	Likely Satisfied	Not satisfied
Rural schools			
In cluster 7			
A	21.4	57.2	21.4
B	11.5	65.4	23.1
C	6.6	66.7	26.7
D	4.2	70.8	25.0
E	16.0	80.0	4.0
F	11.5	84.6	3.9
G	14.3	76.2	9.5
Total	11.9	72.9	15.2
In cluster 9			
A	21.4	57.2	21.4
B	19.2	61.6	19.2
C	6.6	80.0	13.4
D	12.5	62.5	25.0
E	28.0	68.0	4.0
F	23.1	73.1	33.8
G	33.3	56.2	9.5
Total	21.2	65.6	13.2
Urban schools			
X	18.20	63.40	18.20
Y	27.30	63.60	9.10
Z	21.40	60.70	17.90
Total	22.95	62.30	14.75

Of the urban schools, school Y showed a high percentage (90.9) of students who would be satisfied or likely satisfied in the occupations for which they were training. When all of the urban schools were considered, 85.25 percent of the students would be satisfied or likely satisfied with their chosen occupations.

Even though the urban students had narrowed their vocational choices, the results indicated that the percentage of urban students that would be satisfied or likely satisfied was almost the same as those students in the rural schools. Of the urban students, 85.25 percent would be satisfied or likely satisfied in the occupations of their choice. Of the rural students, 86.8 percent would be satisfied or likely satisfied in cluster 9 (service-maintenance) and 84.8 percent would be satisfied or likely satisfied in cluster 7 (building trades).

Other Findings

As the research progressed, other findings supplementing the study were revealed: (1) how did the composite students' profile compare to the profile of the supervisors in cluster 7 (building trades)?; (2) how did the composite students' profile compare to the profile of the supervisors in cluster 9 (service-maintenance)?; (3) how did the profiles of the rural and urban students compare to the profiles of clusters 7 (building trades) and 9 (service-maintenance)?; and (4) which clusters, as identified by the MIQ, were preferred by the students?

Figure 4 shows the comparison of vocational needs of the entire student sample to those needs valued necessary by supervisors in cluster 7 (building trades). Fourteen of the needs were valued more

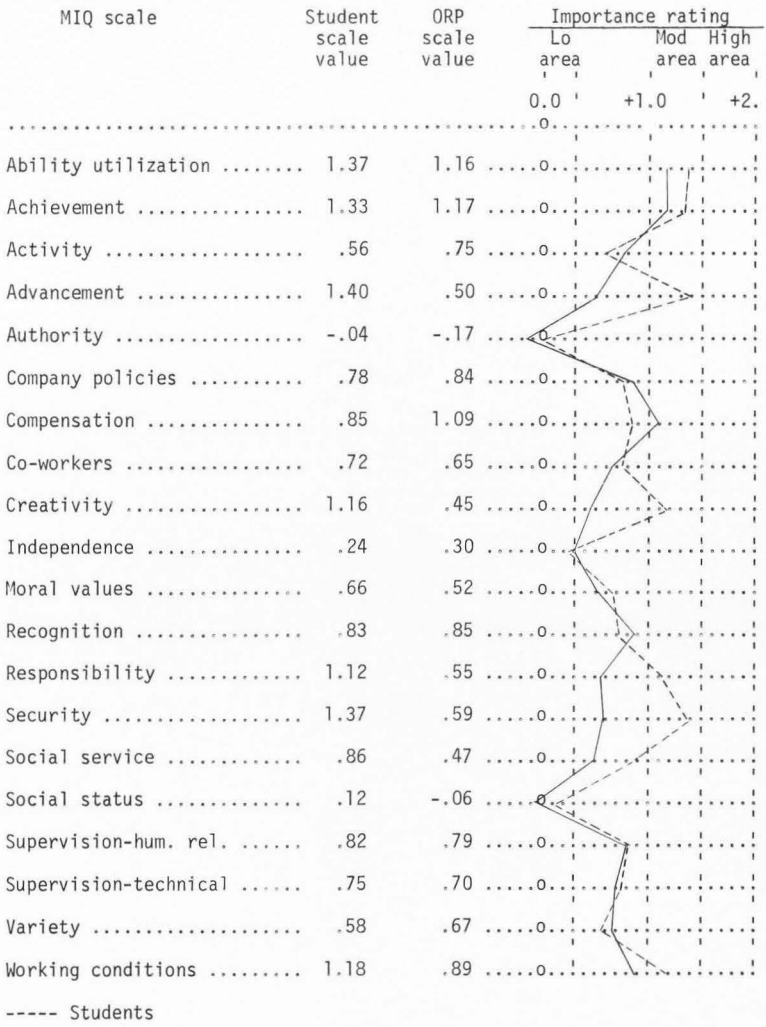

Figure 4. A comparison of the scale values of the vocational needs between the entire student sample and the supervisors of cluster 7.

important by the students than by the supervisors. Noticeable differences were observed between the students' vocational needs and the supervisors' expressed needs for advancement, creativity, responsibility, security, and social service. In each case, the students expressed higher vocational needs than did the supervisors, which indicated complete job satisfaction would be difficult to obtain by the students.

Figure 5 shows the relationship of student vocational needs and the needs expressed by supervisors in cluster 9 (service-maintenance). Again, 14 of the 20 needs were ranked more important by the students than by the supervisors. The greatest differences were observed between advancement, creativity, and independence. However, the students' vocational needs were more in agreement with those of the supervisors in cluster 9 (service-maintenance) than with those in cluster 7 (building trades). Even though the students were in closer agreement with the supervisors in cluster 9 (service-maintenance), there still remained disagreement concerning advancement.

Figure 6 shows the relationship of the composite rural and composite urban students to the supervisors in cluster 7 (building trades), while Figure 7 shows the relationship of the composite rural and composite urban students to supervisors in cluster 9 (service-maintenance).

Figure 8 shows the percentage of rural students that preferred each of the nine clusters as their first, second, and third options. For their first option, the composite rural sample showed a percentage preference of 17.2 for cluster 3 (sales occupations, service). Ranking second and third, with percentages of 13.9, were clusters 1 (professional) and 2 (semi-professional). Cluster 9 (service-maintenance)

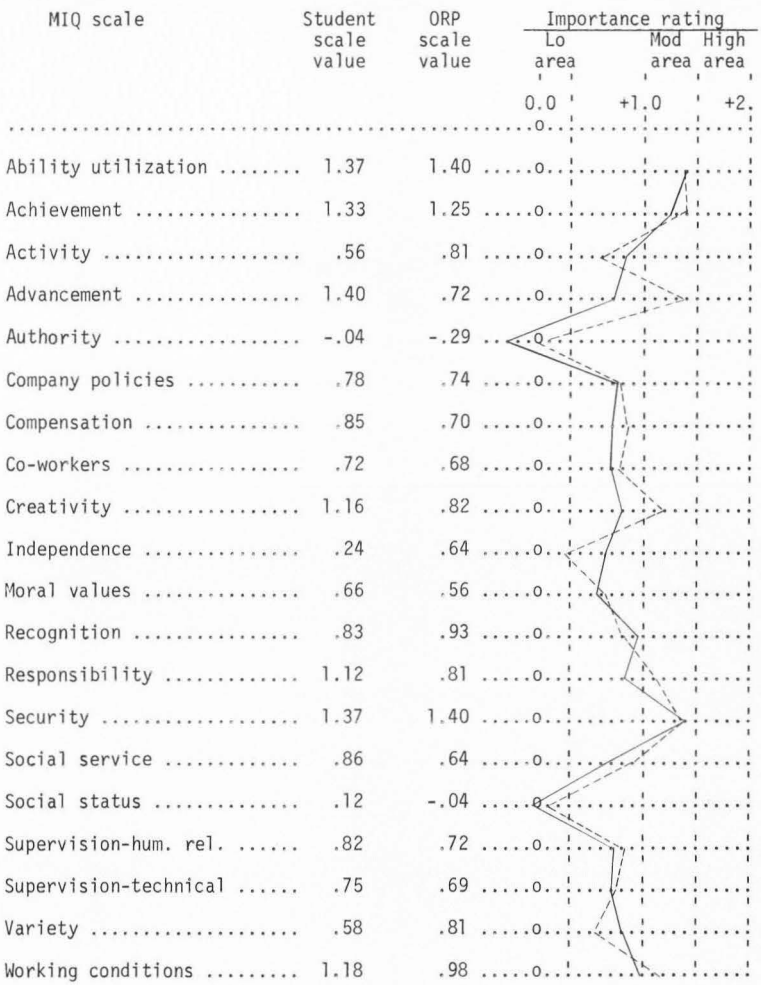

Figure 5. A comparison of the scale values of the vocational needs between the entire student sample and the supervisors of cluster 9.

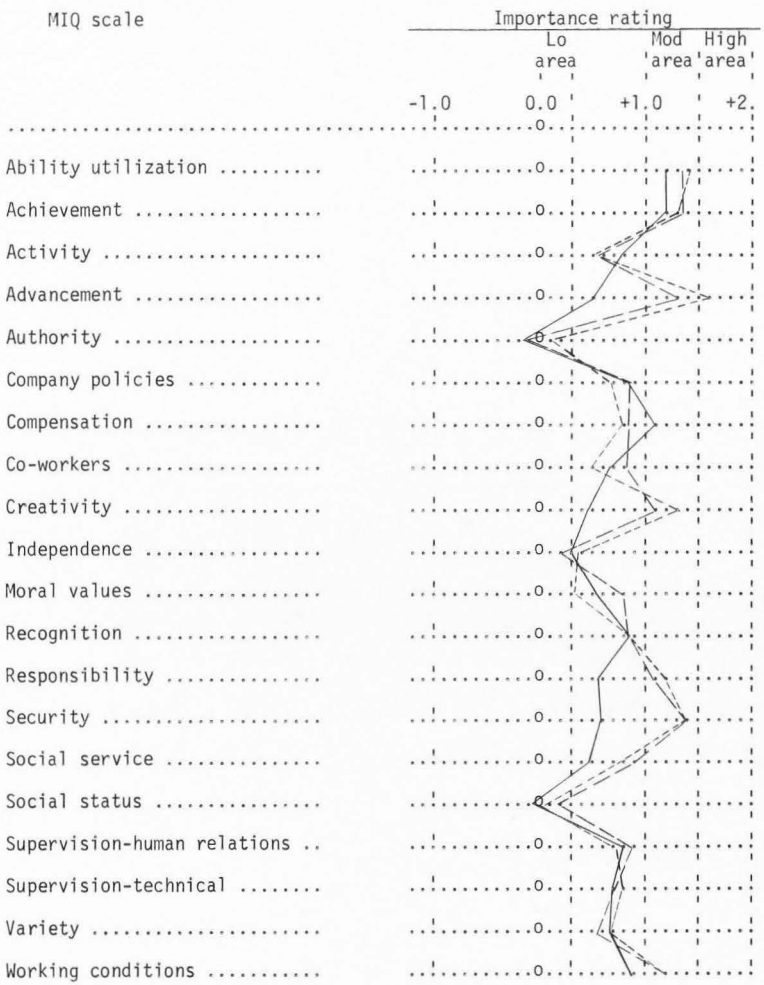

Figure 6. A comparison of the scale values of the vocational needs between the composite rural and urban students and the supervisors of cluster 7.

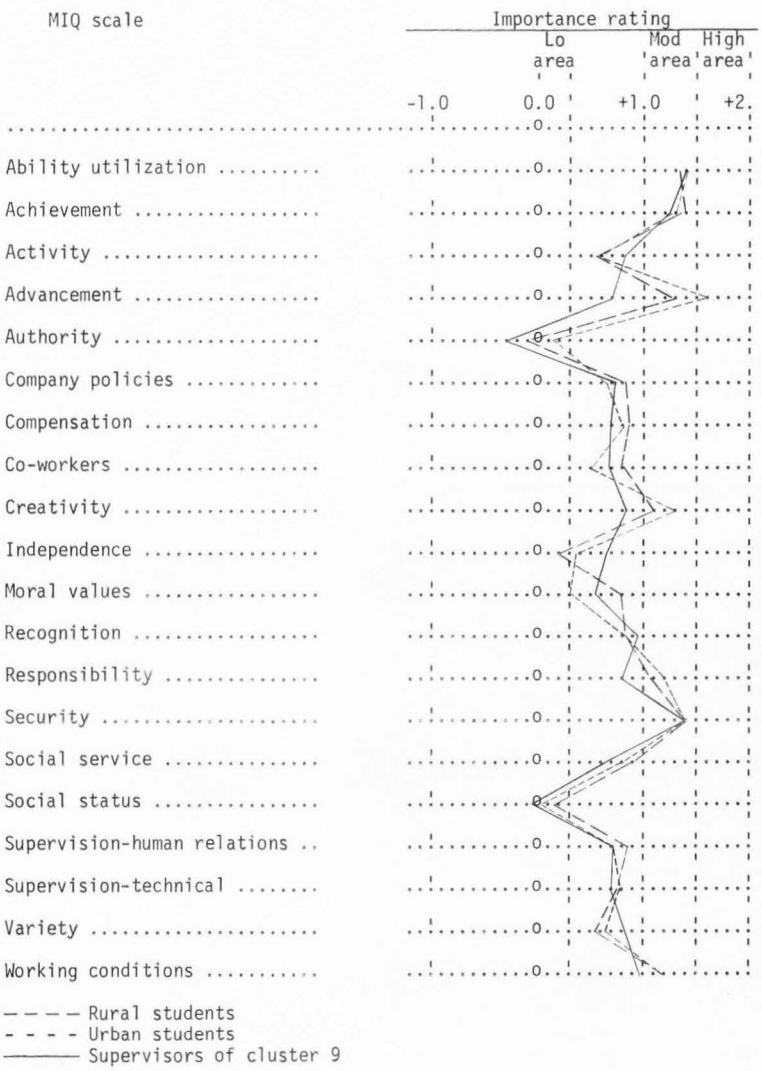

Figure 7. A comparison of the scale values of the vocational needs between the composite rural and urban students and the supervisors of cluster 9.

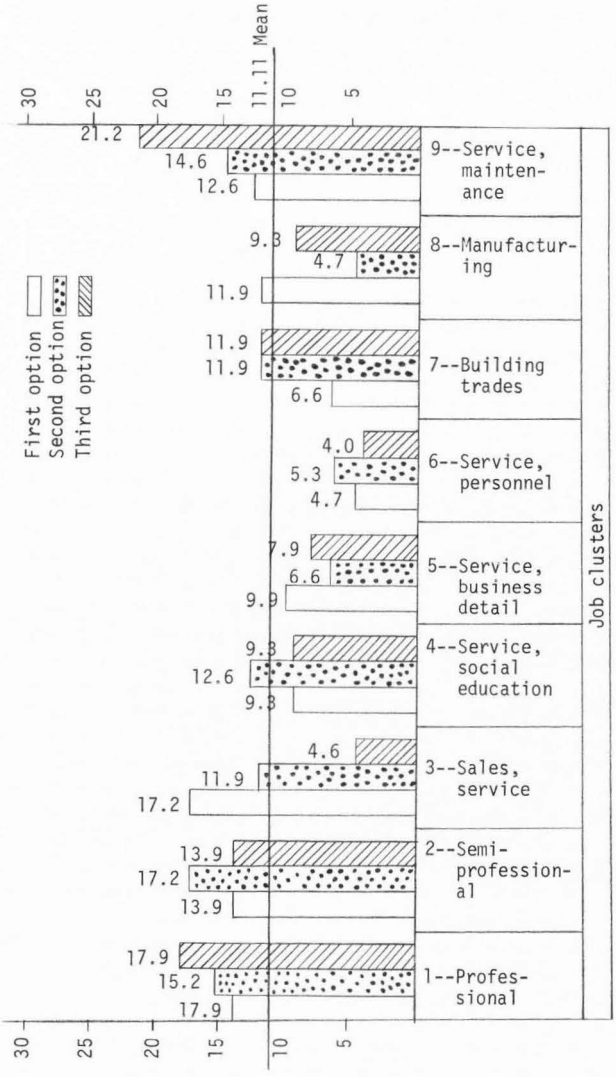

Figure 8. Percentage of rural students who preferred each of the nine clusters as their first, second, and third options.

was fourth, with a percentage of 12.6; while cluster 7 (building trades) was the eighth preference, with a percentage of 6.6, which was below the mean. For the first option, three other clusters--4 (service, social-education), 5 (service, business detail), and 6 (service, personal)--also fell below the mean.

For the second option, cluster 2 (semi-professional), cluster 1 (professional), and cluster 3 (sales, service) were still high in percentage and ranked in that order. The third option revealed cluster 9 (service-maintenance) high with a percentage of 21.2; and clusters 1 (professional), 2 (semi-professional), and 7 (building trades) following closely with high percentages of 17.9, 13.9, and 11.9, respectively.

When the percentages for options one, two, and three were averaged, cluster 9 (service-maintenance) was first with an average of 15.8 percent, cluster 1 (professional) second with 15.66 percent, cluster 2 (semi-professional) third with 15 percent, and cluster 3 (service) fourth with 11 percent.

Figure 9 shows the percentage of urban students preferring each of the nine clusters as their first, second, and third options. The urban students' first option showed a percentage of 29.6 for cluster 2 (semi-professional), which ranked first; and cluster 1 (professional) ranked second, with 26.2 percent. It was not until the third option that cluster 9 (service-maintenance) received a high percentage of 26.2.

When the first, second, and third options were reviewed and averaged, cluster 2 (semi-professional) was first with a percentage of 22.46, followed by cluster 1 (professional) with 21.86 percent and cluster 9 (service-maintenance) with 15.80 percent.

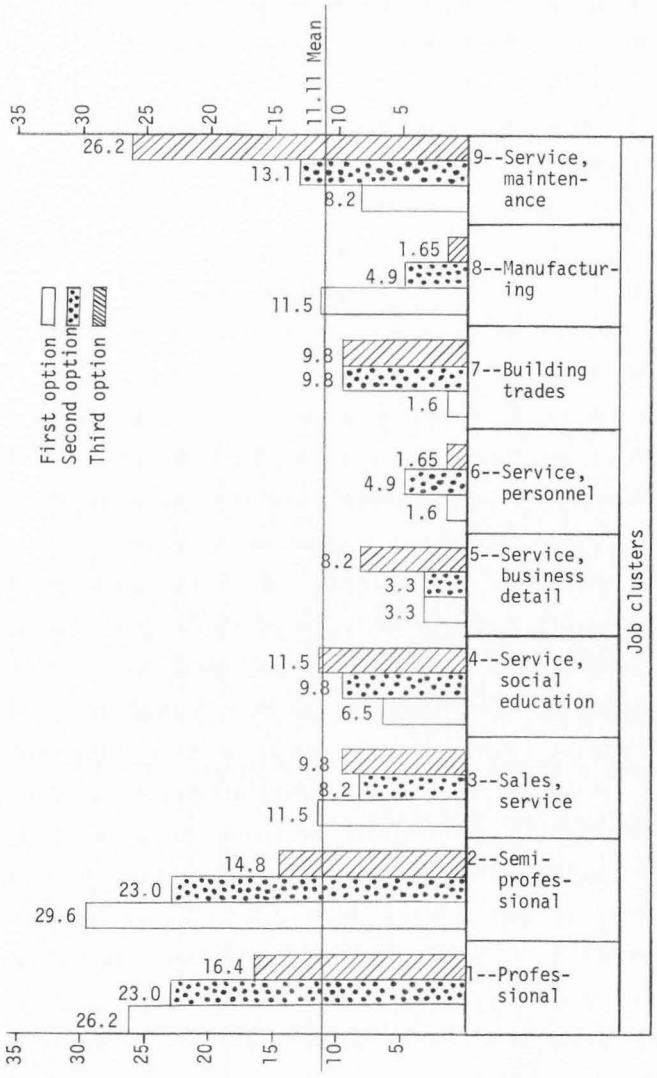

Figure 9. Percentage of urban students who preferred each of the nine clusters as their first, second, and third options.

The occupations for which the urban students were preparing fell in cluster 9 (service-maintenance); yet, the percentage for this cluster on the first option was 8.2, which fell below the mean of 11.1. Although these students were preparing for their chosen occupations, their needs could be better fulfilled by four other occupational clusters, according to the results of their first choice percentages.

When the urban students were compared with the rural options, the urban students' desire for occupational clusters 1 (professional) and 2 (semi-professional) was 14 percent greater than the rural students' percentages. The results of this study suggested that the students possessed vocational needs which could not be met by their occupational options.

In a study of junior college problems in Utah (Mortimer, 1966), 49.7 percent of the males in the study selected professional occupations as their job choice. Although this part of that study was asking for job preference, and the Minnesota Importance Questionnaire (MIQ) was seeking vocational needs found in occupations, the selections and needs were similar. Unfortunately, only a small percentage of the students would actually acquire jobs in the professional occupations; therefore, job dissatisfaction would likely occur.

Summary

The student sample was comprised of 151 rural students in the ninth and tenth grades and 91 urban students from the eleventh and twelfth grades in the state of Utah. The students' responses from the MIQ were tabulated in order to obtain answers to the objectives of the study.

To the entire student sample, advancement, security, and ability utilization were considered most important to the student; while independence, social status, and authority were considered least important. To the rural students, security, ability utilization, and achievement were most important; and advancement, ability utilization, and security were considered most important to the urban students.

No significant difference was found between the composite vocational needs of the rural and the urban students. However, when each vocational need was analyzed, the two groups did not agree upon the importance of advancement, authority, co-workers, and moral values.

A small percentage of the students was actually preparing for occupations which corresponded to their selected vocational job cluster. One of the primary functions of the MIQ was to predict job success. From the findings, about 20 percent would find job satisfaction, 65 percent would likely find job satisfaction, and 15 percent would not find job satisfaction.

The vocational needs of both rural and urban students would be better met by occupations in cluster 1 (professional) and 2 (semi-professional). Not until the third option did cluster 9 (service-maintenance) become popular.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The summary includes an introduction to the problem, the purpose of the study, the limitations of the study, a synopsis of the literature reviewed, the procedures used in the study, the results determined from the study, implications, and recommendations.

Introduction

For many years, educational systems have been concerned about the cognitive, affective, and psychomotor domains. In industrial education, the development of motor skills, and acquisition of knowledge, and the development of desirable personal-social traits are considered equal in importance. Despite these concerns, however, many workers still do not find job satisfaction. As indicated in various studies, employees will more likely lose their jobs because they are unable to adjust to their work situation, rather than from a lack of job skills.

If vocational satisfaction is to take place, the individual must realize his abilities and needs and must search for occupations in which these will be fulfilled. The theoretical model, upon which the theory of work adjustment is based, is the identification of the individual's work personality which is matched with a similar work environment. The work personality is made up of the individual's abilities and his vocational needs. In the work environment, the

ability requirements of the job and the reinforcers from the work situation are two important factors. The closer the individual's work personality can be matched to a similar work environment, the greater will be his job satisfaction.

Purpose of the study

The purpose of this study was to investigate, compare, and analyze the personal-social needs of selected rural and urban vocational education high school students. Answers to the following questions were sought:

1. What is the rank order of importance, from most to least, of the 20 needs identified by the MIQ and expressed by the entire population?

2. What is the rank order of importance, from most to least, of the 20 needs identified by the MIQ and expressed by each individual school?

3. Is there a significant difference between the composite profiles of the students in the rural high schools and the composite profiles of the students in the urban high schools?

4. What percentage of the students in each high school is presently preparing for occupations in the ORP cluster which is identical to their MIQ profile?

5. What percentage of the students in each high school is preparing for occupations in which they will be satisfied, likely satisfied, and not satisfied as identified by the MIQ?

Limitations of the study

To measure predicted job satisfaction and vocational needs, the theory of work adjustment employed the questionnaire technique. The MIQ was the instrument devised through the theory of work adjustment project at the University of Minnesota. In this study, the MIQ was administered to each student in the population.

The student population was comprised of ninth, tenth, eleventh, and twelfth graders participating in vocational programs. The students represented both rural and urban high schools.

The rural high school student population was limited to those high schools participating in the Small Schools Integrated Shop Program in the state of Utah. The Integrated Shop Program was an educational program designed to combine industrial and agricultural learning experiences to provide a more complete educational program; while the urban high school student population was limited to three high schools in the Salt Lake City area.

Review of literature

For many years, attempts at vocational counseling have been made. Most of the research on vocational counseling indicated that those being counseled came closer to finding satisfaction in their work than did those without counseling. It has also been determined that those receiving counseling made a higher proportion of realistic vocational choices, received higher pay, and had more continuous employment.

Three major theories of vocational guidance were identified through the review of literature: the trait-factor theory, the patterns theory, and the work motivational theory.

The development of intelligence testing in the early 1900's brought a completely new outlook to vocational guidance. This concept was developed in the trait-factor theory, which advocated that occupations have different requirements and that individuals working in these occupations possess traits which match the occupations. To make the theory workable, it was necessary to determine the characteristics of individuals in differing occupations. An individual was then matched to a work position which had similar traits. Some examples of matching were accomplished through the use of intelligence testing, aptitude testing, mechanical ability testing, manipulative testing, and personality testing.

In the early stages of vocational guidance, those years preceding World War I, the primary concern was for building tests which would measure specific psychological variables (Bailey, 1968). After World War I, however, the primary goal of test makers became the constructing of tests for predictive value.

The theory of work adjustment applied the trait-factor theory to determine job satisfaction. The work adjustment project identified vocational needs which are characteristic of 81 different occupations. Through the use of the MIQ, the vocational needs of individuals can be identified and matched with similar occupations.

After World War II, the patterns theory was introduced. Those responsible for the development of this theory believed that people go through developmental stages at similar ages, and vocational development fits into this same pattern.

One of the best known patterns theories dealt with life stages. Super (1957), a noted person in the area of vocational development,

identified five stages: (1) growth, birth to 14 years; (2) exploration, 15 to 24 years; (3) establishment, 25 to 44 years; (4) maintenance, 45 to 64 years; and (5) decline, 65 years and older.

Motivational theory was primarily concerned with the reasons why people worked and the meaning of satisfaction. The review of literature revealed that people work for many different reasons, and that work means different things to different people.

Satisfaction and satisfactoriness referred to work adjustment; satisfaction was viewed from the worker's point of view, while satisfactoriness was from the employer's viewpoint.

Procedure

After the problem had been identified, the review of literature and the investigation of measuring instruments revealed that the MIQ possessed adequate measuring properties. When the rural and urban high schools were identified and permission was granted to use the students in the research study, the researcher personally administered the questionnaire to the students.

Due to the complexity of scoring the MIQ, and under the advisement of the University of Minnesota research director, the completed questionnaires were scored by computer on the University of Minnesota campus. The findings and analyses were completed as prescribed by the objectives of the study.

Findings

The objectives of this study were to answer five questions through the utilization of the MIQ.

Objective 1. When the rank order of importance of 20 vocational needs for the entire student sample was inspected, advancement was the highest ranked need and authority was the lowest. None of the needs were ranked high in importance on the scale of values by the entire student group; however, seven needs were found to be moderately important, two needs were ranked low in importance, and one was ranked very low. Advancement was ranked first with a scale value of 1.40, security was next with a value of 1.37, followed closely by ability utilization at 1.37 and achievement at 1.33. Two vocational needs, independence and social status, were ranked low in importance with scale values of .24 and .12, respectively. Authority was ranked the lowest by all of the students, with a scale value of -.04. In six out of the seven needs, the urban students had higher need drives than did the rural students.

Objective 2. The rank order of importance of vocational needs by the rural schools was similar, and this was also true of the urban schools. Although some fluctuation of rank order did occur, the majority of the schools were in agreement.

Objective 3. No significant difference was found between the mean of the composite rural and the mean of the composite urban MIQ profiles. The two groups were also found to be homogeneous.

When each MIQ scale was analyzed separately, a difference between the means was found on four of the need scales. Authority created the greatest disagreement, receiving a more important rating by the urban students. Moral values were most important to rural students. Working with co-workers was more important to rural students, and advancement was more important to the urban students. In the test of homogeneity,

no significant difference was found between the groups on any of the need scales.

Objective 4. When the data of rural students were analyzed, 6.6 percent of them had on their first option vocational needs which could have been satisfied by occupations in cluster 7 (building trades); while 12.5 percent had vocational needs which could have been satisfied by occupations in cluster 9 (service-maintenance). Of the students in the urban schools, 9.9 percent were preparing for occupations similar to their vocational needs job cluster.

Even though the urban students were preparing for definite occupations, their percentages for the first three options were similar to those of the rural students. Although the percentages in the first option were low for both rural and urban students, almost 50 percent of the occupational preferences fell in one of the first three options.

Objective 5. For the composite rural students, the MIQ revealed that 11.9 percent would have been satisfied with an occupation in job cluster 7 (building trades), while 72.9 percent would have been likely satisfied with an occupation in cluster 7. In job cluster 9 (service-maintenance), 21.2 percent would have been satisfied, while 65 percent would have been likely satisfied.

In the urban schools, 22.95 percent of the students would have been satisfied with their chosen job cluster, while 62.30 percent would have been likely satisfied.

In either student group, 85 to 90 percent of the students could have been or could have found job satisfaction in the manual occupation areas. Even though the urban students had narrowed their vocational choices, the results indicated that the percentage of urban students

who would be satisfied or likely satisfied was almost the same as those students in the rural schools.

Other findings. During the research, other findings which supplemented the study were revealed. When a comparison of the needs valued more important by the entire student sample was made with responses of supervisors in cluster 7 (building trades), 14 of the 20 needs were found to be valued more important by the students. The students in both rural and urban groups agreed more closely with the vocational need values of supervisors in cluster 9 (service-maintenance) than with the supervisors in cluster 7 (building trades).

An analysis of the data indicated that the rural students had vocational needs which could have been fulfilled best through occupations in cluster 3 (sales, service); while clusters 1 (professional), 2 (semi-professional), and 9 (service-maintenance) ranked second, third, and fourth, respectively. The data also indicated that the urban students had vocational needs which would have been fulfilled best in clusters 2 (semi-professional) and 1 (professional), with clusters 3 (sales, service) and 8 (manufacturing) ranking third and fourth.

The data also support the finding that students wanted to work with other workers on the job; however, the other workers do not have to be close friends. Also, the students definitely did not want to tell others what to do. The supervisors wanted workers who would obey instructions and go ahead on their own to complete the task.

Conclusions

From the findings of objectives 1 and 2, the following conclusions were derived:

1. Although advancement, security, ability utilization, and achievement were valued moderate in scale value of importance, they were ranked higher than all the other needs and thus were of concern to the students.

2. Students wanted to work with other workers on the job; however, the other workers did not have to be close friends, and the students definitely did not want to tell others what to do.

3. Supervisors wanted workers who would obey instructions and go ahead on their own to complete the task.

4. It appeared that supervisors were not willing or able to give the opportunity for advancement, allow creativity, or delegate the responsibility of making decisions to the extent which would have allowed the students' needs to be fulfilled.

5. Although authority ranked low in importance by both rural and urban students, the students still possessed more desire for authority than what supervisors would have liked them to have.

From the findings of objective 3, the following conclusions were derived:

6. Although some differences occurred, the rural and urban students had similar vocational needs.

7. If objectives were written on the state level in the affective domain and with vocational needs in mind, it appeared that the objectives would have been functional for both rural and urban students.

From the findings of objective 4, the following conclusion was derived:

8. Students had greater vocational needs than the occupations for which they had been training appeared to have been able to provide.

From the findings of objective 5, the following conclusion was derived:

9. Due to the students' high vocational needs, it would have been difficult for many students to have found complete job satisfaction in occupations in clusters 7 (building trades) and 9 (service-maintenance).

From the other findings, the following conclusions were derived:

10. Since the vocational needs of both rural and urban students would have been better met by occupations in clusters 1 (professional) and 2 (semi-professional), the students' vocational needs were unrealistic.

11. Although both the rural and urban students were preparing for occupations which were in cluster 9 (service-maintenance), their vocational needs would have been better met by occupations in clusters 1 (professional) and 2 (semi-professional).

Discussion

The opinion of this researcher was that the MIQ proved to be an adequate instrument for measuring the vocational needs of the rural and urban industrial education students. From the various student responses to the MIQ, definite variations of scale values were revealed. As to the measurement of varying age groups, the researcher relied upon the MIQ's statistical treatment for stability and the life stages is exploration, which includes ages 14-24. The students in the study fell into this life stage and were therefore considered similar.

In predicting job satisfaction, this researcher believed that the MIQ could indicate to what degree a student would be likely to find job satisfaction. One reservation concerned the validity of the selection of job clusters as a practical determiner of the work environment. The reason for this concern was based on the fact that many of the students had vocational needs which expressed the professional and semi-professional occupational levels. This was unrealistic when one considered the small percentage of students which actually would enter these occupations.

For counseling purposes, the theory of work adjustment appeared to be sound. However, it was very difficult to establish a true reinforcer system. It was, therefore, the opinion of this researcher that the needs possessed by the student could not be adequately matched with occupational clusters because of the student's unrealistic desires.

The conclusions from this study posed a philosophical question. If satisfaction and satisfactoriness were to take place, should the worker be required to change his pattern of needs to match the work environment, or should the work environment be changed to match the worker's needs?

Educationally, the values of vocational needs become a two-fold problem: the preparing of the student toward the occupational reinforcer system and the informing of the employer about the needs of the employee. The school and society should realize that the stressing of advancement might not always be desirable, nor are the development of creative traits and the establishment of strong leadership programs always to the best interests of the student. This is true because

such programs could well increase already existing barriers between the employer and the employee. Therefore, the vocational needs should be analyzed through objectives presented in honest terms of the job opportunities and reinforcer systems. The employer must realize that employees possess needs and drives. The employer should develop techniques which will allow employees to fulfill their needs and still allow the employer to maintain administrative control.

To the urban student, the concern for authority and advancement might have been due to the metropolitan work pressures which were not felt as much by the rural students. Moral values and the need for co-workers were more important to the rural students. This might have been due to the closeness of the smaller communities and their religious influences. The desire for authority by the student, but the lack of its opportunity as evidenced by the supervisors, could lead to continual loss of job satisfaction unless counseling processes could lead the student to an acceptance of less authority.

Advancement, security, ability utilization, and achievement were ranked the four most important needs by the entire student sample. It is conceivable that the influences which society transmits to young people are reasons for these needs receiving the highest scale values. There is no intent to imply that these needs are bad or foolish; but educators, parents, civic organizations, religious groups, and students must realize that not all occupations can meet these needs, nor can all workers qualify to receive them if they are available.

Many of the students indicated the possession of vocational needs which could be met by professions in clusters 1 (professional) and 2 (semi-professional). The results of the MIQ also revealed that the

students had acquired vocational needs which could not be satisfied by occupations in cluster 7 (builder trades) and 9 (service-maintenance). The investigator is of the opinion that this has come about due to the strong emphasis upon the earning of a college degree. It is generally believed that to succeed in life the student must prepare himself for vocational choices which require advanced schooling. Although educators realize that advanced education is not possible for all, the continual social pressures are forcing individuals to make vocational choices in which satisfaction will be difficult to achieve. Thus, society is indirectly developing job dissatisfaction.

Educationally, this should be resolved through counseling by both the guidance personnel and teachers. If the student's abilities correspond to another job cluster and his vocational needs can be satisfied in that cluster, the student should be encouraged to change training areas. However, if the student is preparing for an occupational area which corresponds to his abilities, but his vocational needs could not be satisfied in this area, a possible solution would be to change the student's needs profile to meet his area of training. This investigator postulates that it would be wiser to begin developing work adjustment before the worker enters the work environment. The schools should continue to encourage students to develop their abilities to the fullest potential, but the students must also be informed that satisfactory occupations cannot be taken for granted, nor can satisfaction in that job be guaranteed.

Recommendations

As a result of the experiences gained from conducting this research project, the following recommendations are made for future research:

1. Further study should investigate and determine to what extent vocational needs of students can be changed or should be changed.

2. Studies should be devised to determine the best methods of teaching to bring about change of vocational needs.

3. Develop a study which would determine if change of vocational needs can take place without creating additional frustrations within the student.

4. Develop affective behavioral objectives on the state level to aid in vocational adjustment.

SELECTED REFERENCES

Bailey, Larry J. 1968. Theories of vocational behavior. *Journal of Industrial Teacher Education* 5(3):4-19.

Barry, Ruth, and Beverly Wolf. 1962. *An epitaph for vocational guidance.* Bureau of Publications, Columbia University, New York. 241 p.

Bennett, Charles Alpheus. 1926. *History of manual and industrial education up to 1870.* Charles A. Bennett Company, Inc., Peoria, Illinois. 461 p.

Bennett, Charles Alpheus. 1937. *History of manual and industrial education, 1870 to 1917.* Charles A. Bennett Company, Inc., Peoria, Illinois. 566 p.

Betz, Ellen L. 1968. Need-reinforcer correspondence as a predictor of job satisfaction. Research Report No. 18, Work Adjustment Project. University of Minnesota, Minneapolis, Minnesota. October. 14 p. (Mimeographed)

Betz, Ellen, David J. Weiss, Rene V. Dawis, George W. England, and Lloyd H. Lofquist. 1966. *Seven years of research on work adjustment.* Minnesota Studies in Vocational Rehabilitation, XX, Bulletin 43. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. February. 65 p.

Bilovsky, David, William McMasters, Joseph E. Shorr, and Stanley L. Singer. 1953. Individual and group counseling. *Personnel and Guidance Journal* 31(6):363-365.

Borg, Walter R. 1963. *Educational research: An introduction.* David McKay Company, Inc., New York. 718 p.

Borgen, Fred H., David J. Weiss, Howard E. A. Tinsley, Rene V. Dawis, and Lloyd H. Lofquist. 1968a. *Occupational reinforcer patterns (first volume).* Minnesota Studies in Vocational Rehabilitation, XXIV, Bulletin 48. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. October. 265 p.

Borgen, Fred H., David J. Weiss, Howard E. A. Tinsley, Rene V. Dawis, and Lloyd H. Lofquist. 1968b. *The measurement of occupational reinforcer patterns.* Minnesota Studies in Vocational Rehabilitation, XXV, Bulletin 49. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. October. 89 p.

Borow, Henry (Ed.). 1964. *Man in a world at work.* Houghton Mifflin Company, Boston, Massachusetts. 606 p.

Browne, C. G., and Betty J. Neitzel. 1952. Communication, supervision and morale. *Journal of Applied Psychology* 36(1):86-91.

Cook, Fred S., and Frank W. Lanham. 1968. Why do clerical employees lose their jobs? *Business Education World* 49(3):4-5.

Dawis, Rene V. 1967. The Minnesota studies in vocational rehabilitation. Research Report No. 1, Work Adjustment Project. University of Minnesota, Minneapolis, Minnesota. March. 17 p. (Mimeographed)

Dawis, Rene V., George W. England, and Lloyd H. Lofquist. 1964. *A theory of work adjustment.* Minnesota Studies in Vocational Rehabilitation, XV, Bulletin 38. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. January. 27 p.

Dixon, Wilfrid J., and Frank J. Massey, Jr. 1957. *Introduction to statistical analysis.* McGraw-Hill Book Company, Inc., New York. 488 p.

Evans, Rupert N., Garth L. Mangum, and Otto Pragan. 1969. *Education for employment: The background and potential of the 1968 vocational education amendments.* Institute of Labor and Industrial Relations, Ann Arbor, Michigan. 120 p.

Ferguson, George A. 1966. *Statistical analysis in psychology and education.* McGraw-Hill Book Company, Inc., New York. 466 p.

Fishbein, Martin (Ed.). 1967. *Readings in attitude theory and measurement.* John Wiley and Sons, Inc., New York. 499 p.

Gay, Evan G., and David J. Weiss. 1969. Manual for the Minnesota Importance Questionnaire (1967 revision). Work Adjustment Project, University of Minnesota, Minneapolis, Minnesota. October. 52 p. (Mimeographed)

Ginzberg, Eli. 1963. *The development of human resources.* McGraw-Hill Book Company, Inc., New York. 299 p.

Green, Laurence B., and Harry J. Parker. 1965. Parental influence upon adolescents' occupational choice: A test of an aspect of Roe's theory. *Journal of Counseling Psychology* 12(4):379-383.

Guthrie, Mearl R. 1954. The development of desirable personal traits for success in office work. *Business Education Forum* 8(5):31-32.

Herzberg, Frederick, Bernard Mausner, and Barbara Snyderman. 1959. *The motivation to work.* John Wiley and Sons, Inc., New York. 157 p.

Holland, John L. 1964. Major programs of research on vocational behavior, p. 259-284. *In* Henry Borow (Ed.). *Man in a world at work.* Houghton Mifflin Company, Boston, Massachusetts.

Jurgensen, Clifford E. 1947. Selected factors which influence job preferences. *Journal of Applied Psychology* 31(6):553-564.

Katzell, R. A. 1964. Personal values, job satisfaction, and job behavior, p. 341-363. *In* Henry Borow (Ed.). *Man in a world at work.* Houghton Mifflin Company, Boston, Massachusetts.

Kirchner, Wayne K. 1965. Relationship between general and specific attitudes toward work and objective job performance for outdoor advertising salesmen. *Journal of Applied Psychology* 49(6):455-457.

Likert, Rensis. 1961. *New patterns of management.* McGraw-Hill Book Company, Inc., New York. 279 p.

Likert, Rensis E., and S. E. Seashore. 1954. Employee attitudes and output. *Monthly Review* 77(1):641-648.

Liles, Parker. 1959. Attitudes and personality traits essential for clerical employment, p. 33-51. *In* Harry Huffman (Ed.). *The clerical program in business education.* Sixteenth Yearbook of the American Business Education Association. Somerset Press, Sommerville, New Jersey.

Lindahl, Lawrence G. 1949. What makes a good job? *Personnel* 24(4): 263-266.

Locke, Edwin A. 1968. *What is job satisfaction?* Educational Research Information Center ED 023-138. U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C. 43 p.

Maslow, A. H. 1954. *Motivation and personality.* Harper and Brothers, New York. 411 p.

McRae, Glenn G. 1963. The relationship of job satisfaction and earlier measured interests. Ed.D. dissertation, University of Florida, Gainesville, Florida. 127 p. (Original not seen; abstracted in *Dissertation Abstracts* 24(2):631. August, 1963.)

Miller, Dean C. 1970. Make job interesting, important. *The Herald Journal,* Logan, Utah. February 1, 1970. p. 12.

Miller, Delbert C., and William H. Form. 1964. *Industrial sociology.* Harper and Row, New York. 873 p.

Morse, Nancy C., and Robert S. Weiss. 1955. The function and meaning of work and the job. *The American Sociological Review* 20(2): 191-198.

Mortimer, William E. 1966. A study of the junior college problems in Utah with special reference to the Salt Lake metropolitan area. A report prepared for the Utah Legislative Council, Salt Lake City, Utah. May. (Mimeographed)

NEA Research Division. 1960. Small sample techniques. *NEA Research Journal* 38(4):99-104.

Parsons, Frank. 1967. *Choosing a vocation.* Reprint of the 1909 edition. Agathon Press, New York. 165 p.

Paterson, Donald G. 1949. Developments in vocational counseling technique, p. 80-96. *In* Edmund G. Williamson (Ed.). *Trends in student personnel work, 1949.* University of Minnesota Press, Minneapolis, Minnesota. 417 p.

Patterson, Cecil H. 1964. Counseling: Self-clarification and the helping relationship, p. 434-459. *In* Henry Borow (Ed.). *Man in a world at work.* Houghton Mifflin Company, Boston, Massachusetts.

Peters, Herman J., and James C. Hansen (Eds.). 1966. *Vocational guidance and career development.* Macmillan Company, New York. 466 p.

Powell, Douglas H. 1968. Careers and family atmospheres: An empirical test of Roe's theory, p. 244-249. *In* Donald G. Zytowski (Ed.). *Vocational behavior: Readings in theory and research.* Holt, Rinehart and Winston, Inc., New York.

Roe, Anne. 1956. *Psychology of occupations.* Wiley and Sons, New York. 340 p.

Rogers, David Lynn. 1964. Education and its relation to job satisfaction and occupational patterns. Unpublished M.S. thesis. Utah State University Library, Logan, Utah. 108 p.

Rosengarten, William, Jr. 1962. The occupational orientation of high school seniors: An experiment in vocational guidance. Ph.D. dissertation, New York University, New York. 121 p. (Original not seen; abstracted in *Dissertation Abstracts* 23(2):497. August, 1962.)

Runyon, Richard P., and Audrey Haber. 1967. *Fundamentals of behavioral statistics.* Addison-Wesley Publishing Company, Reading, Massachusetts. 304 p.

Schaffer, R. H. 1953. Job satisfaction as related to need satisfaction in work. *Psychological Monographs* 36(14):1-29.

Schrecker, Paul. 1948. *Work and history: An essay on the structure of civilization.* Princeton University Press, Princeton, New Jersey. 322 p.

Scott, Thomas B., Rene V. Dawis, George W. England, and Lloyd H. Lofquist. 1960. *A definition of work adjustment.* Minnesota Studies in Vocational Rehabilitation, X, Bulletin 30. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. May. 75 p.

Silvius, G. Harold, and Estell H. Curry. 1953. *Teaching successfully.* McKnight and McKnight, Bloomington, Illinois. 339 p.

Sredl, Henry J. 1964. A history of industrial arts from 1920 to 1964. Unpublished Ph.D. dissertation. Ohio State University, Columbus, Ohio. 311 p.

Super, Donald E. 1957. *The psychology of careers.* Harper and Brothers, New York. 362 p.

Super, Donald E. 1953. A theory of vocational development. *The American Psychologist* 8(5):185-190.

Switzer, David K., Austin E. Grigg, Jerome S. Miller, and Robert K. Young. 1962. Early experiences and occupational choice: A test of Roe's hypothesis. *Journal of Counseling Psychology* 9(1):45-48.

U.S. Congress. 1968. *Vocational education amendments of 1968.* Public Law 90-576, 90th Congress, H.R. 18366, Washington, D.C. October 16, 1968. p. 1.

Vocational Psychology Research. 1967. *Minnesota Importance Questionnaire, 1967 revision.* Vocational Psychology Research, University of Minnesota, Minneapolis, Minnesota. 17 p.

Vroom, V. 1964. *Work and motivation.* John Wiley and Sons, New York. 331 p.

Walt, Dorothy E. 1962. The motivation for women to work in high-level professional positions. Ph.D. dissertation, American University, Washington, D.C. 197 p. (Original not seen; abstracted in *Dissertation Abstracts* 23(5):1817. November, 1962.)

Watson, Billy. 1966. A study of the ability of supervisors to rank selected social and egoistic needs of their employees. D.B.A. dissertation, University of Colorado, Boulder, Colorado. 212 p. (Original not seen; abstracted in *Dissertation Abstracts* 26(11): 6336. May, 1966.)

Weiss, David J. 1970. Letter to the writer, March 11. (Dr. Weiss is present research director in charge of the Minnesota Work Adjustment Project.)

Weiss, David J., Rene V. Dawis, George W. England, and Lloyd H. Lofquist. 1964. *The measurement of vocational needs.* Minnesota Studies in Vocational Rehabilitation, XVI, Bulletin 39. Industrial Relations Center, University of Minnesota, Minneapolis, Minnesota. April. 101 p.

Zaleznik, A., C. R. Christensen, and F. J. Roethlisberger. 1958. *The motivation, productivity, and satisfaction of workers: A prediction study.* Harvard University Press, Boston, Massachusetts. 442 p.

Zytowski, Donald G. (Ed.). 1968. *Vocational behavior: Readings in theory and research.* Holt, Rinehart and Winston, Inc., New York. 486 p.

APPENDIXES

Appendix A

Occupational Clusters

Table 8. Occupations in each ORP cluster

Cluster	Occupation
Cluster 1	
Technical occupations, professional	Engineer, civil Engineer, mechanical Engineer, time study
Cluster 2	
Technical occupations, semi-professional	Accountant, cost Programmer (business, eng., and sci.) Statistician, applied Writer, technical publications
Cluster 3	
Sales occupations, service	Beauty operator Salesman, real estate Salesman, securities
Cluster 4	
Service occupations, social-education	Caseworker Counselor, school Counselor, vocational rehabilitation Instructor, vocational school Librarian Occupational therapist Physical therapist Teacher, elementary school Teacher, secondary school
Cluster 5	
Service occupations, business detail	Accounting clerk, civil service Automobile service, station attendant Clerk, general office, civil service Stenographer, technical, civil service Typist, civil service

Table 8. Continued

Cluster	Occupation
Cluster 6	
Service occupations, personal	Embalmer
	Medical technologist
	Nurse aid
	Nurse, licensed practical
	Orderly
	Radiologic technologist
	Waiter-waitress
Cluster 7	
Manual occupations, building trades	Carpenter
	Heavy equipment operator (construction)
	Painter/paperhanger
	Pipefitter
	Plumber
Cluster 8	
Manual occupations, manufacturing	Accounting clerk, manufacturing
	Assembler (electrical equipment)
	Assembler, small parts
	Baker
	Marker
	Meat cutter
	Production helper (food)
	Punch-press operator
	Sewing-machine operator, automotic
Cluster 9	
Manual occupations, service-maintenance	Automobile-body repairman
	Automobile mechanic
	Draftsman, architectural
	Electrical technician
	Electrician
	Electronics mechanic
	Machinist
	Maintenance man, factory or mill
	Office-machine serviceman
	Screw-machine operator, production
	Photoengraver (stripper)
	Sheet metal worker
	Television service and repairman
	Welder, combination

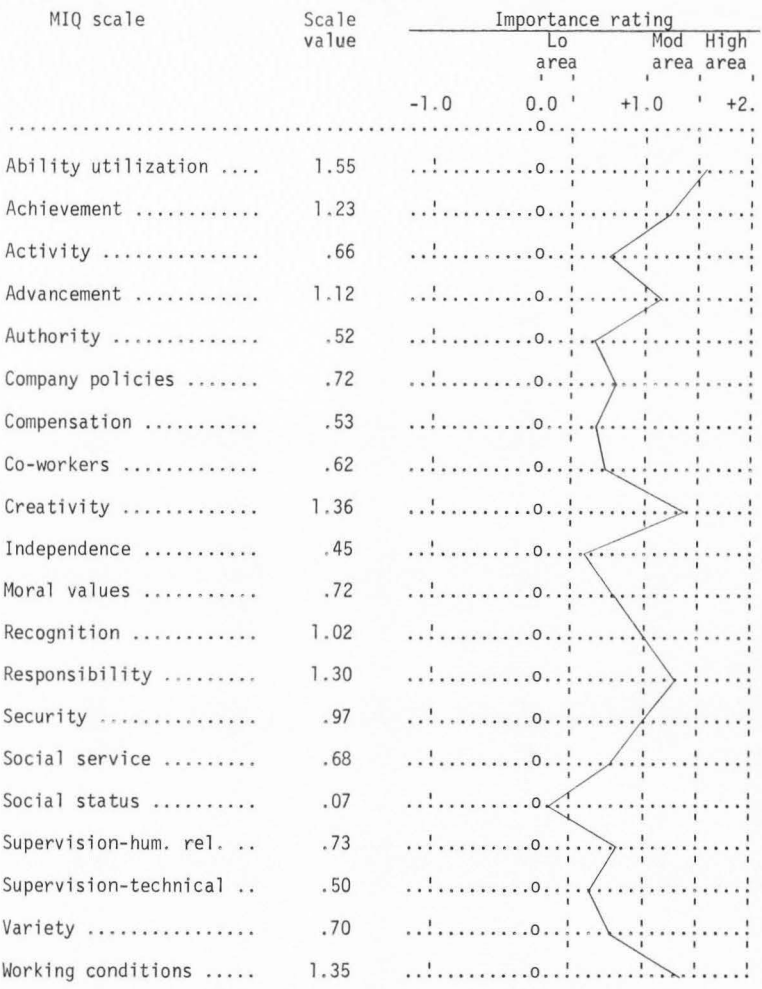

Figure 10. ORP cluster 1: Technical occupations, professional; importance rating obtained from 105 supervisors working in the technical occupations.

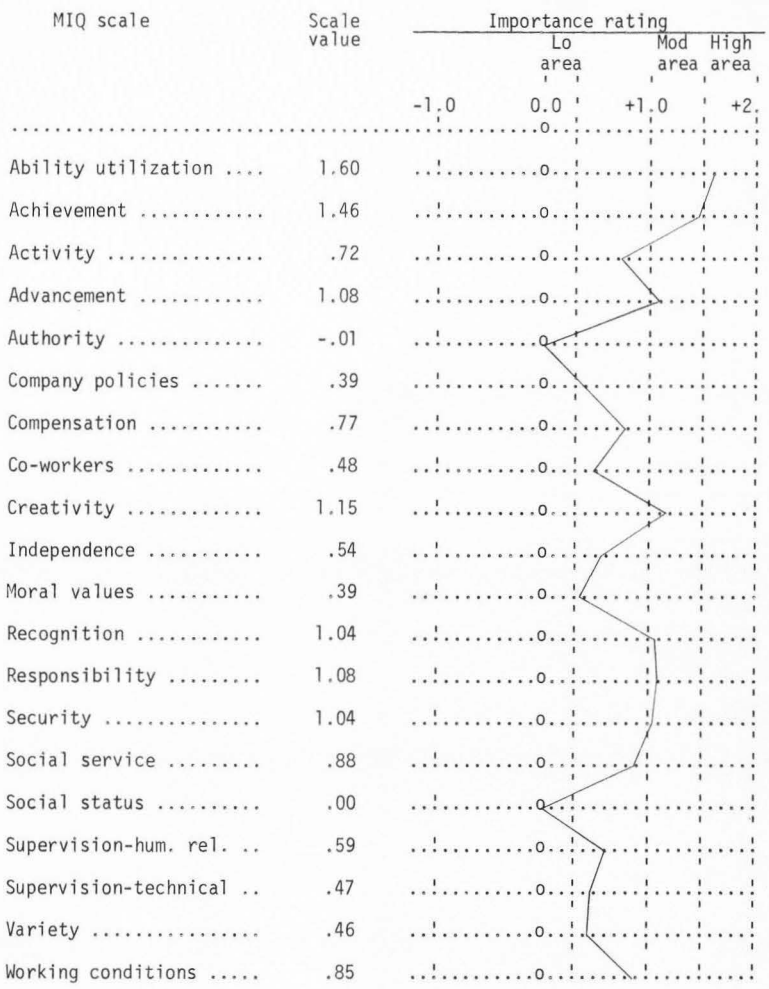

Figure 11. ORP cluster 2: Technical occupations, semi-professional; importance rating obtained from 162 supervisors working in the technical occupations.

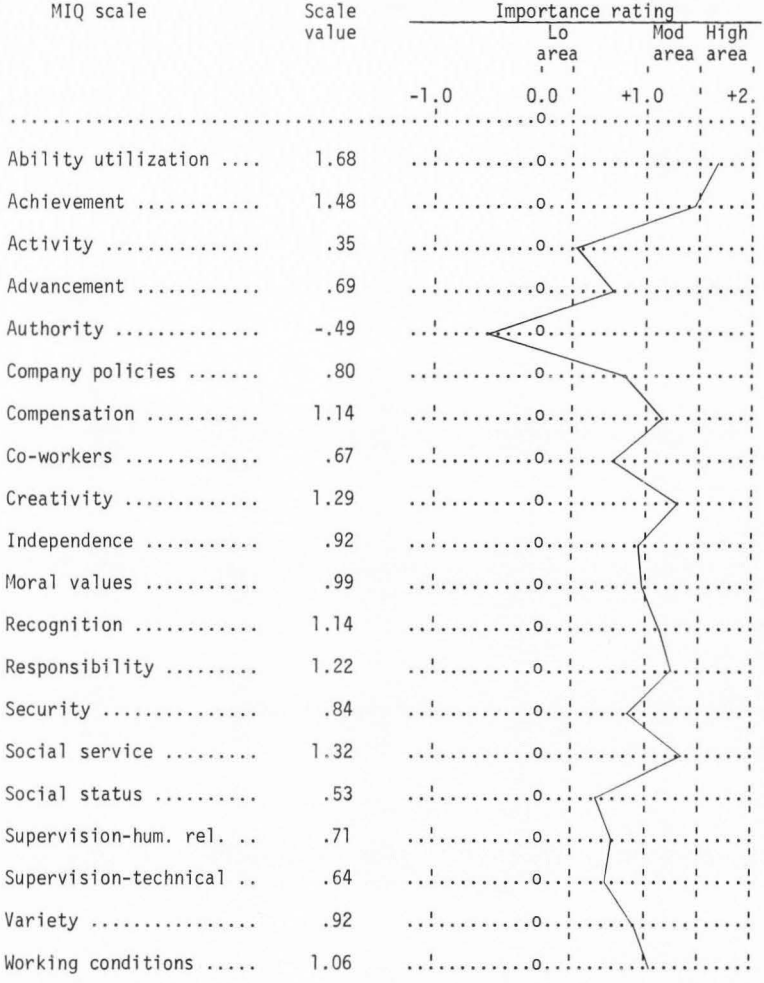

Figure 12. ORP cluster 3: Sales occupations, service; importance rating obtained from 99 supervisors working in the sales occupations.

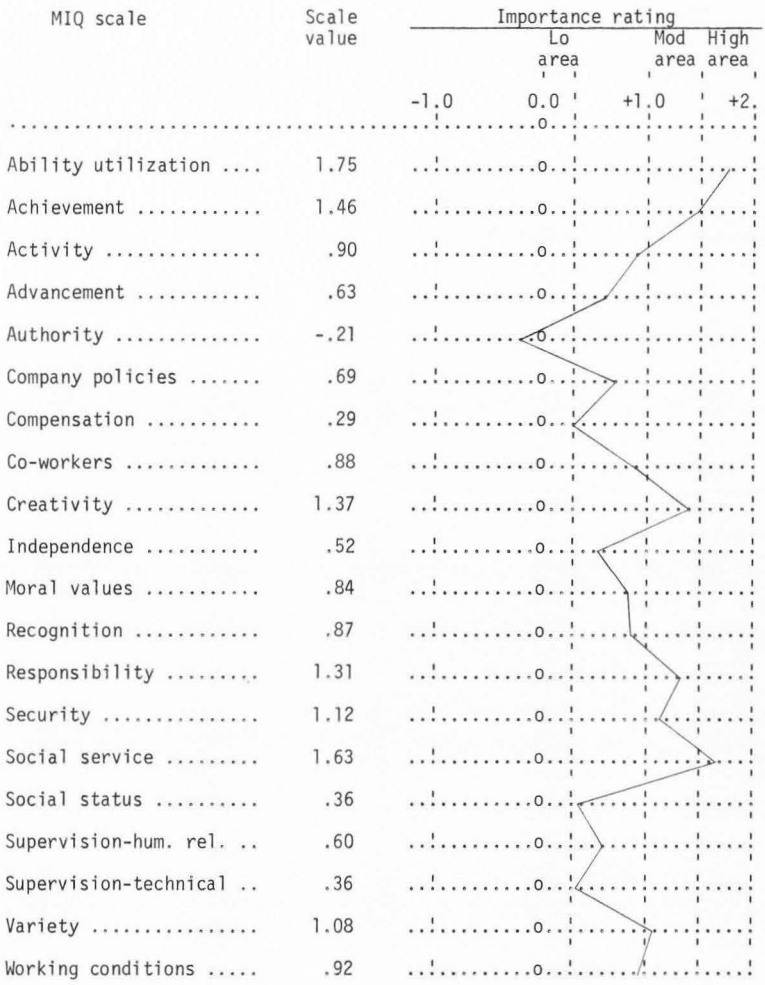

Figure 13. ORP cluster 4: Service occupations, social-educational; importance rating obtained from 318 supervisors working in the sales occupations.

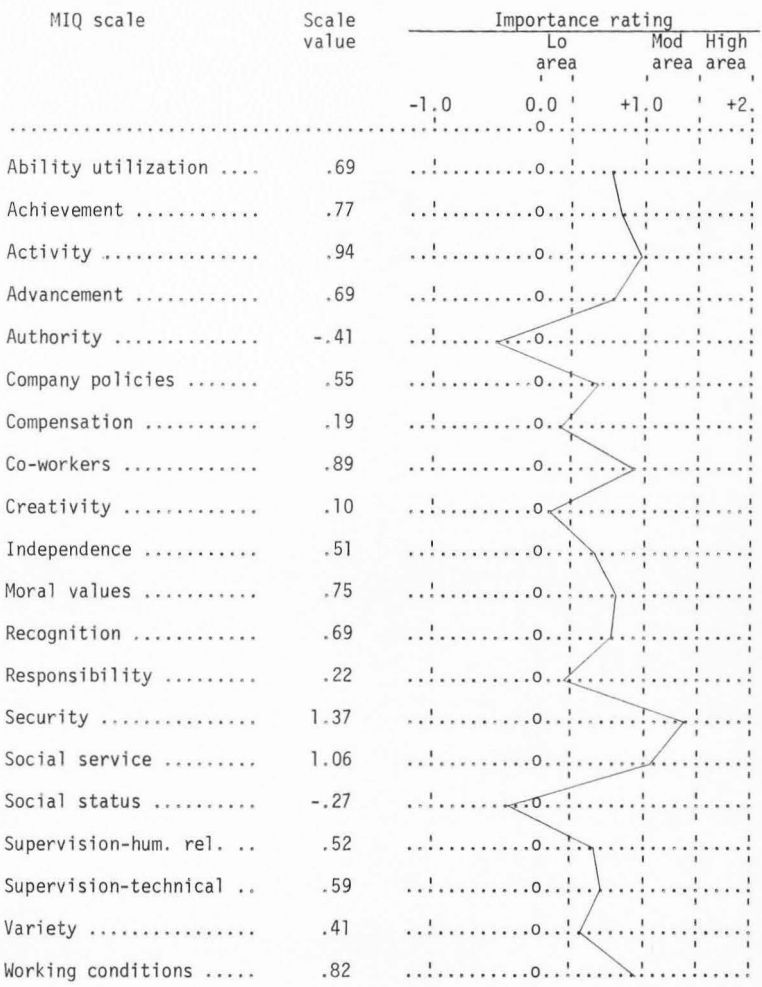

Figure 14. ORP cluster 5: Service occupations, business detail; importance rating obtained from 221 supervisors working in the service occupations.

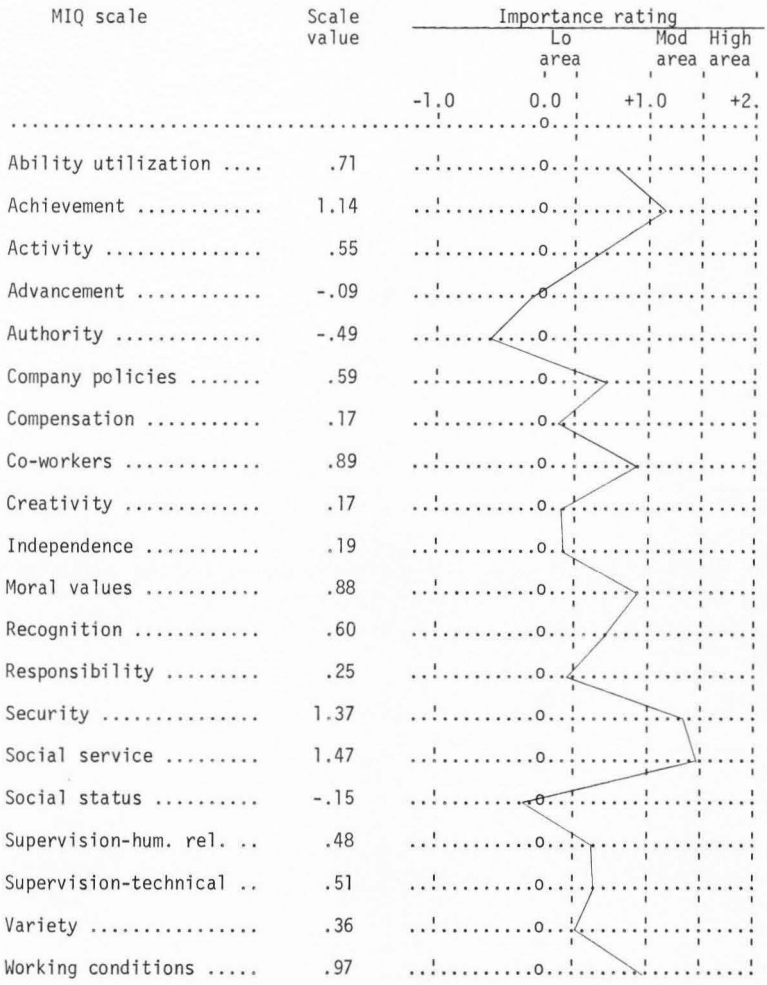

Figure 15. ORP cluster 6: Service occupations, personal; importance rating obtained from 253 supervisors working in the service occupations.

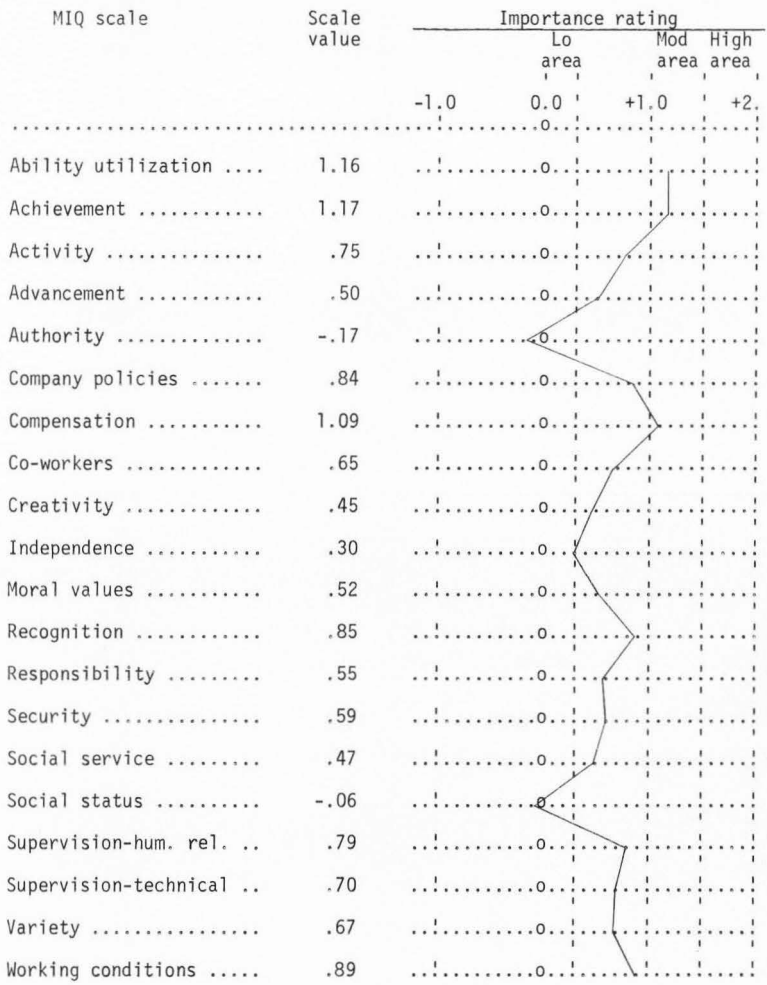

Figure 16. ORP cluster 7: Manual occupations, building trades; importance rating obtained from 175 supervisors working in the manual occupations.

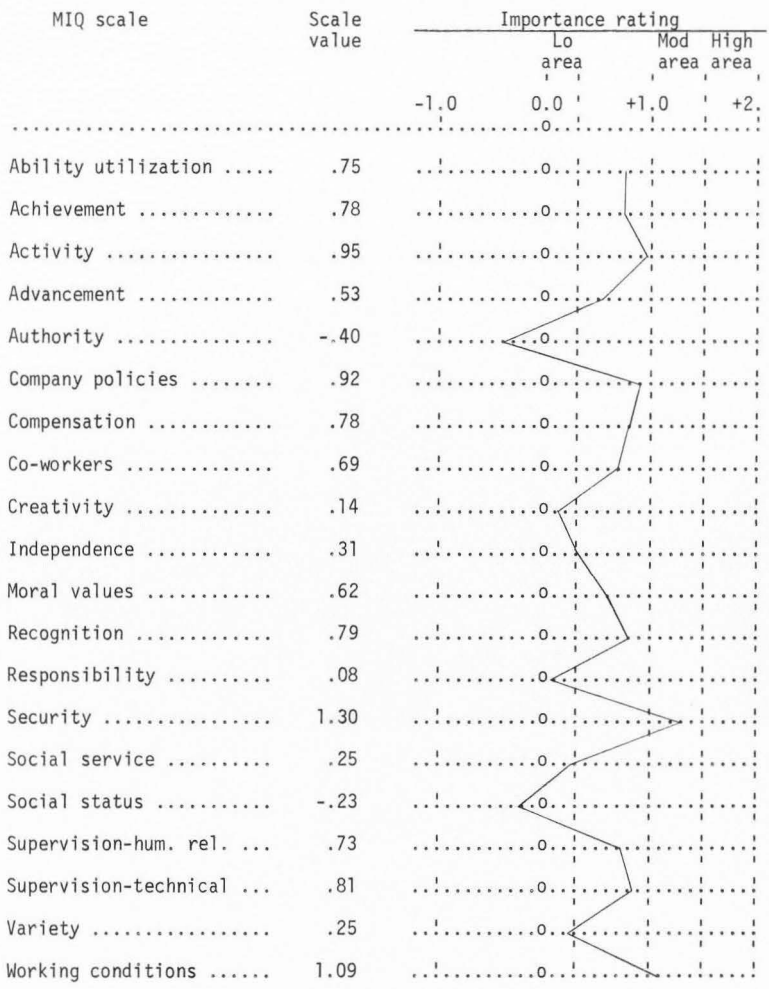

Figure 17. ORP cluster 8: Manual occupations, manufacturing; importance rating obtained from 277 supervisors working in the manual occupations.

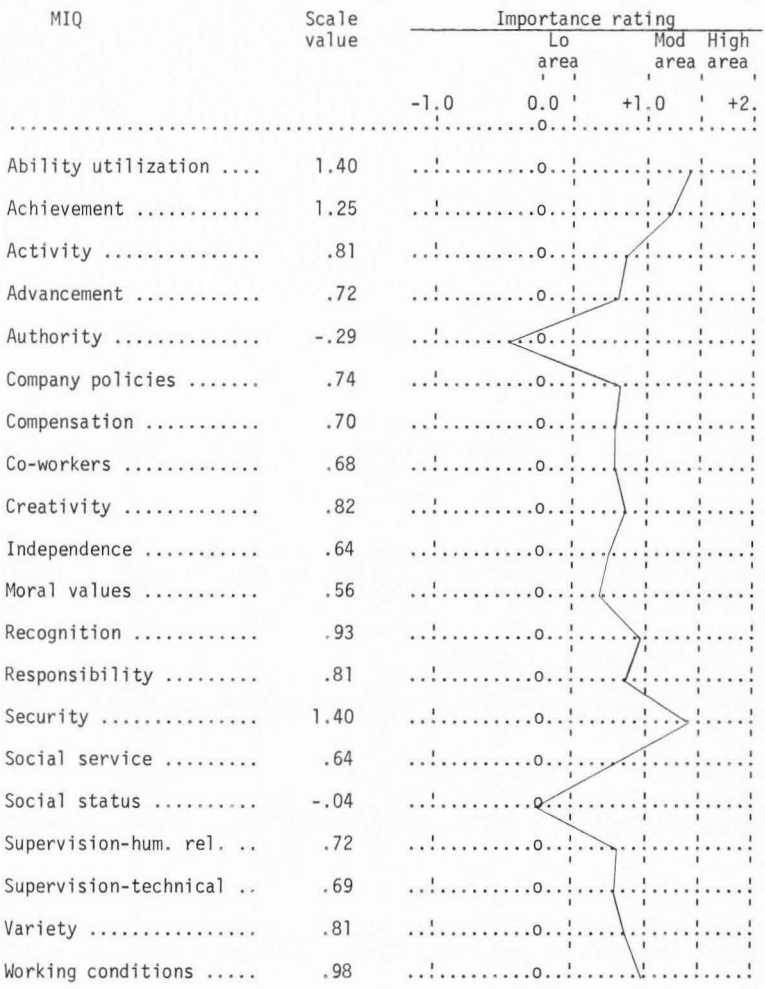

Figure 18. ORP cluster 9: Manual occupations, service-maintenance; importance rating obtained from 478 supervisors working in the manual occupations.

Appendix B

Mean Scores of the 20 Vocational Needs for the Rural and Urban Schools

Table 9. Mean scores of the 20 vocational needs for the rural schools

MIQ scales	A	B	C	D	E	F	G
Ability utilization	1.37	1.40	1.25	1.35	1.23	1.36	1.45
Achievement	1.29	1.50	1.13	1.33	1.22	1.50	1.25
Activity	.62	.55	.73	.59	.44	.50	.59
Advancement	1.11	1.47	1.40	1.51	1.19	1.06	1.45
Authority	.29	-.02	-.23	.17	-.28	-.44	-.08
Company policies	.71	.88	.85	1.06	.57	.75	.96
Compensation	.72	.93	.77	.97	.76	.76	1.10
Co-workers	.61	.90	.54	.98	.92	.71	.84
Creativity	.90	1.21	.99	1.21	1.04	1.07	1.19
Independence	.49	.10	.13	.30	.18	.18	.04
Moral values	.49	1.11	.50	1.14	.86	.52	.63
Recognition	.98	1.05	.94	.79	.66	.65	.71
Responsibility	.83	1.13	.95	1.30	1.13	.80	1.32
Security	1.10	1.36	1.58	1.44	1.25	1.40	1.53
Social services	.91	.99	.67	1.16	.82	.80	.85
Social status	.24	.36	-.05	.30	.05	.02	.13
Supervision--hum. rel.	.66	.88	1.05	1.13	.75	.50	1.10
Supervision--technical	.55	.70	1.04	.98	.48	.60	.93
Variety	.56	.71	.63	.30	.36	.64	.69
Working conditions	1.10	1.20	.99	1.47	1.24	1.06	1.20

Table 10. Mean scores of the 20 vocational needs for the urban schools

MIQ scales	X	Y	Z
Ability utilization	1.59	1.30	1.43
Achievement	1.55	1.18	1.30
Activity	1.16	.64	.30
Advancement	1.55	1.77	1.49
Authority	.37	.21	-.02
Company policies	.79	.63	.66
Compensation	1.22	.86	.57
Co-workers	.48	.63	.38
Creativity	1.52	1.15	1.34
Independence	.99	.35	.15
Moral values	.46	.25	.37
Recognition	1.04	.84	.84
Responsibility	1.35	1.05	1.25
Security	1.74	1.41	1.16
Social service	.40	.69	1.00
Social status	.22	.09	-.11
Supervision--human relations	.84	.84	.59
Supervision--technical	.93	1.06	.48
Variety	.98	.84	.38
Working conditions	1.49	1.14	1.00

VITA

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Candidate for the Degree of

Doctor of Education

Dissertation: A Comparison of Job Satisfaction Needs of Selected Rural and Urban Industrial Education Students in the State of Utah

Major Field: Industrial and Technical Education

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