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A COMPARISON OF THREE OPERATIONAL DEFINITIONS
OF JOB SATISFACTION

by

Thomas J. Kuieck

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Education
Department of Educational Leadership

Western Michigan University
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Thomas J. Kuieck

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CHAPTER I

THE PROBLEM AND ITS BACKGROUND

An increasingly apparent reality in the working places of America is that workers are more dissatisfied with their jobs today than they were in the past. Despite receiving historically high wages and privileges, workers express a greater discontent with their jobs today than at any time in the last decade according to Quinn and Staines (1979). The dissatisfaction cuts across lines of age, gender, race, and occupation, and those traditionally most satisfied with their jobs--white collar employees--were among those occupational groups showing the sharpest decline in job satisfaction.

If work stoppages are any indicator of discontent, teachers, too, are dissatisfied with aspects of their work. In Michigan alone during the weekend before schools were to open in 1979, some 250 school districts were without teachers' work contracts (Teachers' Voice).¹ Moreover, studies of teachers' job satisfaction and studies of factors contributing to teachers' leaving the profession historically have indicated that teachers are both satisfied and dissatisfied with teaching. Derthick (1957), in a study of teachers who left the profession, found that the major reasons for teachers' leaving were inadequate salaries, inadequate working conditions, dissatisfaction with teaching as a profession, poor administrative relationships, and

¹Teachers' Voice, September 3, 1979. Weekly newspaper published by the Michigan Education Association, Lansing, Michigan.

better career opportunities in other fields. In 1968, Aven studied 1,252 Youngstown University School of Education graduates and learned that the major reasons men left teaching were inadequate salaries or better career opportunities in other occupations. Women, on the other hand, left the profession primarily for reasons of marriage or maternity. Finally, the findings of Bishop's 1969 study of Iowa's public school teachers generally concur with the results of a number of other job satisfaction studies of teachers (e.g., Holdaway, 1978; Wickstrom, 1971). The teachers' most satisfying work factors, according to Bishop, were the work itself, achievement, and relations with students. The factors least satisfying were school policies and rules, lack of recognition, quality of supervision, and inadequate salaries. Thus, some of the job satisfaction literature regarding teachers depicts teachers as satisfied with teaching itself but dissatisfied with the working conditions associated with teaching.

Despite the concurrence of these findings, however, another quite different picture of teachers' job satisfaction also emerged during the last decade. The picture, generated by a number of job satisfaction studies of teachers, portrays teachers as generally satisfied with the conditions of their work (for example, the condition of the school buildings, the adequacy of teaching materials, and salary) but less satisfied with teaching itself. Trusty and Sergiovanni's 1966 study contributed to the proliferation of the view that teachers were satisfied with the so-called extrinsic conditions of their employment but less satisfied with teaching's intrinsic qualities. Trusty and Sergiovanni revised a questionnaire, the Need

Satisfaction Questionnaire (NSQ), which was originally developed by Porter (1961), in an attempt to measure teachers' perceived need deficiencies in five work categories: security, socialization, autonomy, esteem, and self-actualization--a need classification conceived by Maslow (1954) and modified by Porter (1961). A needs deficiency was defined as the difference between the perceived satisfaction one feels at any given moment and what he or she would like to feel (Porter, 1961). Although Trusty and Sergiovanni noted greater dissatisfaction among male teachers than among female teachers, particularly on status, salary, and advancement variables--question items on the NSQ--their overall conclusion was that the largest need deficiencies for all educators, including administrators, have to do with intrinsic motivators: esteem, autonomy, and self-actualization. Indeed, other studies (Johnson, 1967; Oswalt, 1967; Rogers, 1976) support the point of view that teachers are satisfied with the conditions of their work. Therefore, a major problem one encounters when considering teachers' job satisfaction is the differing and conflicting views of teachers' job satisfaction presented in the job satisfaction literature. Clearly, researchers have not reached consensus about what satisfies and dissatisfies teachers with their work.

Contributing to the confusion are studies of trends in teachers' and others' job satisfaction. An early review of job satisfaction trends suggested that no significant changes in job satisfaction had occurred over a period of 15 years, 1958 to 1973, in any occupations (Quinn, Staines, & McCullough, 1974). Another study of trends in job satisfaction also failed to detect reduced job satisfaction from 1969

to 1973 (Quinn, Mangione, & Baldi de Mandilovitch, 1973). Quinn and Staines' 1979 study, however, found significant declines in job satisfaction in various occupational groups including teachers for the years 1973 to 1977. The clarity of these findings--stable job satisfaction from 1958 to 1973 and reduced job satisfaction thereafter--contrasts with a number of other studies of trends in teachers' job satisfaction.

In partial replications of the Trusty and Sergiovanni 1966 study, Carver and Sergiovanni (1968), Birada (1978), and Goldsberry, Henderson, and Sergiovanni (1978) used the NSQ to infer trends in teachers' job satisfaction for the years 1966 to 1978. Although Goldsberry et al. found a general decline in teachers' job satisfaction for the years 1969 to 1978, Birada reported substantial declines only in two of the five categories of Maslow's hierarchy of needs paradigm and an increase in satisfaction in one category. Thus, anyone wishing to infer trends in teachers' job satisfaction must choose between the findings of Quinn and Staines' research and the findings of those researchers using the NSQ instrument.

Certainly, the logic and appeal of studying trends in teachers' job satisfaction is understandable. If teachers and administrators could determine the nature and direction of teachers' job satisfaction, strategies could be developed to ameliorate negative trends and enhance positive trends. Moreover, as Sergiovanni and Starratt (1979) noted, in reference to usefulness of the NSQ, "If one views deficiencies in need as measurements of job satisfaction, then supervisors should work to restructure reward systems in schools so that they

focus more adequately at levels where the largest deficiencies exist" (p. 160). Sergiovanni and Starratt, therefore, called for longitudinal research replicating Trusty and Sergiovanni's 1966 study:

Of course many changes have taken place since these studies were conducted in 1966 and 1968 [a similar study of high school teachers only]. The economic climate of the seventies combined with declining enrollments and job shortages has produced a recession in education. Could it be that economic and other security-related conditions are now more important to teachers? Can the teacher militancy movement be interpreted as a demand for autonomy? What effect has the women's liberation movement had on raising the expectations of female teachers? Are they now less immune to job dissatisfaction? More work needs to be done in understanding more fully and in updating existing data relating to the phenomena of human need and teacher satisfaction. (p. 163)

To be sure, a variety of economic, social, and demographic forces which were not present--or at least not present in similar degrees in 1966--affect teachers today. Salary gains by teachers since 1967 have either merely kept pace with inflation or resulted in a loss of purchasing power (Museumche & Adams, 1977). Job-related stress, today a recognized reality of teaching, has prompted the National Education Association to adopt a resolution on job stress:

The National Education Association believes that the dynamics of our society and increased public demands on education [schooling] have produced adverse and stressful classroom and school conditions. These conditions have led to increased emotional and physical disabilities among teachers. (Today's Education, 1979, p. 36)

Moreover, as teachers grow older, they enter what life-long learning authorities such as Levinson, Darrow, Klein, Levinson, and McKee (1978) indicate are career changing points in persons' lives. As Sergiovanni (in press) observed:

The years 25 to 34 seem to represent a period of hope and despair for the educators. Expectations are high at this stage of one's career. Teachers are moving into supervisory and administrative posts at an earlier age--it is now or never for many of these people. This is also the age for the most rapid career development in other occupations. Although teachers hold their own with other occupational groups (in terms of promotion and salary) in the early years, people in other occupations move ahead at this time. The engineer next door (same age) has moved to a "better" neighborhood and the accountant across the street (same age) has had his fourth promotion--junior partner is next. (p. 88)

Indeed, women in particular today may be less likely to enter and remain in teaching and more likely to enter business careers than they were in the past ("Hard lessons for teachers . . . , " 1979).

Nonetheless, as real as these phenomena may be and as tempting as it may be to infer their effects on teachers' job satisfaction during the time spanning the original Sergiovanni study and its replications (1966-1978), flaws in the four studies' research methodologies and in the measure of the dependent variable, the NSQ, render suspect the researchers' conclusions about trends in teachers' job satisfaction. Despite the fact that there are many reasons not to compare the findings of the various studies in attempts to discern trends in teachers' job satisfaction, the researchers did so. Sergiovanni (in press) compared kindergarten through 12th grade teachers' and administrators' need deficiencies as reported by Birada (1978) with ninth through 12th grade teachers' need deficiencies (Carver & Sergiovanni, 1968; Goldsberry et al., 1978). Birada (1978), Goldsberry et al. (1978), and Sergiovanni (in press) compared results from a randomly derived sample (Birada, 1978) with results from their non-randomly derived samples. Furthermore, the scoring, computational, and

analytic procedures of Trusty and Sergiovanni's 1966 study and Birada's 1978 study differ from the procedures used by Carver and Sergiovanni (1968) and Goldsberry et al. (1978), thus further confusing comparisons of the studies' findings. Finally, results from single school systems (Rochester Public Schools, Rochester, New York, [Trusty & Sergiovanni, 1966] and the Calgary Public Schools, Calgary, Alberta, Canada, [Birada, 1978]) are compared with results from multiple school systems--as many as 36 in the case of Carver and Sergiovanni's 1968 study. In short, these comparisons are faulty and lead one to question the merit of speculations about trends in teachers' job satisfaction based upon them.

Perhaps an even more serious flaw in these studies is the failure of the researchers to establish either adequate reliability or content and construct validity for the questionnaire they administered, the NSQ. Although Birada (1978) derived reliability coefficients he deemed adequate, his pilot population was small--26 educators--and his coefficients of reliability were not calculated with the statistic most often reported in the studies, namely, the need deficiency statistic. A need deficiency statistic is the value derived from subtracting one's perceived actual satisfaction from one's perceived ideal satisfaction (Sergiovanni & Starratt, 1979, p. 160). Bunda² explained Birada's choice of calculation by noting that the use of an internal consistency measure is inappropriate for a difference score. Moreover, Birada (1978) himself noted that "A number of respondents

²Bunda, M. A. Personal communication at Western Michigan University, November 27, 1979.

indicated their difficulty in answering the NSQ's questions either by openly questioning the intent of the item or by leaving it blank" (p. 53). Even cursory inspection of the instrument reveals its ambiguity. The security variable, "The feeling of security in my teaching position" (Birada, 1978, p. 164), seems particularly vague. The instrument's content validity, therefore, is suspect.

Cronbach and Meehl (1955) stated that content validity is established "by showing that the test items are a sample of a universe in which the investigator is interested" (p. 282). One questions, though, whether the NSQ's 13 questions, adapted from the original 15 questions (Porter, 1961), adequately represent a sample of Porter's revision of Maslow's hierarchy of needs universe. Can one question adequately assess an individual's security needs? Can two questions adequately assess one's social needs? Indeed, can 13 questions adequately assess one's needs of security, socialization, esteem, autonomy, and self-actualization? Current standards of measurement would suggest not (Bunda³).

Furthermore, the construct validity of the NSQ has not been established, even though Cronbach and Meehl's (1955) paper clearly indicated that construct validity "must be investigated whenever no criterion or universe of content is accepted as entirely adequate to define the quality to be measured" (p. 282). To be sure, numerous studies question the adequacy of the Maslow hierarchy in explaining human motivation (Cummings & Schwab, 1970; Kokkila, Slocum, &

³Ibid.

Strawser, 1972; Salancik & Pfeffer, 1977; Schneider & Alderfer, 1973). In reality, the NSQ may not possess construct validity. Payne (1970), in a factor analytic study of the NSQ, concluded that "none of the factors [in the study] represent any single one of the needs on the Maslow Need Hierarchy" (p. 257). Payne concluded that one "must be pessimistic about the success of the NSQ in measuring the Needs in the Maslow Hierarchy" (p. 265). Finally, the use in the NSQ of the "need deficiency" concept of measuring job satisfaction has little empirical support. The plain fact is that researchers have not sufficiently studied the extent to which the NSQ accurately measures need deficiencies and job satisfaction.

The Problem

Thus, for educators and the public who desire to understand and perhaps measure teachers' job satisfaction, the problem is the veracity of heretofore published job satisfaction research. Central to that problem is the validity of the job satisfaction instruments used in studies of teachers' job satisfaction. The apparent variance in such instruments' psychometric quality requires study of their concurrent validity. An instrument may be regarded as possessing concurrent validity when it correlates with an established test (Cronbach, 1970).

Purpose and Significance of the Study

The purpose of this study was to determine if concurrent validity could be established for the NSQ and the Quality of Employment Job

Satisfaction Survey (QEJSS)⁴ (Quinn & Staines, 1979) with the Minnesota Satisfaction Questionnaire, long-form (MSQ), (Weiss, Dawis, England, & Lofquist, 1967). The MSQ has been respected as a satisfaction measure, as has been the Job Descriptive Index (JDI), created by Smith, Kendall, and Hulin (1969). Since the MSQ has been demonstrated to possess concurrent validity with the JDI (Gillet & Schwab, 1975), the MSQ was selected as the criterion measure of the validity of each of the other two instruments. Cronbach (1970) suggested that comparisons between tests are valid only when the criterion test is accepted as a meaningful measure of the phenomenon in question. That the MSQ, like the JDI, is a meaningful measure of job satisfaction was established by Gillet and Schwab (1975): "The four satisfaction scales common to the JDI and MSQ show very high validities judged against the absolute criteria of Campbell and Fiske's (1959) procedure" (p. 317). Therefore, the study compared the NSQ and the QEJSS with the criterion standard, the MSQ. The NSQ and the QEJSS were chosen for comparison with the MSQ because each has led to conclusions about educators' job satisfaction that differ from the other's conclusions.

The significance of the study lies in its potential to alter individuals' attitudes toward the validity of the three instruments as job satisfaction measures and accordingly to alter attitudes toward the research generated by those measures. Although the study investigated the validity of all three measures, its particular focus was

⁴The title of the instrument, The Quality of Employment Job Satisfaction Survey (QEJSS), was coined for this study since Quinn and Staines refer to it only as a "job satisfaction outcome measure."

the validity of the NSQ. Of the three measures, the NSQ is the least well developed, yet researchers in educational circles continue to draw conclusions from it and to make resultant recommendations about teachers' job satisfaction. The study yielded information, then, with which to evaluate both the NSQ instrument and the research findings it has produced.

Limitations of the Study's Findings

Limitations of the study's findings include the classic limitations of survey research. It was assumed that respondents would answer the instruments honestly and that the self-report instruments measure the phenomenon called job satisfaction. It was also assumed that variance due to differences in data collection dates and procedures was minimal.

Other limitations are related to the selection of the research sample. Since the purpose of the study was to explore the relative efficacy of the three instruments in measuring educators' job satisfaction, generalization of the results was a secondary concern. Accordingly, the sample for the study was not randomly drawn. Rather, one public school system's K-12 teachers and administrators, and three Christian school buildings' teachers and administrators (K-12) served as the sample. All of the school buildings were in the same geographical area--the Grandville, Jenison, and Hudsonville region of greater Grand Rapids, Michigan. One must therefore limit comparisons of the instruments' validity and of the levels of the teachers' and administrators' job satisfaction only to teachers and administrators

in similar working contexts--contexts including the geographic location of the school system, socioeconomic status of the school system's students and professional staff, and the cultural and racial identity of students, faculty, and administrators. One should also consider when in the school year the data were collected, since job satisfaction may be related to progress into the school year. The findings of the study, therefore, are limited in their suitability to be generalized. Thus, the findings are best regarded as preliminary rather than definitive in nature.

Research Questions

Nine questions governed the development, design, and procedures of this study:

1. Will the NSQ, MSQ, and QEJSS discriminate public school teachers from public school administrators?
2. Will the NSQ, MSQ, and QEJSS discriminate men from women?
3. Will the NSQ, MSQ, and QEJSS discriminate younger teachers from older teachers?
4. Will the NSQ, MSQ, and QEJSS discriminate inexperienced teachers from experienced teachers?
5. Will the NSQ, MSQ, and QEJSS discriminate among teachers of lower and higher incomes?
6. Will the NSQ, MSQ, and QEJSS discriminate among teachers at the elementary, junior high, and senior high school levels?
7. Will the NSQ, MSQ, and QEJSS discriminate between public and Christian school teachers?

8. Will the scales of the NSQ, MSQ, and QEJSS correlate positively?

9. Do the scales of the NSQ represent independent factors in this sample of educators?

Summary

The job satisfaction of teachers concerns educators and the public. Because educational practitioners and researchers need more information about the merit of existing job satisfaction research and because the validity of the measures used in that research affects its quality, a comparative study of three commonly used job satisfaction instruments was needed. The study was designed to answer the question of how the NSQ and QEJSS compare to the criterion measure MSQ in measuring teachers' job satisfaction.

CHAPTER II

REVIEW OF RELATED LITERATURE

What then can studies of job satisfaction offer the practitioner, given the various profound differences in approach, the unresolved issues, the empirical difficulties of data collection, and the sheer number of variables that affect job satisfaction? In the first place, perhaps they can offer a context of humility in approaching the problem. There is no panacea, no magic wand which will transform alienated individuals into happy, contented, hardworking, high-quality producers. (Gruneberg, 1976, p. xii)

The study of job satisfaction was first evident nationally with Fischer and Hanna's (1931) research into job satisfaction and vocational maladjustment. It was the now well-known experiments at the Hawthorne (Chicago) plant of the Western Electric Company in 1927, however, that generated widespread interest in the study of job satisfaction and, in particular, its relationship to productivity (Roethlisberger & Dickson, 1939). After 1950 investigators began to examine other aspects of job satisfaction, and Lawler (1971) estimated that during the period of time spanning 1950 to 1971, between two and four thousand publications on job satisfaction had appeared. Educational researchers began investigating teachers' job satisfaction during the 1960's and have continued to do so to the present time. The result of this outpouring of research is a literature of job satisfaction that is voluminous, conceptually diverse, and conflicting in its findings.

A number of scholars have attempted to analyze and synthesize job satisfaction research. Hoppock's Job Satisfaction, published in

1935, led the way for later reviewers such as Brayfield and Crockett (1955); Herzberg, Mausner, Peterson, and Capwell (1957); Vroom (1964); and Srivastva, Salipante, Cummings, Notz, Bigelow, and Waters (1977). The reviews revealed that, although certain correlates with job satisfaction seem to function across work settings, the research is fraught with unexplained variance. This variance has led some job satisfaction authorities to question the merit of the literature (Nord, 1977), if not job satisfaction's usefulness as an attitudinal indicator (Seashore and Taber, 1975).

Central to the confusing nature of the literature of job satisfaction is the absence of a theory, technical vocabulary, and validating research accepted as consensus choices by job satisfaction theorists and researchers. Rather, the literature is comprised of theory and research reflecting a variety of conceptual constructs limited to explanations of only specific aspects of job satisfaction. Moreover, no single definition of job satisfaction has been universally accepted by theorists and researchers. Is job satisfaction a unitary concept that persons can be expected to verbalize? Is the absence of job satisfaction job dissatisfaction, or is it simply the absence of job satisfaction, as Herzberg, Mausner, and Snyderman (1959) suggested? Holdaway (1978) noted that definitions of job satisfaction are of two types, affective and behavioral. Affective definitions include Locke's (1969) definition: "Job satisfaction and dissatisfaction are complex emotional reactions to the job" (p. 314); Smith et al.'s (1969) definition: "persistent feelings toward discriminable aspects of the job situation" (p. 37); and Porter's (1962): "The

larger the difference [between what a person thinks he or she should receive and what he or she feels actually is received] the larger the degree of dissatisfaction or the smaller the degree of satisfaction" (p. 378). Behavioral definitions of satisfactions of teachers include Belasco and Alluto's (1972) definition: "a willingness to remain within the current school organization despite inducements to leave" (p. 44) and Lortie's (1975) definition: "readiness to teach again" (p. 91). The overwhelming majority of studies of job satisfaction, however, adopt some form of affective definition of job satisfaction.

Researchers generally agree that job satisfaction is a multifaceted phenomenon. Those authorities believing that job satisfaction is not a static affective state within the worker, but rather a dynamic affective state, tend to agree with Seashore¹ that job satisfaction is an accommodative process:

[There is] in the "normal" worker a persistent force toward the experience of satisfaction and the avoidance of the experience of dissatisfaction; experiencing dissatisfaction with the job or some aspect on the job, the worker will seek and find accommodation in some fashion. (p. 21)

It is, however, this accommodative process--this capability of one's job satisfaction to shift direction, sometimes sharply and quickly--that has frustrated researchers (Barbash, 1976, p. 17). The job satisfaction one measures today may not be the job satisfaction one will measure tomorrow. Job satisfaction, then, is not only multi-faceted

¹Seashore, S. E. Defining and measuring the quality of working life. Paper presented to the International Conference on the Quality of Working Life, New York, 1972.

but elusive and transient as well.

The failure of theorists and researchers to reach consensus on the definition and constructs of job satisfaction has contributed to the problems already inherent in the measurement of job satisfaction. Studies of job satisfaction typically rely on self-report, survey research. Barbash (1976) noted that researchers are increasingly coming to recognize the limitations this research method places on the literature of job satisfaction (p. 22). Seashore² suggested that individuals use job satisfaction surveys to portray themselves as having accommodated themselves to their jobs:

[Self-reporting] contains elements of expediency, self-deception, ignorance, social pressure, and false beliefs about the world in which the employee lives. . . . Individuals can and do report satisfaction with work situations that we know (from information not accessible to the respondents) are abbreviating their lives, threatening their family relationships, and unnecessarily narrowing their future life options. (p. 6)

Quinn et al. (1974) explained respondents' tendency to "halo" their job satisfaction by suggesting that job satisfaction is closely related to one's self-esteem, which results in ego-defensive behavior in completing job satisfaction surveys (p. 52). Other methods of investigating individuals' job satisfaction are also subject to charges of respondent bias. Herzberg et al.'s (1959) "critical incident" method, in which respondents were asked in an interview setting to tell the most satisfying and dissatisfying aspects of their jobs, has been challenged as a viable method of discerning workers' real feeling

²Seashore, S. E. Job satisfaction as an indicator of quality of employment. Paper prepared for the Symposium on Social Indicators of the Quality of Working Life, Canada Department of Labor, 1973.

about their work. Vroom (1964), for example, noted that satisfactions tend to be attributed to those aspects of work over which one has control, while dissatisfactions are attributed to aspects of work over which one has little or no control. Herzberg (1974, cited in Shafritz and Hyde, 1978) himself conceded the limitations of the critical incident interview procedure:

Assuming that the respondent does have genuine feelings regarding the subject under investigation, are his answers indicative of his feelings; or are they rationalizations, displacements from other factors which are for many reasons less easy to express? (p. 218)

Compounding the confusion in the literature are the limited number of attempts to cross-validate the findings of various measurement approaches with numerous and diverse samples. As Robinson, Athanasiou, and Head (1969) concluded about the psychometric quality of job satisfaction instruments as a whole: "There is a general paucity of cross-validation efforts which tends to cause one to take most validity claims for these [job satisfaction] scales with the proverbial grain of salt" (p. 80). In short, the consensus among job satisfaction authorities "is that the job satisfaction attitudes survey is a limited purpose instrument" (Barbash, 1976, p. 23), in part because of the measurement problems attendant to the collection of job satisfaction data.

Correlates of Job Satisfaction

Despite the problems of conflicting definition, theory, and measurement approaches associated with the literature of job satisfaction, job satisfaction authorities agree that some independent

variables are correlated with the dependent variable, job satisfaction. Vroom's (1964) review of the literature of job satisfaction is perhaps the most widely cited review, and it, along with other reviews of the literature, suggests a number of job satisfaction correlates, some of which are discussed in this report. Blocker and Richardson's (1963) review summarizes morale research among educators. Again, however, the nature of the job satisfaction literature makes reviewing its findings a tenuous procedure:

The confusion of methodology, hypotheses, samples, analyses . . . makes it very difficult to compare studies or to ascertain which study supports or denies the findings of another. Even reviews of the literature show considerable deviation from one another with regard to the basis for selecting studies and variables of interest. (Robinson et al., 1969, p. 81)

The following discussion of job satisfaction correlates, then, assumes that: (a) The nature of job satisfaction literature indicates the correlates as tentative, not absolute; (b) any list of correlates is arbitrarily constructed; and (c) the job satisfaction of teachers, while sharing satisfaction factors with other workers, may be unique due to the content and context of teachers' work. This discussion of job satisfaction correlates is not exhaustive, and readers desiring a more comprehensive consideration of the subject are referred to the reviews of Brayfield and Crockett (1955), Herzberg et al. (1957), Vroom (1964), and Srivastva et al. (1977).

Wages

Probably no correlate of job satisfaction is more hotly debated than wages. Without citing even a portion of the plethora of studies

investigating this correlate, one may state that the results are conflicting. Part of the difficulty here is that the relationship between job satisfaction and wages gets confused with the relationship between job satisfaction and performance, an entirely different sort of consideration. Brayfield and Crockett's (1955) conclusion that "There is little evidence in the available literature that employee attitudes . . . bear any simple--or, for that matter, appreciable relationship to performance on the job" (p. 408) has been widely quoted and used to support the notion that satisfaction and wages are not related. Whether the relationship exists or not in an individual may be a function of personal values, standard of living, and perceived equity with peers, as well as other factors not enumerated in the literature of job satisfaction. Srivastva et al. (1977), in their review of some 1,073 correlational studies of job satisfaction, stated flatly that the amount of pay one receives is related to one's satisfaction with the job (p. 42). Robinson et al. (1969), though, had noted that higher wages are associated with higher level positions, higher productivity, and greater experience (p. 86). Moreover, higher pay is often associated with positions of authority, power, prestige, and autonomy. The possibility of interaction among these variables is also present in teachers' job satisfaction literature, which is mixed in its findings about the relationship between wages and job satisfaction. Cooke and Kornbluh,³ for example, found no

³Cooke, R., & Kornbluh, H. The general quality of teacher work-life. Outline of a paper presented to the Quality of Teacher Work-life Conference, Ann Arbor, Michigan, March 12, 1980.

relationship while Wickstrom (1971) did. Indeed, whether or not a relationship is found may depend as much on the job satisfaction instrument used in the investigation as on any existence of the relationship. Robinson et al. (1969) well summarized the status of the relationship between wages and job satisfaction in the literature: "The most cautious statement one may make is that many executives and economists may overestimate the significance of wages and that many social scientists may underestimate their importance" (p. 86).

Gender

Personal variables such as gender, age, educational achievement, experience, and region of residence are often considered in studies of job satisfaction. Job satisfaction analysts, however, generally refer to such variables as demographic variables, even though the term demography and its derivatives when correctly used pertain to vital statistics such as population density, births, and so on. To avoid creating confusion over what constitutes a personal or demographic variable, though, this investigator continued the usage of the commonly accepted term, demography, in this report.

Important as demographic variables may be as correlates with job satisfaction, they almost always operate in interaction with other job satisfaction variables (Seashore & Taber, 1975). As a result, studies have reported conflicting results about the relationship of demographic variables with job satisfaction. Gender is no exception.

Researchers suggesting that gender is related to job satisfaction include: Smith et al. (1969), Lawler (1971), Carnall and Wild (1974),

Seashore and Taber (1975), and Shapiro and Stern (1975). Weaver (1977), on the other hand, in his review of job satisfaction research, could find no relationship between gender and job satisfaction when the data were subjected to multiple regression analysis techniques. Golembiewski's (1977) findings concur with those of Weaver (1977). When only sex differences were considered, the data more often than not showed significant differences. When hierarchical rank was taken into account, though, those differences were not found (Golembiewski, 1977). Sauser and York's (1978) research led them to the same conclusion: Sex differences in job satisfaction were not due to the effects of gender per se, but rather to the effects of several variables which covary with gender such as pay and job level. Weaver (1978), in a later study, further explained the variance in the findings of studies exploring the relationship of gender to job satisfaction. He noted that women's assessment of their working conditions tends to be less objective than men's because women may ascribe satisfaction to situations, which if objectively assessed, might better be ascribed dissatisfaction.

Educational researchers, however, have generally concluded that gender is related to teachers' job satisfaction. Higher job satisfaction among women than among men was found by Bishop (1969), Holdaway (1977), Stewart (1972), Wickstrom (1973), and Wurtz (1972). More recently, however, educational researchers have recognized the necessity for sensitive statistical procedures to determine if gender alone accounts for variance in job satisfaction. Murnane and Phillip's (1977) study of 650 midwestern teachers is typical of this line of

thought. Demographic variables, including gender, accounted for a small portion of the variance in job satisfaction. Murnane and Phillips concluded that researchers and practitioners must recognize the multi-faceted aspect of job satisfaction. Cooke and Kornbluh's⁴ findings of no relationship between job satisfaction and gender support Murnane and Phillip's contention. Gender, therefore, while a moderator of job satisfaction, may be best understood only in conjunction with other variables affecting job satisfaction.

Age

The relationship or absence of relationship between age and job satisfaction has, like the relationship between gender and job satisfaction, long been a topic of debate among researchers. As a demographic variable, age probably interacts with other demographic and organizational variables (Seashore & Taber, 1975), though the nature of that interaction has yet to be established. Glenn, Taylor, and Weaver (1977), in a national study of the relationship between age and job satisfaction, concluded that a moderate but positive relationship existed between the two variables, a relationship which might be best explained for males as the result of increased extrinsic rewards associated with aging. Altimus and Tersine's (1973) study of blue collar workers also reported a relationship between age and job satisfaction. Srivastva et al. (1977), however, differentiated between blue collar workers and professional workers in discussing the

⁴Ibid.

relationship between age and job satisfaction. For blue collar and low-level white collar workers in the United States, Srivastva et al. found age positively correlated with satisfaction. For educators, however, Srivastva et al. could find no stable relationship between job satisfaction and age. This finding conflicts with a number of job satisfaction studies of teachers, including those of Probe (1970) and Reinecker (1971). Again, whether or not relationship has been found may be a function of the type of job satisfaction instrument used in the study and the type of statistical analysis applied to the data. The interactive nature of age with other correlates of job satisfaction, however, seems well established in any finding of positive relationship between age and job satisfaction.

Other Correlates

Seashore and Taber (1975) have delineated nine categories of job satisfaction correlates in addition to demography. Five of the categories are useful here in classifying what otherwise appears a confused jumble of research findings.

Macro-environmental factors. Macro-environmental factors are those factors of one's work that may be regarded as non-work related. The community in which one resides has been found to affect one's job satisfaction (Hulin, 1966; Hulin & Blood, 1968; Katzell, Barrett, & Parker, 1961; Kendall, 1963). Differences in culture and nationality also may affect job satisfaction since the factors constituting individuals' job satisfaction may be related to cultural values, norms, and expectations (Blunt, 1973; Form, 1973). Indeed,

Seashore and Taber (1975) noted what many individuals may intuitively sense: "There are speculations, but no adequate evidence, that fluctuations in unemployment rate and general public optimism about future economic conditions impact on job satisfaction" (p. 349). One's personal life experiences (Lortie, 1975), primary life interests (Dubin & Champoux, 1977; Miskel, Glasnapp, & Hatley, 1975), life roles (Burke, 1973), and life pressures (Greabell & Olson, 1973) have also been found to be related to one's job satisfaction. Among educators, teachers' perceived status and support from the community have been shown to be related to teachers' job satisfaction (Cooper, 1977; Holdaway, 1978; Lacy, 1968). Moreover, the relationship between teachers' life satisfaction and job satisfaction appears moderately positive (Anderson, 1977; Cooke & Kornbluh⁵), although the research of Weaver (1978), a national study of white males and females, found only a negligible correlation between life satisfaction and job satisfaction. All in all, it seems apparent that macro-environmental factors, which to date have largely been ignored in studies of job satisfaction, may significantly correlate with job satisfaction.

Occupational characteristics. As one might expect in a literature that to date has been management oriented, occupational characteristics' relationship or lack of relationship to job satisfaction has been the focus of some research studies of job satisfaction. Authorities generally agree that status, prestige, power, and control, as well as other variables associated with specific occupations, are

⁵Ibid.

related to job satisfaction (Seashore & Taber, 1975). The 1977 Quality of Employment Survey, a national study of job satisfaction across occupations, found differences in job satisfaction between workers in various occupations (Quinn & Staines, 1979). Self-employed workers and farmers showed the highest job satisfaction while operatives in nondurable goods manufacturing showed the lowest (Quinn & Staines, 1979, p. 225). Teachers' job satisfaction, although among the higher satisfactions by occupation, was less than that of workers in health services, construction trades, and business and repair services (Quinn & Staines, 1979, pp. 224-226). Furthermore, Weaver (1977), in an analysis of a national survey of workers' job satisfaction, found that the differences in satisfaction between male craftsmen and males in clerical, sales, and professional-technical occupations were independent of other variables. Finally, Cooke and Kornbluh⁶ found that teachers, as an occupational group, reported a lower quality of work-life--a global construct encompassing job satisfaction--than did other workers and were specifically least satisfied with resource adequacy and chances for advancement; both variables that may be regarded as occupationally related. It seems appropriate to conclude from these studies that occupational characteristics are related to job satisfaction.

Organizational environment. Organizational environment or climate has been widely researched by job satisfaction investigators. Authorities have concluded that job satisfaction is related to

⁶Ibid.

organizational environment. Seashore and Taber (1975) concluded:

Variables which have shown evidence as significant organizational antecedents to job satisfaction include structural variables such as size and "shape" (e.g., Carzo and Yanouzas, 1969), complexity, centralization, and formalization (e.g., George and Bishop, 1971); process variables such as pre-vailing decision-making and conflict management styles, team collaboration and role conflict; and such encompassing variables as "organizational climate" (Litwin and Stringer, 1968). (p. 350)

Srivastva et al. (1977) noted that autonomy alone accounted for the organizational factors they found related to job satisfaction. Indeed, other studies of locus of control (Lied & Pritchard, 1976), skill variety (Katz, 1978), self-realization (Chilselli, 1963), and specialization (Shepard, 1973) may be studies of autonomy applied in the work place. Nonetheless, despite the prevalence of the view that organizational environment factors, including autonomy of the worker, are related to job satisfaction if not to performance, Futrell (1976) and Cummings and Berger (1976) have warned of the perils associated with naive acceptance of such conclusions. For example, the tall versus flat organizational structure's relationship to job satisfaction depends in large part on what job one holds within those structures: "High-level executives in tall organizations and lower-level executives in flat organizations experience more satisfaction than their opposites" (Cummings & Berger, 1976, p. 48). Unquestioned acceptance of participative management for the purpose of improving organizational environment may also be ill-advised. Hespe and Wall (1976) concluded that higher levels of worker participation are most appropriate where such participation directly affects the worker's job or job environment. In short, important as organizational

environment may be to job satisfaction, it, like so many of the other correlates of job satisfaction, must be approached with caution.

The job and job environment. By far the most commonly researched aspects of job satisfaction, job dimensions and job environment, have been found to correlate with job satisfaction. The very nature of job satisfaction survey instruments presumes that certain job dimensions and job environments satisfy workers while other dimensions and environments dissatisfy them. Indeed, Brief and Aldag (1975) found significant positive correlations between job dimensions and employee reactions. Without discussing this particularly voluminous and confusing part of the literature of job satisfaction with any specificity, one may state that much of the research attempts to answer the question of which job dimension or job environmental dimension most contributes to job satisfaction. The result has been a lively debate over the relative importance of the so-called intrinsic and extrinsic aspects of work.

Researchers advancing the importance of extrinsic dimensions of work tend to stress the importance of satisfactory income (Smith et al., 1969; Strauss, 1974). On the other hand, job dimensions such as achievement and recognition are regarded as the primary sources of job satisfaction by researchers favoring the importance of intrinsic motivators (Herzberg, 1968). Predictably, some authorities take a more eclectic view by asserting that workers value both intrinsic and extrinsic aspects of their work (Dermer, 1975; McArthur, 1973; Srivastava, 1974).

As discussed in the first chapter of this report, the intrinsic versus extrinsic debate is well represented in the literature of teachers' job satisfaction and contributes to the bewildering variety of factors alleged to correlate with teachers' job satisfaction. Apart from the usually reported and argued findings, however, two correlates are noteworthy. A growing body of evidence suggests that the nature and degree of pupil control in a school building is related to teachers' job satisfaction. Specifically, the congruence between the teachers' ideology of pupil control and their administrator's ideology has been found to be a correlate of teachers' job satisfaction (Willower & Heckert, 1977).⁷ Cooke and Kornbluh's⁸ finding that teachers reporting their students as "difficult" reflected lower job satisfaction than teachers not reporting difficult students may support the contention that pupil control is a factor in teachers' job satisfaction. Finally, however, it must be noted that teachers' relationships with their supervisors are also related to job satisfaction. The common theme running through much of the literature is that, of all the determinants and moderators of teachers' job satisfaction, the school administrator is most important (Holdaway, 1978). Whether that same theme would emerge if all studies were conducted with similar instrumentation is open to question, but the prevalence of the finding is widespread enough to at least suggest that the factor should be considered in any study of teacher work life.

⁷Willower, D. J., & Heckert, J. W. Teacher pupil control ideology--behavior congruence and job satisfaction. Paper prepared for the American Educational Research Association, New York, 1977.

⁸Cooke & Kornbluh. Quality of Teacher Worklife.

The limitations of the literature, however, certainly impinge on drawing definitive conclusions about the relationships of job dimension and job environment to job satisfaction. For example, when social desirability was partialled out of the correlation that Dimarco and Norton (1974) found between personal adjustment and job satisfaction, the correlations were lower. Moreover, those investigators found that individuals with a high need for group approval reported the highest job satisfaction, therefore leading them to question the veracity of job satisfaction data derived from self-report instruments. Then, too, the interaction among diverse variables probably accounts for some of the correlations found to exist:

Correlations between job characteristics and job satisfaction are highly interdependent with demographic, occupational, and personality factors in such a way that any underlying populational constancy is likely to be well hidden or exaggerated by the presence of such uncontrolled variance. (Seashore & Taber, 1975, p. 351)

Nonetheless, Seashore and Taber concluded that "the causes of job satisfaction lie substantially, although far from exclusively, in the immediate realities of jobs and environments, and they lie even more strongly in the perceptions of these realities" (p. 352).

Personal characteristics. Relatively little research has occurred for the purpose of investigating the presence of a relationship between job satisfaction and personal characteristics. Vroom (1960), however, concluded that both job satisfaction and willingness to engage in participative decision making are related to personal characteristics. Seashore and Taber (1975) have postulated that such personal characteristics include demography; personality stability (values, needs, interaction style); abilities; situational personality

(motivations, preferences); perceptions, cognitions, and expectations; and transient personal reactions (e.g., anger, boredom) (p. 347). Although Seashore and Taber concluded that generalizations about the relationship between personal characteristics and job satisfaction are speculative due to scant numbers of research projects devoted to the topic, they suggested that such characteristics may be useful predictors of job satisfaction and urged, therefore, additional research. Of course, the need fulfillment aspect of personal characteristics has received much attention from researchers and motivational theorists. The competence motive (White, 1959), the achievement motive (Atkinson, 1964; McClelland, 1961), Herzberg et al.'s (1959) motivators, Maslow's (1954) hierarchy, and Cofer and Appley's (1964) equilibrium model have served as the focus of numerous research studies. Few investigators, however, consider personal reactions such as anger and boredom, and personal characteristics such as self-concept. The few who have conducted investigations into these aspects of personal reactions and characteristics have not found strong correlations with job satisfaction (e.g., O'Reilly & Roberts, 1975; Orpen, 1974).

Educational researchers, on the other hand, have found moderate correlations to exist between certain personal characteristics and job satisfaction. Mabry (1974) reported that job satisfaction for teachers was correlated with personality type. In a test of Getzels and Guba's (1957) proposition that job satisfaction depends on the congruence between institutional requirements and individual need dispositions, Gosine and Keith (1970) noted that an important

correlate of job satisfaction was a teacher's desire for independence, or in the terminology of Srivastva et al. (1977), desire for autonomy. Wurtz (1972) suggested that one is more satisfied with his or her teaching position if the discrepancy between one's self-ideal and actual self-concept is small. Related to Wurtz's finding, however, was the conclusion drawn by Mermoud (1976): Teachers with high self-concepts soon become dissatisfied with schools with low quality working climates. Conversely, teachers with low self-concepts may be quite satisfied working in low quality working climates but dissatisfied with working in high quality working climates. Moreover, teachers' mental health may be related to their job satisfaction. Gechman and Wiener (1975), in their study of 54 female elementary school teachers, confirmed the contention of Bower (1975) that mental health is positively correlated with job satisfaction. Anand (1977) concluded that neuroticism was negatively correlated with teachers' job satisfaction, while for 30% of the teachers in the study, extraversion was correlated with job satisfaction. Again, however, it must be stated that measurement artifacts, limited samples, and inadequate conceptualizations of job satisfaction as a construct render these findings as tentative rather than definitive. Indeed, the current popularity of contingency theory in management, leadership, and communication theory and research is increasingly affecting the literature of job satisfaction. Whether any single personal characteristic or combination of characteristics is related to job satisfaction or whether any of the other categories of job satisfaction correlates is actually related to job satisfaction may be a function of situational

variables for which researchers as yet have not developed adequate conceptual models or measurement instruments.

Job Satisfaction as an Independent Variable

Nord (1977), in his review of the controversies inherent in the literature of job satisfaction, charged that the interests of management have governed the choices of variables in job satisfaction studies. Rather than including job satisfaction as an independent variable in studies for the purposes of investigating the contribution of job satisfaction to an individual's well-being (e.g., "self-actualization, organizational democracy, feelings of self-control and self-worth, equity and justice" [Nord, 1977, p. 1028]), researchers have focused their attention on variables in the interest of management (e.g., "reducing turnover and absenteeism, increasing productivity, and work-involvement, and overcoming 'resistance to change'" [Nord, 1977, p. 1028]). The point here is not which of the two views is correct in a moral sense, but rather that the choice of variables for research studies may affect the way persons conceptualize job satisfaction as a construct. Certainly, the choice of variables has influenced the general direction or tone of the literature of job satisfaction. The orientation toward the interests of management is clearly evident in the literature of job satisfaction and would seem to be present largely as a function of the question, "How can job satisfaction benefit the organization?"

Again without delving into the morass of conflicting findings of job satisfaction's relationship with various dependent variables, one

may conclude that relatively few correlates can be regarded as "established." They include performance, absence from work, and job turnover. Other dependent variables show promise as correlates of job satisfaction, but the small number of studies investigating them renders their findings tentative.

Performance

Consensus among job satisfaction authorities on the effect of job satisfaction on performance has closely followed the conclusions of two reviews of job satisfaction research: Brayfield and Crockett (1955), a study which resulted in the rather pessimistic view that productivity did not necessarily result from job satisfaction; and Vroom (1964), a work which noted positive correlations between the variables in 20 of 23 cases with a median correlation of only +.14 (p. 187). Contemporary researchers, though, have begun to operate on the suspicion that earlier conclusions that there was no relationship between job satisfaction and productivity may have been premature (Lawler & Porter, 1967). Accordingly, Srivastva et al. (1977) found positive correlations between satisfaction and performance in their review of over 1,000 correlational job satisfaction studies. Common sense would seem to suggest that the relationship exists but that its exact nature and its detection remain elusive. For example, is job satisfaction the cause of productivity as the human relationist school (Herzberg et al., 1959) suggests? Or is job satisfaction the consequence of performance as the contingency school (Lawler & Porter, 1967) suggests? Indeed, is job satisfaction a concomitant of

productivity only under specific conditions (Triandis, 1959)? Then, too, what would be the nature of the relationship if job related factors affecting the measurement of satisfaction--such as pressure to conform to group norms, consequences of truthful responses, penalty for superior performance, and instrumentality of rewards--were partialled out of the data? Unfortunately, large multivariate studies are noticeably absent on this topic. Likewise absent is the proposition that the relationship may be moderated by respondents' occupations. One can scarcely expect to find a relationship among workers whose productivity is determined by the relative degree of automation in the machines on which they work. Likewise, what may effect performance improvement for professional workers and skilled laborers may differ from that which may affect other workers (Portigal, 1976).

Thus, some contemporary theorists and researchers believe some relationship exists between performance and job satisfaction, and they would appear to be closing some of the conceptual gaps. Porter and Lawler (1968), for example, proposed that job satisfaction is related to performance when performance and reward are closely dependent on one another. Carlson (1969) suggested that job satisfaction is related to performance when one's ability levels are broadly appropriate for the job he or she holds. Doll and Gunderson (1969) noted that if the worker has voluntarily opted for his or her job, a relationship between job satisfaction and performance may be found. These hypotheses, then, represent promising refinements in propositions about the relationship between job satisfaction as an independent variable and its dependent variable, performance.

Absence and Turnover

Due to the multi-dimensional nature of job satisfaction as a construct, it is doubtful that any one factor in isolation from other factors can induce a worker to be habitually absent from work or to quit his or her job. Nonetheless, job satisfaction authorities have generally agreed that two consequences of job dissatisfaction are increased absence and turnover (Robinson et al., 1969). Despite charges to the contrary by a relatively small group of researchers and theorists (Ilgen & Hollenback, 1977; Mobley, Griffeth, Hand, & Meglino, 1979; Nicholson, Brown, & Chadwick-Jones, 1976), agreement on this topic among job satisfaction authorities closely corresponds with Gilmer and Deci's (1977) conclusion:

Employees who are not satisfied with their jobs are more likely than satisfied employees to withdraw from the organization--either temporarily as in the case of absenteeism or permanently as in the case of turnover. (p. 229)

Other Dependent Variables

A small number of intriguing studies into the effects of job satisfaction and dissatisfaction on a diverse set of dependent variables reveals a field of inquiry worthy of further research. Vroom (1964) concluded that job dissatisfaction was related to accidents on the job. In addition in what would seem an obvious fact of life and a phenomenon generally ignored in the literature, Purrington and Jones (1970) reported that high job dissatisfaction, along with high risk taking propensity, was related to Florida teachers' decision to strike. Seashore and Taber (1975) have summarized a number of

research studies with job satisfaction or dissatisfaction as the independent variable:

1. Quinn & Mangione (1973) report job dissatisfaction to be significantly correlated with (1) life dissatisfaction, (2) low self-esteem, (3) depression, (4) psychosomatic illness symptoms, (5) work-related fatigue, and (6) participation in off-job recreational, political, and religious organizations. . . . Significant correlations are also reported for outcomes independently measured such as (1) work-related injury and illness rates, and (2) supervisory ratings of productivity and quality of work performance . . .

2. Andrews and Withey (1974) report from a national sample of adults that job satisfaction has a significant role in overall life satisfaction even after removal of variance redundancy with other predictors . . .

3. Sheppard and Herrick (1972) report associations between job dissatisfaction and extremist political voting behavior.

4. French and Caplan (1972) [cited in Marrow, 1972] report significant correlations between job dissatisfaction and an index of physiological heart disease risk factors.

5. Mangione and Quinn (1973) report correlations between job dissatisfaction and (1) work-related use of self-narcotizing drugs and (2) an index of on-job destructive behaviors including theft, sabotage, and the like. (p. 360)

Other studies include Kornhauser's (1965) study of mental health among blue collar workers, in which he found job satisfaction as an important mediating factor. Duke University's study of aging (Palmore, cited in Palmore & Jeffers, 1971) reported that having satisfying work to do later in life is related to longevity of life. Finally, among teachers, Cooke and Kornbluh⁹ reported that job satisfaction was moderately positively correlated with life satisfaction. Thus, as Seashore and Taber (1975) suggested, more research effort should

⁹Ibid.

be expended investigating the consequences of job satisfaction and dissatisfaction in an attempt to verify the existence of reported relationships in which job satisfaction is the independent variable.

Summary of Job Satisfaction Research

The following statements thus characterize the literature of job satisfaction:

1. It manifests major unexplained variance.
2. It lacks a universally accepted theory, definition, and technical vocabulary.
3. It appears to deal with a construct that is complex, multifaceted, and which varies in duration and factor composition from individual to individual, if not from culture to culture.
4. It suffers from method-result criticism, largely because of its dependence on self-report questionnaires and the measurement artifacts sometimes associated with them.
5. It reflects a sort of guarded acceptance of the following variables as correlates of job satisfaction--correlates which probably interact with other variables in mediating job satisfaction, or in the case of job satisfaction as an independent variable, its consequences: (a) wages; (b) demographic variables; (c) macro-environmental factors, such as the community in which one resides; (d) occupational characteristics, such as limited promotion opportunities for teachers; (e) organizational environment, such as the degree of autonomy granted a worker on the job; (f) job and job environment, such as recognition and achievement possible with the

job; (g) personal characteristics; (h) performance, but only under specific circumstances in ways generally not understood; (i) absence and turnover; and (j) other dependent variables, such as job safety and work-related illness.

6. It badly needs a comprehensive descriptive theory and sophisticated, large scale multivariate validation of that theory before much more can be learned about job satisfaction and its function in the world of work.

7. It must reflect research methods other than self-report surveys. Where surveys are used, they must be of high quality, demonstrating validity and reliability.

The Need Satisfaction Questionnaire (NSQ)

Porter developed the Need Satisfaction Questionnaire (NSQ) in 1961 to test his hypothesis that need satisfactions among managers differed as a function of the organizational level at which they worked. Building on the proposition of Argyris (1957), that the higher an individual is on the organizational ladder, the more able he will be to satisfy what Maslow (1954) called higher order needs, Porter specifically desired to know if differences in perceived need fulfillment existed between bottom and middle management workers. Accordingly, Porter operationalized Maslow's need categories into the NSQ instrument in an attempt to measure perceived need deficiencies. Managers were asked to respond to 13 items in three ways:

- (a) How much of the characteristic is there now connected with your management position? (b) How much of the characteristic do you think should be connected with your

management position? (c) How important is this position characteristic to you? (Porter, 1961, p. 3)

Since the importance items rarely have been analyzed (Herman & Hulin, 1973), the questionnaire has been generally administered using only the "Is now" and "Should be" scales.

The item content of the NSQ differs slightly from Maslow's five need categories. Maslow's lowest order need, physiological, was omitted from the instrument, and autonomy was included as an independent category between esteem and self-actualization. Maslow had included autonomy in his esteem category. Therefore, the five need categories on the NSQ are: security, social, esteem, autonomy, and self-actualization. The difference between one's "Is now" and "Should be" scores is regarded as one's need deficiency.

The NSQ enjoyed considerable popularity among researchers and industrial psychologists during the 1960's and more recently has been used by educational researchers (e.g., Birada, 1978; Trusty & Sergio-vanni, 1966).

Maslow's Need Theory

Without examining this well-known theory in any great detail (see Wahba & Bridwell, 1976, for a more complete discussion), suffice it to state that the theory encompasses human motives, the classified needs--and human motivation, the propositions of how these needs are related to human behavior. Maslow's uniqueness, however, stems most from his assertion that human needs are ordered in a hierarchy of prepotency and therefore order of emergence: The lowest category

needs emerge first and must be satisfied before higher order needs can emerge. An individual deprived of physiological satisfaction, for example, adequate shelter, will not be aware of or concerned about satisfying a higher order need, say self-esteem, until the physiological need has been satisfied. Maslow suggested that persons move up the hierarchy of needs as they progress through life. As individuals' physiological and security needs are met, they accordingly progress to the needs of belongingness (social needs), esteem, and self-actualization:

At once other (and higher) needs emerge and these, rather than physiological hungers dominate the organism. And when these in turn are satisfied, again new (and still higher) needs emerge, and so on. That is what we mean by saying that the basic human needs are organized into a hierarchy of relative prepotency. (Maslow, 1954, p. 83)

According to Maslow (1970), the needs are instinctive and operative across nationalities and cultures.

As a theory of motivation, the concept is clear enough: Only deprived needs motivate individuals. If the deprivation is strong enough, it will dominate, even obsess an individual (Maslow, 1970). The result, according to Maslow, is a cycle of behavior following the order of: deprivation, dominance, gratification, activation. Activation refers to the ultimate state in the Maslow schema, self-actualization. The self-actualized person no longer is constrained to heed the beck and call of the other lower needs because they have been satisfied and are therefore no longer prepotent. Instead, the individual is free to become all he or she may wish to become as a person. Maslow found self-actualized persons, therefore, to display

admirable behaviors:

Self-actualizing people have deeper and more profound interpersonal relations than any other adults. They are capable of more fusion, greater love, more perfect identification, more obliteration of the ego boundaries than other people would consider possible. (Maslow, 1954, p. 218)

That Maslow (1965) valued self-actualization as a worthy human goal is thus understandable given the nature of his self-actualized individual.

Although Maslow's theory was originally developed as a general theory of motivation, it was quickly accepted by social scientists and industrial psychologists interested in improving worker motivation and satisfaction. Maslow's influence has been profound in organizational psychology and management, affecting the writings of McGregor (1960), Argyris (1964), Herzberg (1966), and Alderfer (1969) to mention but a few of the better known management theorists. The theory's contribution to management theory was summarized by Wahba and Bridwell (1976):

Since Maslow first published his theory 30 years ago, it has become one of the most popular theories of motivation in the field of management and organizational behavior literature . . . and has influenced . . . many prominent authors in the field of management and organizational behavior. (p. 212)

Lack of validation. In what has to be one of the most remarkable aspects of industrial psychology and management, Maslow's theory has enjoyed widespread acceptance and popularity despite the fact that it has "received little clear and consistent support from the available research findings" (Wahba & Bridwell, 1976, p. 233). Indeed, as Wahba and Bridwell (1976) stated:

Some of Maslow's propositions are totally rejected, while others receive mixed and questionable support at best. The validity of Maslow's Need Classification scheme is not established, although deficiency and growth needs [physiological, security needs as opposed to affiliation, esteem, and self-actualization needs] may form some kind of hierarchy. Again, this two-level hierarchy is not always operative, nor is it based upon the domination or gratification concepts. (p. 233)

In short, Maslow's theory is conceptually attractive but empirically unsupported (Cofer & Apply, 1964; Filley & House, 1969; Hall & Nougaim, 1968).

Moreover, some theorists challenge the very assumptions on which need satisfaction models are based. Miller (1978) asked the question begged by the very proposition of the existence of needs:

Why postulate the existence of needs? (p. 27) No evidence for the existence of any motivational state or need has ever been presented that cannot more parsimoniously be explained as the simple outcome of a direct cause. Maslow's (1943) explanation of the hierarchy, physiological to self-actualization ('the lower need is the most prepotent goal that will monopolize consciousness and will tend to organize the recruitment of various capacities of the organism'), can be more parsimoniously stated: "Given a set of circumstances in which a person has been deprived of food and of personal attention, he is more likely to behave in a manner to obtain food than personal attention." An external cause, the environmental set of events, is present and a behavior results. There is no reason to assert the presence of an internal need. (p. 29)

Salancik and Pfeffer (1977) questioned numerous aspects of need satisfaction models of motivation:

1. According to need-satisfaction models, when the external environment is incompatible with an individual's needs, the person is doomed to dissatisfaction . . . since need models assume that individuals react to external realities in the context of relatively unchanging needs. . . . (p. 440)

2. Even the presumably basic human needs such as hunger, thirst, and sex are, in part, socially conditioned,

as is evidenced from the research on obesity and sexual dysfunction. . . . (p. 441)

3. Precision in definition is lost as the [Maslow's] need hierarchy is ascended. Self-actualization is a concept so poorly articulated that there continue to be debates about its essential properties. . . . (p. 442)

4. Rather than being an abstraction with some psychological reality, needs can be considered as constructs invented by individuals and their observers as a means of organizing their thinking and reactions to the environment. (p. 443)

Thus, Maslow's need theory, although empirically unsupported, has gained wide acceptance as a motivational model. When it has been used in a survey instrument such as the NSQ, it has been used to infer persons' job satisfaction. The assumption that an unfulfilled need results in dissatisfaction has enjoyed particularly widespread acceptance in the literature of job satisfaction, if not in society at large.

Validation of the Need Satisfaction Questionnaire

Studies attempting to validate the NSQ as a measure of need deficiency and job satisfaction tend to take two forms: factor analytic studies and correlational studies. Factor analytic inquiries begin with the assumption that if the NSQ is actually measuring Maslow's five needs (as modified by Porter, 1961), those five factors should emerge as separate and distinct entities when NSQ data are analyzed. Results, however, have not been encouraging. Of the five factor analytic studies of the NSQ which Wahba and Bridwell (1976) reviewed (Herman & Hulin, 1973; Payne, 1970; Roberts, Walter, & Miles, 1971; Wahba & Clemence, 1973; Waters & Roach, 1973), none found

Maslow's five need categories to be independent factors. Clay, however, in a 1977 study of community college instructors in North Carolina, found five distinct factors, but his scales differed from those of the NSQ's since he modified them into a semantic differential format. Clay's study, though, is important because it raises the possibility that measurement artifacts may be more responsible for the failure of factor analytic studies to reveal independent Maslow factors than any conceptual weakness in the theory. It must be recorded, however, that four other studies using Maslow-type instruments other than the NSQ also failed to detect distinct Maslow factors (Alderfer, 1966, 1972; Huizinga, 1970; Schneider & Alderfer, 1973).

Wahba and Bridwell (1976) questioned the quality of the NSQ:

As a device for testing Maslow, the NSQ has several weaknesses. First, it contains only 13 to 15 items mostly dealing with Maslow's two highest need categories. Second, the NSQ originally included no reliability or validity figures; later Porter and Lawler (1968) provided some data showing discriminant validation of the NSQ. Third, the NSQ suffers from a number of methodological problems particularly due to response bias. Subjects filling the instrument give the fulfillment and importance ranking almost simultaneously. Such a procedure produces a response error by showing a high correlation between fulfillment and importance because subjects tend to assign the same value to fulfillment and importance (Alderfer, 1972). Fourth, Lawler and Suttle (1972) pointed out that the correlations among the NSQ items in the same category were not high and that all items correlated with each other. As a result the NSQ may not accurately reflect Maslow's need classification scheme. Fifth, Wall and Payne (1973) identified and empirically tested the effects of two limitations of deficiencies scores. Logically, a fulfillment rating of 5 permits a deficiency score range of -4 to 2 and arithmetically increases the range by 3 to -1 to 5. Psychologically, respondents were quick to report job deficiencies but rarely reported excess satisfaction. (pp. 215-218)

Indeed, questions about the quality of the NSQ as a measurement instrument are particularly discomfoting in validation studies in which the NSQ is correlated in various ways with other job satisfaction measures. For example, Waters and Roach (1976) compared the Job Descriptive Index or JDI (Smith et al., 1969) with the NSQ in a study of higher-level line managers, lower-level line managers, and managerial-level technical/specialty personnel in a national insurance company. They concluded:

Using the Job Descriptive Index scales, relationships between managerial role and satisfaction were obtained on two functions, while using the Porter need-deficiency scales resulted in no significant discrimination among the managerial level groups. (p. 1098)

Waters and Roach's conclusion paralleled that of Herman and Hulin (1973) who also compared the NSQ and JDI:

The managerial level-job satisfaction hypothesis failed to replicate on the need satisfaction scales but found support on the JDI variables. . . . There were no significant differences between managerial groups measured by the Porter questionnaire. (p. 122)

Herman and Hulin closed their validation study with the following assessment of research employing the NSQ instrument: "The lack of convergence and failure to replicate casts doubt on the conclusions about job satisfaction drawn from the research on the Porter Need Satisfaction Questionnaire" (p. 123).

In fairness to Porter, however, it must be stated that he did not intend the NSQ to be a highly developed, well validated, highly reliable measure of need deficiency or job satisfaction. Rather, he intended the instrument to test his hypothesis about Maslow's need

hierarchies in a work environment.¹⁰ That the questionnaire has been accepted as a legitimate measurement instrument is the fault of an accepting group of researchers, who, had they been more careful in their analysis of the instrument and Porter's intended uses of it, could have avoided the questionable sorts of findings sometimes associated with the use of the NSQ.

Finally, however, at least one researcher claimed the NSQ possessed concurrent validity with the JDI. Employing Campbell and Fiske's (1959) criteria for determining convergent and discriminant validities (refinements of the more general term, concurrent validity), Evans (1969) found support for concurrent validity. In each of the two samples investigated in the study, workers in a public utility ($n = 311$) and nurses in a general hospital ($n = 88$), correlations between pay and supervision scales were substantial (.31 to .60). However, Evans' scale was a modification of Porter's. Language was simplified, and instead of asking "How much should there be?", Evans' second question for each item was "How important is it to you?" (p. 102). Moreover, the pay question was included only in Porter's first study using the NSQ (1961). Other NSQ studies, including Porter's later work, omitted the item. Whether these changes could be expected to produce the results Evans derived is problematic and left to the judgment of the reader. Relative to the Minnesota Satisfaction Questionnaire (MSQ), though, Gillet and Schwab (1975) reported higher convergent and discriminant validities between the MSQ and JDI than

¹⁰Porter, L. Personal telephone conversation, April 10, 1980.

Evans reported between the JDI and NSQ.

All in all, it seems clear that considerable doubt about the appropriateness of the NSQ as a measurement of employees' work satisfaction is warranted. Robinson et al. (1969) suggested that the NSQ is more "heuristic than validity-oriented" (p. 149). Accordingly, the NSQ lacks the sort of detailed developmental information one expects in psychometric measures: procedures used to establish content validity; criteria for item selection and retention; estimates of internal consistency, if not reliability over time; and evidence of construct validity. That researchers have widely used the instrument in the absence of such information must chronicle the dubious quality of some of the literature of job satisfaction.

The Minnesota Satisfaction Questionnaire (MSQ)

The Industrial Relations Center at the University of Minnesota directed a series of studies called the Minnesota Studies in Vocational Rehabilitation to investigate the general problem of adjustment to work. The studies, which came to be known as the Work Adjustment Project, began in 1957 and were supported in part by a research grant from the Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, Washington, D.C. As noted in the test manual for the MSQ:

These studies . . . have two objectives: the development of diagnostic tools for assessing the work adjustment "potential" of applicants for vocational rehabilitation, and the evaluation of work adjustment outcomes. These primary goals are embodied in a conceptual framework for research, entitled the Theory of Work Adjustment. (Weiss, Dawis, England, & Lofquist, 1967, p. v)

Thus, the MSQ is only one component of the measurement strategies used to test the theory, and in particular, workers' adjustments to their jobs. Other instrumentation includes:

The Minnesota Satisfactoriness Scales (MSS), to measure how satisfactorily individuals perform on their jobs (Weiss, Dawis, Lofquist, and England, 1966);

The Minnesota Importance Questionnaire (MIQ), to measure individuals' vocational needs (Weiss, Dawis, England, and Lofquist, 1964; Weiss, Dawis, Lofquist, and England, 1966); and

The Minnesota Job Description Questionnaire (MJDQ), to measure the kinds of reinforcers available in specific jobs and the levels at which they exist (Borgen, Weiss, Tinsley, Dawis, and Lofquist, 1968). Using the MJDQ, Occupational Reinforcer Patterns (ORPs) have been developed for a substantial number of jobs. (Dawis, Lofquist, & Weiss, 1968, p. 1)

The Theory of Work Adjustment

The Theory of Work Adjustment addresses the relationship the worker has with his or her job. Dawis et al. (1968) suggest that a relationship exists only when the worker and his environment, here the work environment, mutually benefit from the interaction of the two. The concept, therefore, is reminiscent of the currency of exchange concept, with work or services rendered in this case the currency of exchange.

The specific term the authors of the Theory of Work Adjustment use to describe the relationship between the worker and the job is "correspondence":

Correspondence, then, is a relationship in which the individual and the environment are corresponsive, i.e., mutually responsive. The individual brings into this relationship his requirements of the environment; the environment

likewise has its requirements of the individual. In order to survive, i.e., exist, in an environment, the individual must achieve some degree of correspondence. (Dawis et al., 1968, p. 3)

Inherent in the Theory of Work Adjustment and its advocacy of the essential work requirement, correspondence, then, is need theory. Like the hierarchy of needs advocated by Maslow (1954), later operationalized in the NSQ, the Theory of Work Adjustment is a need theory. Indeed, the MSQ was designed "to measure the satisfaction of individuals' needs through their jobs" (Dawis et al., 1968, p. 1). Need theory is also apparent in the basic assumption of the Theory of Work Adjustment: "Each individual seeks to achieve and maintain correspondence with his environment. Achieving and maintaining correspondence with the environment are basic motives of human behavior" (Dawis et al., 1968, p. 3). Thus, correspondence is achieved when the needs of the individual and the environment, here the work environment, are both met.

Without detailing the specifics of the Theory of Work Adjustment to any great length (see Dawis et al., 1968, for a complete discussion of the topic), suffice it to state that the theory incorporates the idea mentioned earlier (Seashore & Taber, 1975) that workers seek to accommodate themselves to their work environments. This process of accommodation is called work adjustment, "a continuous and dynamic process by which the individual seeks to achieve and maintain correspondence with his work environment" (Dawis et al., 1968, p. 5).

According to Dawis et al. (1968), indicators of work adjustment or correspondence with the work environment include: tenure in the

job (the greater the correspondence, the longer the tenure), satisfactoriness (the satisfactoriness of a worker's output to his or her employer), and satisfaction (job satisfaction perceived by the worker). Therefore, the Theory of Work Adjustment posits that job satisfaction, along with the other two indicators, can be used to determine how well an individual has adjusted to his or her work environment. Two indicators of work adjustment are thus external--tenure and satisfactoriness--and one indicator is internal--job satisfaction. Dawis et al. (1968) incorporate the indicators into a basic conclusion about workers' correspondence or relationship with their jobs:

The levels of satisfactoriness and satisfaction observed for a group of individuals with substantial tenure in a specific work environment establish the limits of satisfactoriness and satisfaction from which tenure can be predicted for other individuals. (p. 7)

The theory thus advances the following propositions relative to job satisfaction:

Proposition I. An individual's work adjustment at any point in time is indicated by his concurrent levels of satisfactoriness and satisfaction.

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

Proposition IV. Satisfaction moderates the functional relationship between satisfactoriness and ability-requirement correspondence.

Proposition VII. The probability of an individual voluntarily leaving the work environment is inversely related to his satisfaction. (Dawis et al., 1968, pp. 10-11)

Work adjustment in individuals takes two forms: the active mode, in which the individual changes the environment to fit his or her requirements, and the reactive mode, in which the individual changes himself (Lofquist & Dawis, 1972). To best understand workers' work adjustment, Weiss et al. (1967) suggest that questionnaire indicators and external indicators such as tenure be studied by individual:

Individualized measurement is useful because two individuals may express the same amount of general satisfaction with their work but for entirely different reasons. For example, one individual may be satisfied with his work because it allows him to satisfy his needs for independence and security. Another person who is equally satisfied with his work is able to satisfy his needs for creativity, ability utilization, and achievement. Research has shown that there are individual differences in vocational needs of people. Research has also shown that there are individual differences in jobs with respect to the reinforcers available for the satisfaction of needs. It is, therefore, likely that people find different satisfactions in work, and to understand these differences, it is useful to measure satisfaction with the specific aspects of work and work environments. Such understanding should contribute to the effectiveness of vocational planning with individual clients. (p. vi)

Thus, the MSQ was intended, at least in part, to function as an attitudinal indicator useful in vocational counseling for individuals. The Work Adjustment Theory's emphasis on the individual's work life is unique in the literature of job satisfaction.

Validation of the theory. The Theory of Work Adjustment has a unique place among job satisfaction theories. Although it has been subjected to numerous research studies (see for example, Betz, Weiss, Dawis, England, & Lofquist, Seven Years of Research on Work Adjustment, 1966), the theory has not been widely promulgated nor cited.

Without examining these studies in any detail, it may be stated that the research is promising but preliminary in its support of the theory. As Zedeck (cited in Buros, 1978) stated:

In summary, the data analyses, results, and research underlying the Work Adjustment Project . . . are generally impressive and suggest the potential for valuable contribution to the study, understanding, and prediction of work adjustment. But the work has not been completed. Only the test of time and future research will judge its utility adequately. (p. 1675)

Description of the Minnesota
Satisfaction Questionnaire (MSQ)

The MSQ is available in short and long forms. The short form consists of 20 items, one from each of the long form's 20 scales, and yields three satisfaction scores: Intrinsic, Extrinsic, and General Satisfaction. The long form employed in this study offers 100 questions with satisfaction information reported on 20 subscales and one Overall Satisfaction scale. The 20 scales are: (a) Ability Utilization, (b) Achievement, (c) Activity, (d) Advancement, (e) Authority, (f) Company Policies and Practices, (g) Compensation, (h) Co-workers, (i) Creativity, (j) Independence, (k) Moral Values, (l) Recognition, (m) Responsibility, (n) Security, (o) Social Service, (p) Social Status, (q) Supervision--human relations, (r) Supervision--technical, (s) Variety, and (t) Working Conditions. Responses are recorded on a 5-point scale with low satisfaction receiving lower numerical values than higher satisfaction.

As Albright (cited in Buros, 1972) noted, one of the serious weaknesses of the literature associated with the MSQ is the omission

from the test manual of information about how the 20 scales were developed. In the Measurement of Employment Satisfaction (Carlson, Davis, England, & Lofquist, 1962), however, development of the first version of the MSQ is detailed. Based on the Hoppock Job Satisfaction Blank (1935), the Industrial Relations Center's Employee Attitude Scale, and 22 experimental job-attitude questions, the MSQ's 80 item pool generated data which were subjected to factor analysis and cluster analysis. Results suggested that further refinement of the scales was needed. Factor analysis of the refined scales revealed that more than one factor emerged for six of the previous eight groups, an improvement the developers of the test judged noteworthy enough to merit publication of the MSQ, a satisfaction instrument of 80 items. Since then, the MSQ has undergone considerable revision, both in item content and in scale weightings.

The MSQ offers extensive norm tables for various occupations. Whether norms are useful in any real way for a construct as volatile and transient as job satisfaction is a question open to debate, but the inclusion of norm tables for diverse occupations is a practice other job satisfaction instrument developers would do well to emulate. Internal consistency coefficients computed with the Hoyt analysis of variance method ranged from:

A high of .97 on Ability Utilization (for both stenographers and typists) and on Working Conditions (for social workers) to a low of .59 on Variety (for buyers). The median Hoyt reliability coefficients ranged from .93 for Advancement and Recognition to .78 for Responsibility. Of the 567 Hoyt reliability coefficients reported in Section III-B [of the manual] (27 groups with 21 scales each), 83% were .80 or higher and only 2.5% were lower than .70. (Weiss et al., 1967, p. 14)

Again, however, it must be noted that these data are old and thus are best interpreted as general estimates of the MSQ's reliability. That changes in the macro-environment such as standard of living, occupational status, and workers' expectations and aspirations would alter the nature of the occupational satisfaction norms might almost be a given. How such changes in the macro-environment would affect the reliability of the instrument is uncertain, but any differences in reliability would probably be less than any differences in satisfaction levels.

The test manual for the MSQ reports two measures of the MSQ's stability over time periods of 1 week and 1 year:

For a one-week interval, stability coefficients ranged from .66 for Co-workers, to .91 for Working Conditions. Median coefficient (excluding the General Satisfaction scale) was .83. One-week stability coefficient for the General Satisfaction scale was .89. (Weiss et al., 1967, p. 15)

The 1 year test-retest correlations, obtained from data from 115 employed individuals in various occupations, were, of course, lower:

These stability coefficients ranged from .35 for Independence to .71 for Ability Utilization. Median stability coefficient for the 20 scales (excluding General Satisfaction) was .61. Stability coefficient for the General Satisfaction scale for the one-year interval was .70. (Weiss et al., 1967, p. 15)

As reviewers have noted, however, (see Albright, cited in Buros, 1972, and Guion, cited in Buros, 1978), reliability data for the MSQ may be inflated by the nearly identical wording of items within scales:

Homogeneity of scale content was increased through item wording. Some item redundancy results, as with the three items from the Social Service scale in which the respondent is asked to rate his satisfaction with regard to the chance his job provides him "to be of service to others" (item 1),

"to people" (item 21), or "to be of some small service to other people" (item 81). (Albright, cited in Buros, 1972, p. 1493)

Furthermore, Foley (cited in Buros, 1972) stated that the MSQ scales' intents are transparent, leading him to conclude that "voluntary or involuntary faking or dissembling should be relatively easy . . . especially [in] those [situations] in which the respondent is ego-involved in making a desirable score" (p. 1494). If Foley is correct, the MSQ's transparency may accordingly function as a priming artifact, that is, the respondent, upon noting the similarity of items on a given scale, may attempt to mark answers to items in a consistent manner rather than a truthful manner. Priming artifacts, then, could also account for the otherwise impressive reliability data reported for the MSQ.

Validation of the Questionnaire

Theoretical expectations. A major assumption of the Theory of Work Adjustment is that satisfaction is the result of reinforcement for persons with high need levels and that dissatisfaction is the result of a lack of reinforcement. Thus, researchers predicted that the high-need--high-reinforcement groups of workers would express the most satisfaction and that the high-need--low-reinforcement groups would reflect the least job satisfaction (Weiss, Dawis, England, & Lofquist, 1964). The hypothesis was supported for seven of the 16 MSQ scales studied (Weiss et al., 1964). Another study, which used the MSQ general satisfaction score as the dependent variable, also showed some support for the theoretical expectations of the Theory of

Work Adjustment (Weiss, Dawis, England, & Lofquist, 1965). Job satisfaction was found to be a function of the importance of an individual's job satisfaction needs. Although these studies can hardly be regarded as sufficient evidence of the MSQ's construct validity as a satisfaction measure, when taken into consideration with other evidence of construct validity, the studies would appear to have some significance.

Group differences. That individuals' job satisfactions are a function of the occupations they hold is well established (see, for example, Quinn & Staines, 1979). Therefore, an indication of a job satisfaction instrument's construct validity is its ability to differentiate among occupational groups. The MSQ, when administered to individuals in 25 different occupations, resulted in satisfaction scores that differed significantly at the .001 level for all occupational groups (Weiss et al., 1967, p. 18). All 21 scales of the MSQ showed significant differences in means and variances.

Factor structure. Two factors tend to emerge from factor analytic studies of the MSQ--intrinsic satisfaction and extrinsic satisfaction. The principal factor may be either intrinsic or extrinsic satisfaction depending on the occupation. Teachers, according to the test manual, generated data in which the principal factor was intrinsic satisfaction. The inclusion of 20 subscales in the MSQ, however, was justified by one reviewer as follows:

Intercorrelations between many of the scales are quite substantial but low relative to the reliability estimates. In general, they are low enough to indicate some substantial unique variance in the scales, yet high enough to justify adding scales together to form a twenty-first scale

of general job satisfaction. (Guion, cited in Buros, 1978, p. 1679)

If one accepts the theory that job satisfaction as a construct is two-dimensional (e.g., Herzberg et al., 1957), then factor analysis of the MSQ suggests its construct validity. Even if one rejects that theory, however, the fact that the 20 scales of the MSQ may be classified as either intrinsic or extrinsic satisfaction oriented supports the test developers' claim that the MSQ possesses content validity.

Comparison with a criterion measure. Job satisfaction authorities agree that the Job Descriptive Index or JDI (Smith et al., 1969) ranks among the best job satisfaction instruments available. Robinson et al. (1969) in their review of 13 job satisfaction measures (not including the MSQ) concluded that:

The instrument which appears to us to have the best credentials is the Job Description Index. Lengthy, extensive and competent research went into the construction of this instrument, which has been administered to workers at all organization levels on a nationwide basis. (p. 101)

Like the MSQ, the JDI has been employed as a criterion measure of other job satisfaction instruments (e.g., Dunham, Smith, & Blackburn, 1977).

A particularly important validation study of the MSQ, though, was the research of Gillet and Schwab (1975) which established the convergent and discriminant validities of the MSQ with the JDI.

Gillet and Schwab found that:

The four satisfaction scales common to the JDI and MSQ show very high validities when judged against the absolute criteria of Campbell and Fiske's (1959) procedure. The convergent validities of all four scales are statistically significant as specified. In addition the results

completely satisfy the first two discriminant validation criteria and almost completely satisfy the third. (p. 317)

Referring to an earlier study using a similar research design but comparing the JDI with the NSQ (Need Satisfaction Questionnaire), the authors noted that:

The results of the present study are also favorable in a relative sense when compared to the convergent and discriminant validities Evans (1969) obtained in a study of four scales common to the JDI and a goal attainment instrument [the NSQ with a modified scale]. This apparent superiority was expected since there is no published evidence that the goal attainment instrument has received the careful development accorded the MSQ. (p. 317)

Although the only scales common to the JDI and the MSQ were pay, promotion, supervision, and co-workers, Gillet and Schwab concluded that the MSQ compared favorably with the criterion measure, the JDI.

Thus, the MSQ serves as an appropriate choice of a criterion measure of job satisfaction. Like other job satisfaction instruments, it is flawed (transparent items and excessive repetition of similarly worded items, e.g.), but its superiority over other job satisfaction instruments is evident when its development, supportive literature, and comparison to a criterion measure are considered. As Guion (cited in Buros, 1978) observed, the MSQ, like the JDI, "has an underlying rationale, is based on extensive empirical research, provides reliable scores, has evidence of construct validity, and is extensively normed" (p. 1680).

The Quality of Employment Job Satisfaction
Survey (QEJSS)

The most recently developed of the three satisfaction measures included in this study, the QEJSS is a product of the Survey Research Center at the University of Michigan and constitutes one outcome measure of the 1977 Quality of Employment Survey, a national study of working life in America. The 1977 study followed similar studies conducted by the Survey Research Center in 1969 and 1973; all of which were funded by the U.S. Department of Labor. Relative to job satisfaction, the project's goal was "to develop efficient measures of job satisfaction suitable for use with samples of workers in heterogeneous occupations and suitable for use under a variety of conditions of census and research" (Quinn & Staines, 1979, p. 1). The project workers concluded that currently available measures of job satisfaction did not meet this project goal. Some measures were judged as excessively long for the purposes of a national study employing numerous outcome measures. Other measures were regarded as occupationally bound or oriented toward particular segments of American workers, for example white collar, college educated persons. Finally, some measures were judged as inferior psychometric instruments for the purpose of measuring job satisfaction. Thus, a new job satisfaction measure was developed.

The development of the QEJSS differed from that of the NSQ or the MSQ because it was not primarily based on an underlying theoretical concept of work satisfaction or motivation. Rather, the test developers relied on the factor analytic reports of job satisfaction

authorities (Herzberg et al., 1957; Smith et al., 1969; Vroom, 1964) and interviews with workers to guide the creation of the scales. Also unique to the QEJSS was the inclusion of facet-free items, questions that did not relate to any specific aspect of the job but to a global affective response to one's job. Five facet-free items--for example, "If you were free to go into any type of job you wanted, what would your choice be?"--were included in the survey, which also offered 33 facet-specific items. Scores from the Facet-free and Facet-specific scales were combined into one Overall Job Satisfaction score.

The original item pool, then, was derived from job satisfaction studies and the answers that a national sample of workers gave to a question about the "ideal" occupation (Kilpatrick, Cummings, & Jennings, 1964). Quinn and Staines (1979) also reported that additional items were written based on Kahn and Quinn's 1970 study (cited in McLean, 1970) which noted the importance to workers of adequate resources to perform a job well. Although some of the questions are similar to those found in other satisfaction instruments, the combination of them in the QEJSS is unique.

Mangione (1973) detailed the development of the QEJSS. Factor analysis was the primary statistic employed to guide the item toss in the early stages of development. As a result of the first pilot administration of the instrument, the item pool was reduced from 35 to 25 items--25 items that loaded on five factors: comfort, challenge, financial rewards, relations with co-workers, and resource adequacy. Further development led to the addition of the promotion scale and

additional items for the other scales. Cluster analysis of the 1973 national data showed six distinct dimensions of job satisfaction as measured by the instrument. The six factors paralleled the five factors found in the 1969 factor analysis, except, of course, the additional scale--Promotion--loaded on a sixth distinct factor. Thus, the QEJSS is purported by its developers to be factor pure, placing it among the few satisfaction measures supportive of such a claim.

The format of the QEJSS is straightforward enough. The five facet-free items are in a multiple choice arrangement with numerical values on a 5-point scale assigned to them. The assigned values reflect both the intent of the developers to integrate the facet-free questions with the facet-specific questions written on a 4-point scale and to operationalize the developers' judgment about the relative importance of the satisfaction or dissatisfaction associated with each multiple choice item. Facet-free satisfaction is the arithmetic mean of responses to the five questions, even as Facet-specific satisfaction is the mean of responses to its 35 questions. Overall Job Satisfaction is created by transforming the distribution of raw scores for Facet-specific and Facet-free job satisfaction into z scores and taking a mean of the two resultant scores for each respondent. The scores are then multiplied by 100 to eliminate decimal points. The resultant scores are either positive or negative values which can be interpreted as deviations from the national samples' means (1969, 1973, 1977). The Facet-free and Facet-specific scores are equally weighted.

Validation of the QEJSS

In addition to the factor analytic evidence of content validity, the test developers of the QEJSS attempted to determine if the instrument possessed other forms of validity. Mangione (1973) concluded that the QEJSS demonstrated concurrent validity with measures of job tension, depression, and intention to change jobs. Mangione (1973) also asserted that predictive validity was evident in the QEJSS, especially when administered to workers who were "not married, blue collar, women, or workers with low prestige occupations" (p. 101). Construct validity was inferred from the fact that demographic characteristics did not function as predictors of job satisfaction, as Mangione hypothesized, but that facets of work did, in fact, affect one's job satisfaction. That job satisfaction is rooted in facets of the job is the major theoretical foundation of the QEJSS.

Mangione also concluded that the QEJSS demonstrated construct validity by its possessing discriminant validity. When Mangione correlated the earlier form of the QEJSS (called Jobsat '72) with other Quality of Employment measures, he found that correlations between questions dealing with the same content correlated positively and were higher than different content correlations. As Mangione (1973) stated:

Discriminant validity and hence evidence for construct validity is present to the extent that measures tapping the same content area show higher correlations between themselves than they do with measures of different content areas. (p. 119)

In short, the validation of the QEJSS, though limited to research conducted by its developers, is comprehensive, competent, and impressive.

Reliability of the QEJSS

Internal consistency was computed using Guilford's (1954) formula for calculating the reliability of an index consisting of a combination of composite scores. According to Quinn and Staines (1979), this procedure "takes into account both the reliabilities of the components and the correlation between them" (p. 233). Overall consistency was .85 with Facet-free at .77 and Facet-specific at .92. Subscale consistencies ranged from .61 (Relations with Co-workers) to .88 (Resource Adequacy) (Quinn & Staines, 1979, p. 232). No test-retest stability coefficients are available for the 1977 version of the QEJSS, but Mangione (1973) found in a study of 80 workers over a period of 1 year that the correlations on each item of the 1972 version ranged from a low of .32 to a high of .65 with a median correlation of .56---data which Mangione suggested compare favorably with other job satisfaction instruments, especially given the fact that the correlations were computed on items rather than on subscales, as is the practice of most other test writers (p. 61).

Normative Data for the QEJSS

The same reservations about the utility of norms for job satisfaction expressed earlier in this report hold for the norms published for the QEJSS. Nonetheless, the QEJSS norms transcend anything

heretofore available and have received considerable attention in the media because they facilitate trend analysis of job satisfaction. The most recent norms, nationally derived and broken out by occupational groups including teachers, are the products of the 1977 data collection. They differ from the 1969 and 1973 norms and for the first time reflect what other job satisfaction norms have never done, namely, record a decline in job satisfaction for workers across occupational groups. Moreover, the norms are national norms, the sample sizes for which were 1,531, 2,089, and 2,285, with the 1969 sample the smallest and the 1977 sample the largest (Quinn & Staines, 1979, p. 221). Even more recent normative data for teachers, although not reported in z score form, were made available from data collected from southeastern Michigan public school teachers (Cooke & Kornbluh¹¹). Normative data reported in standard z score form allow one easily to determine if a reported satisfaction is above or below the national mean. Quite simply, the format of the QEJSS norms are the standard by which other job satisfaction instruments' norms might well be judged.

Thus, the quality of the QEJSS as a measure of job satisfaction appears high. Certainly, Mangione (1973), who admitted his understandable bias in favor of the QEJSS (p. 141), was convinced of its quality relative to other job satisfaction instruments:

The Jobsat '72 measure of job satisfaction is among the best job satisfaction instruments published today with respect to content validity. The items used in the measure were drawn from several sources including responses

¹¹Cooke & Kornbluh. Quality of Teacher Worklife.

to open-ended questions and previous factor analytic studies. The items were worded and presented in such a manner as to be quickly and easily administered, understandable, and resistant to social desirability response bias. It is the only job satisfaction measure to base its item analysis on a national representative working population. The items load on five factors and show good coefficient alphas of reliability and test-retest reliability. It is the only job satisfaction instrument to measure resource adequacy. It is one of the few satisfaction instruments which combine general overall affect and satisfaction with specific facets of the job. (p. 73)

Indeed, with favorable reports from cross validation studies, the QEJSS may become recognized as a criterion measure of job satisfaction.

Summary

The literature of job satisfaction is voluminous, conceptually diverse, and conflicting in its findings. Central to the lack of consensus among job satisfaction authorities about most aspects of job satisfaction is the absence of a single accepted definition, theory, and technical vocabulary. Moreover, the literature relies almost exclusively on survey research, a method of data collection which has been challenged because of the measurement artifacts associated with it. Accordingly, few correlates of job satisfaction are accepted without question and most are advanced with qualifiers, if not caveats. Used in generating findings about job satisfaction are a number of instruments of varying psychometric quality. It is an established fact that the findings about workers' job satisfaction are functions of the nature and quality of the job satisfaction instruments used to measure workers' job satisfaction. Therefore, it

is important that job satisfaction measures be studied and results reported so that consumers can select measures with care and insight. Three commonly used measures of job satisfaction are the Need Satisfaction Questionnaire (NSQ), the Minnesota Satisfaction Questionnaire (MSQ), and the Quality of Employment Job Satisfaction Survey (QEJSS).

The NSQ is an ad hoc questionnaire about need fulfillment. It lacks accepted psychometric credentials. Although purported to measure Maslow's (1954) need hierarchy, it is doubtful that it does so and thus may be a general measure of job satisfaction only. Its factor structure is suspect, its reliability unreported, its validation negative, its scales fraught with measurement artifacts. In short, it should be used only as a rough measure with which to preliminarily investigate hypotheses regarding Maslow's hierarchy. That it has been widely used to substantiate statements about various occupational groups' need satisfactions or deficiencies is an indication of the quality of research associated with this measure.

The MSQ, on the other hand, may be used as a criterion measure of job satisfaction. Although it is not without liabilities as an indicator, it has an underlying rationale, is well developed, demonstrates adequate content validity and internal consistency, and compares well with the Job Descriptive Index (JDI). It produces job satisfaction information reflecting two factors, intrinsic and extrinsic satisfaction, and 20 scales which, although not distinct factors, intercorrelate low enough so as to suggest unique variance. The MSQ, therefore, stands among the best job satisfaction instruments available.

The QEJSS does not grow out of any particular theory, though its developers' major assumption governing its construction was that satisfaction with work is rooted in facets of the job. Its strength is its factor purity, the result, in part, of the developers' reviewing major factor analytic research in job satisfaction and interviewing workers about ideal characteristics of jobs. Moreover, the inclusion of a facet-free set of items along with the facet-specific set diminishes the chance that the measure may miss some dissatisfaction or satisfaction not covered in the facet-specific questions. On the basis of the research associated with the QEJSS, one may state that the instrument appears promising as a fine measure of job satisfaction. Its acceptance as such, it would seem, requires only cross validation studies comparing it with criterion measures such as the JDI and the MSQ.

CHAPTER III

DESIGN OF THE STUDY

This study was designed to determine whether the Need Satisfaction Questionnaire (NSQ) and the Quality of Employment Job Satisfaction Survey (QEJSS) possess concurrent validity with the Minnesota Satisfaction Questionnaire (MSQ) in measuring the job satisfaction of educators. To recapitulate, the nine questions guiding the development, design, and procedures of this study were:

1. Will the NSQ, MSQ, and QEJSS discriminate public school teachers from public school administrators?
2. Will the NSQ, MSQ, and QEJSS discriminate men from women?
3. Will the NSQ, MSQ, and QEJSS discriminate younger teachers from older teachers?
4. Will the NSQ, MSQ, and QEJSS discriminate inexperienced teachers from experienced teachers?
5. Will the NSQ, MSQ, and QEJSS discriminate among teachers of lower and higher incomes?
6. Will the NSQ, MSQ, and QEJSS discriminate among teachers at the elementary, junior high, and senior high school levels?
7. Will the NSQ, MSQ, and QEJSS discriminate between public and Christian school teachers?
8. Will the scales of the NSQ, MSQ, and QEJSS correlate positively?

9. Do the scales of the NSQ represent independent factors in this sample of educators?

The analytic framework for this study is a replication of Herman and Hulin's (1973) study of managerial satisfactions and organizational roles, in which the Job Descriptive Index (JDI) was compared with the Need Satisfaction Questionnaire (NSQ). This study also replicates in a different population the study of Waters and Roach (1976), which replicated the Herman and Hulin design in a business setting (regional office of a national insurance company) instead of the industrial setting (heavy equipment manufacturing and assembly plant) used in the Herman and Hulin research effort.

Rationale for the Design

Central to the design of this study was the practice of correlating the results of a test with a criterion measure to establish concurrent validity (Cronbach, 1970). As reported by Guion (cited in Buros, 1978), the MSQ's usefulness as a criterion measure of job satisfaction has been established (see Dunham, et al., 1977; Gillet, et al., 1975).

Statistical analyses were conducted on the data in accordance with the method described by Herman and Hulin (1973). Herman and Hulin developed their research design to determine if cumulative research on the relationship between organizational role level and job satisfaction--generally accepted as positive--was a function of results-methods dependency. Since much of the research which led to the conclusion that there is a positive relationship between

organizational level and job satisfaction used the NSQ (e.g., Porter, 1961, 1962, 1963; Porter & Mitchell, 1967) and since the validity of the Porter scales was judged as questionable (see Imparato, 1972; Roberts, Walter, & Miles, 1971; as well as authorities already cited in the review of related literature), the JDI was administered along with the NSQ to check on the validity of the NSQ as a measure of job satisfaction, and thus to determine if the results of studies using the NSQ were not largely dependent on the method (NSQ) used to obtain them, rather than any alleged organizational role level--job satisfaction relationship.

Furthermore, Herman and Hulin (1973) argued that multiple significance tests on the five categories of the NSQ are inappropriate since, when dependent variables covary--as Herman and Hulin assume is true of the NSQ scales, based on examination of the scale development procedures used by Porter--"the significance of the mean differences will be highly overstated by the assumption of independence made in multiple significance tests" (p. 119). Therefore, Herman and Hulin concluded that:

A multivariate analytic procedure that provides an overall significance test as well as individual significance tests on the dependent variables is more appropriate. Moreover, the analysis of variance model is more rigorous than multiple sign tests on means, since it tests hypotheses on between- versus within-group variance, so that group similarities and differences in the domain of interest may be explored more fully. (p. 119)

Analytic procedures employed by Herman and Hulin, therefore, were of three types: discriminant analysis, principal axis factor analysis, multitrait-multimethod correlations. Discriminant analysis

"was used to test the hypothesis of group differences on the dependent variables" (Tatsuoka, 1970, p. 120). The construct validity of the NSQ and the "dimensionality of the Porter items was investigated using principal axis factor analysis, with R communality estimates in the diagonals and varimax and oblimax rotations" (Kaiser, 1970, p. 120). The convergent validity of the JDI and the NSQ was determined with Campbell and Fiske's (1959) multitrait-multimethod correlation matrix method. The three analyses described and conducted by Herman and Hulin, then, were conducted in this present study of educators' job satisfaction. Discriminant function analyses were conducted on the following independent variables: organizational role level, sex, teaching experience, income, teaching role level (elementary, junior high school, senior high school), and school affiliation (public or Christian). These analyses were conducted to determine the presence of group differences and to determine which scales on each of the instruments most accounted for any detected differences.

Estimates of the internal consistency of the NSQ and MSQ¹ were also derived to provide information with which to qualify further conclusions based on the investigator's findings about the relative merit of the NSQ and MSQ instruments as measures of job satisfaction. Estimates of reliability were computed with the Cronbach Alpha

¹Since the Overall Satisfaction scale of the QEJSS discriminated among groups the least effectively of the three instruments and since personnel at the Computer Center at Western Michigan University were unable to calculate the reliability estimate for the QEJSS using Guilford's (1954) formula for a composite score, an estimate of internal consistency for the QEJSS was not derived for this report.

formula (Cronbach, 1970) as made available through the Statistical Package for the Social Sciences (SPSS) at Western Michigan University's Computer Center.

Thus, this investigation into the concurrent validity of the NSQ, MSQ, and QEJSS relied on four analytic procedures: (a) discriminant function analysis to determine if the three measures discriminate among groups and to determine the scales most responsible for any detected differences, (b) multitrait-multimethod correlational analysis to determine if the three instruments possess convergent and discriminant validity and thus concurrent validity, (c) factor analysis of the NSQ to determine if earlier reports of single rather than multiple factors are true for this sample of educators and thus to determine the construct validity of the NSQ, and (d) estimates of internal consistency to provide qualifying information for conclusions about the three instruments' merit as job satisfaction measures.

Sample Selection

Since the primary purpose of this study was to determine the concurrent validity of the MSQ with the NSQ and QEJSS, a nonrandom sample was judged suitable for study. Because of the limited focus of the sample and its nonrandom character, generalization of findings is not advised. Rather findings are best regarded as tentative instead of definitive, thus requiring a more representative sample in a replicated study for securing results appropriate for generalization. For purposes of carefully delimited discussion of the findings, the schools may be regarded as representative of school districts in

middle class, suburban, midwestern neighborhoods reflecting largely traditional American values. Jenison, Hudsonville, and Grandville are also well known for their high religious consciousness and numbers of churches.

Nonpublic school teachers were included in the study for two reasons. First, few job satisfaction studies of teachers consider the nonpublic school teacher, despite the fact that nonpublic schools currently enjoy considerable popularity. Second, it was reasoned that real differences in job satisfaction may exist between public school teachers and nonpublic school teachers. Certainly, a number of conditions of employment differ in the two types of systems. In contrast to the Christian school teachers included in the study, those public school teachers included are unionized, collectively bargain labor contracts, teach students whose parents do not pay school tuition, and are agents of a state governed and funded educational system. Salaries, fringe benefits and retirement programs differ for Christian as compared to public school teachers, as do responsibilities assigned to the teachers. Christian school teachers are more likely to be assigned tasks such as bus driving, student control during lunch periods, and even administration of school buildings' operations--in addition to their teaching. The Christian schools in this study are affiliated with Christian Schools International of Grand Rapids, Michigan, and subscribe to its educational philosophy, which includes religious instruction among its tenets. Teachers are screened, selected, and retained on the basis of their religious beliefs and training as well as on their expertise as

educators. As a result, the faculty and students in the Christian schools tend to be more homogeneous religiously, racially, and culturally than are their counterparts in the public schools. The usefulness of including the Christian school teachers along with public school teachers in the sample should thus be apparent. If differences in job satisfaction between public and Christian school teachers do indeed exist, the most sensitive of the three job satisfaction instruments should detect those differences.

Design of the Research Questionnaire

The three instruments, used by permission of their respective researchers or developers,² were administered as originally designed. No changes were made in the NSQ or the QEJSS. Changes in the MSQ were limited to altering the response descriptors as suggested in the test manual (Weiss et al., 1967) and discussed with a researcher at the Center for Vocational Psychology Research at the University of Minnesota.³ Because the labels "very dissatisfied," "dissatisfied," "neutral," "satisfied," and "very satisfied" produced a ceiling effect in the satisfaction scores, the test developers suggested replacing them with the terms "not satisfied," "only slightly satisfied,"

²Lyman Porter, during a telephone conversation on April 10, 1980, granted permission to use the NSQ. The Industrial Relations Center at the University of Minnesota granted permission by letter on April 7, 1980, upon receipt of royalty fees, to reproduce and use the MSQ. Stanley Seashore of the Institute for Social Research at the University of Michigan granted permission, during a telephone conversation January 21, 1980, to use the QEJSS.

³Telephone conversation with George Henly, March 31, 1980.

"satisfied," "very satisfied," and "extremely satisfied." Results obtained from a group of about 200 individuals using the modified rating scale with the long-form MSQ indicated that scores were symmetrically distributed across the responses' range and that means tended more to the center of the scale (Weiss et al., 1967). Other changes included substituting the word "workers" for the word "men" to try to eliminate sexual stereotyping from the instrument.

The demographics page, which included the independent variables, was developed specifically for this study. Two pilot tests⁴ of the page refined the content and format of the questions. Most variables were included as a result of findings noted in the review of related literature. Some variables were included at the request of persons from the school districts studied.

Section I: Variables

Item 1, school system code. This item facilitated identification of the four school systems in the study and comparisons between public and Christian school teachers.

Item 2, school building code. Used for building breakouts for reports to professional staffs in individual school buildings, this item also made it possible to report job satisfaction levels by school building. Included at the request of the educators in the

⁴Eleven students and the professor from a graduate level measurement course reviewed the first draft of the demographics page on March 17, 1980. Ten students from a graduate school law class reviewed the second draft on March 19, 1980.

study, the variable and its focus on individual work environments for purposes of needs assessment to improve the quality of working life is consistent with recommendations from researchers at the Vocational Research Center at the University of Minnesota who advocate using the MSQ on a building or departmental level if not at an individual worker level (Weiss et al., 1967).

Items 3 and 4, sex and age. As Seashore and Taber (1975) noted, these variables probably moderate job satisfaction but only in interaction with other variables. The purpose of this study was not to determine the nature of the interaction among multiple variables but to determine if the three job satisfaction instruments detect relationships between the variables in similar manner and degree. Therefore, no analyses for interaction among these or other independent variables were conducted since few if any researchers have been able to account for the multiplicity of independent variables affecting job satisfaction. In short, researchers to date have failed to create multivariate research designs and analyses capable of accounting for all independent variables which interact, and which thus affect the dependent variable, job satisfaction.

Item 5, employment position. This item also was requested by the personnel of school districts participating in the study and served to provide information with which to assess the three instruments' discriminatory power. As in the Herman and Hulin (1973) study, the generally accepted research finding that job satisfaction is a function of organizational role level was tested with the three satisfaction measures.

Item 6, years of teaching experience. As noted in the Review of Related Literature, findings are mixed about the nature of the relationship between work experience and job satisfaction. Indeed, as Srivastva et al. (1977) reported, the relationship may be occupation bound and, in the case of educators, difficult to generalize. Nonetheless, since findings about job satisfaction appear to be so closely related to the measure employed in the research effort, the item was included in the study to at least indicate how or if the three measures detected any possible relationship. The current popular opinion among educators suggesting that teachers today are entering career changing or career decision points in their lives also encouraged including the item.

Item 7, spouse's employment status. Few job satisfaction studies of educators investigate economic considerations associated with teaching and the effect those considerations may have upon the employment of the spouses as well as upon other life style considerations. Geiger⁵ estimated that the majority of teachers in Michigan who were married and living with their spouses lived on two incomes. Information about spouses' employment status was regarded as potentially useful in the interpretation of job satisfaction scale scores, particularly those which related to satisfaction with remuneration for teaching, with the life styles associated with or encouraged by teaching itself, and with the salaries paid for teaching.

⁵Keith Geiger, president of the Michigan Education Association, in a personal conversation on March 12, 1980, at the Quality of Teacher Worklife Conference convened at the University of Michigan, Ann Arbor, Michigan.

Item 8, approximate gross income last year. This item served to test the veracity of the alleged correlation between job satisfaction and income and to determine if the three measures generate similar findings. By the very number of items devoted to income and by the number of items devoted to other variables, a satisfaction measure weights the importance of income and other variables to the construct, job satisfaction. The three measures in this study thus placed differing degrees of importance on the income variable in deriving an overall satisfaction score. The NSQ has no income variable per se, but the one question dealing with security has been interpreted by some researchers as a measure of income satisfaction (see Sergiovanni & Starratt, 1979, e.g.). As one of 13 questions, then, the income variable is weighted 7.7%. The MSQ, on the other hand, affords income one scale out of 20 for a 5% importance weighting. The QEJSS instrument grants income one-sixth or 17% of the Facet-specific Satisfaction score, but averaging Facet-specific with Facet-free scores, effectively halves the weighting to 8.5%. Because little research into the weighting of job satisfaction factors has been accepted as significant by analysts of job satisfaction (see Robinson et al., 1969), one may only speculate about the appropriateness of these weightings. Nevertheless, despite the relative similarity of these income weightings, the three measures were suspected of having the potential of revealing different sorts, if not magnitudes, of relationships between job satisfaction and income.

The wording of the item, "approximate gross income last year" with the admonition to "include your spouse's income" reflected an

intention to account for all income from which the educators might benefit. Investment income, supplemental salaries, and other income sources would seem to diminish dissatisfaction regarding teaching salaries. Therefore, this investigator's wording of the item may have resulted in findings about any potential relationship between income and job satisfaction for educators which more closely reflect reality than would correlations between teaching income alone and job satisfaction. Indeed, research findings on this point may reflect item wording as much as they reflect existing relationship between the two variables, income and job satisfaction.

Section II: Variables

As shown in Appendix A, items 1-13 on the page coded NSQ comprise the Need Satisfaction Questionnaire as conceived by Porter (1961) and modified by Trusty and Sergiovanni (1966). Numbers 1-100 on the pages coded MSQ form the Minnesota Satisfaction Questionnaire. Numbers 1-38 on the page coded QEJSS constitute the Quality of Employment Job Satisfaction Survey.

Collection of the Data

In accordance with the requirements of The Graduate College and Department of Educational Leadership at Western Michigan University, permission was sought to collect data from the respondents in the sample--here the educators of Jenison Public Schools, Hudsonville Unity Christian High School, Calvin Christian Junior High School of Grandville, Michigan, and Grandville Christian Elementary School.

Permission was accordingly granted by the Human Subjects Review Board of the Department of Educational Leadership. After administrators of the respective school systems approved the collection of data in their systems, approval of the project was sought from the Jenison Education Association Governing Council, from the Faculty Executive Committee of Hudsonville Unity Christian High School, and from the faculties of the Grandville Christian Elementary School and Calvin Christian Junior High School. The study and data collection were approved by all parties and data were collected during the weeks of April 14 and 21. Every educator in each participating school was given the survey questionnaire, either in a faculty meeting or by the principal of the building. Educators completed the instruments either during faculty meetings or on their own time. In all cases, anonymity and confidentiality were assured and maintained. Control of the raw data was assigned to the building principal and a faculty representative when the researcher was not present. Of the survey packets distributed, 83.4% were received for analysis with 270 of 324 possible respondents returning the packets. Two of the returned questionnaires were discarded because of partial completion. All other survey packets ($n = 268$) were assembled for analysis.

To guard against the possibility of the sequence of the three questionnaires influencing the results, six different orderings of the three instruments were presented to respondents. The orderings--with the NSQ coded 1, the MSQ coded 2, and the QJSS coded 3--were: 1-2-3, 2-3-1, 3-1-2, 1-3-2, 3-2-1, 2-1-3. The resultant groups of six packets each with different orderings were cut and shuffled to

randomize their distribution. It was believed that these procedures minimized priming artifacts in the data since any primed effects were presumably spread across all of the instruments, thus cancelling their effects on any one of the three instruments.

Treatment of the Data

Data Analysis

All analyses were conducted through the use of the Statpack Statistical Package (Houchard, 1974), the Bank Data Management Package (Houchard, 1974), and sub-programs of the Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) at Western Michigan University's Computer Center. After respondents returned the three instruments assembled in the survey packet, each item response was given a numerical value which was written in the margin opposite the item. The coded data were then key punched and verified by Computer Center personnel. The data were then analyzed during the last 2 weeks of May and the month of June.

Scoring

Demographics page. Item responses were assigned the codes reported in Appendix B. Missing item responses were scored as zero and not included in the analyses.

Need Satisfaction Questionnaire (NSQ). Perceived need deficiencies were calculated by subtracting the value for "How much is there now?" from "How much should there be?". The deficiency values were

then grouped according to the design originally used by Porter (1961)⁶ and employed by all other researchers cited in this study using the NSQ:

1. Security needs--item 2 on the sheet coded NSQ.
2. Social needs--items 7 and 10.
3. Esteem needs--items 3, 8, and 9.
4. Autonomy needs--items 4, 5, 6, and 13.
5. Self-actualization--items 1, 11, and 12.

Only positive values were reported as specified by Carver and Sergio-vanni (1968) and Birada (1978). In the 38 item responses in which the desired satisfaction reported was less than that perceived to have been actually received, the desired satisfaction value was changed to correspond to the "How much is there now?" value, thus resulting in a need deficiency of zero as specified by Carver and Sergiovanni as well as Birada.

A mean deficiency value for each respondent on each of the five scales of the NSQ were calculated by summing the scale's values and dividing by the number of items in the scale. Total need deficiency was calculated as the mean of the five scales. Individuals' need deficiency totals were then summed and divided by the number of respondents in the group to produce group mean deficiency scores.

Minnesota Satisfaction Questionnaire (MSQ). The 20 subscales of the MSQ were computed by adding the items in each subscale and

⁶Porter originally added two additional items which he noted were specific to two or more need categories. They were: "The pay for my management position" and "The feeling of being-in-the-know in my management position." These two categories were dropped from subsequent NSQ based investigations.

dividing by the number of items in the subscale to produce a mean scale value. The sum of the subscale totals (except those for Co-workers and Working Conditions scales) divided by the number of subscales produced a general satisfaction mean.⁷ Intrinsic Satisfaction was computed by adding the sum of the following subscales and dividing by the number of scales: Ability Utilization, Achievement, Activity, Authority, Creativity, Independence, Moral Values, Responsibility, Security, Social Service, Social Status, and Variety. Extrinsic Satisfaction was computed similarly from the following scales: Advancement, Company Policies and Practices, Compensation, Recognition, Supervision--Human Relations, and Supervision--Technical. Co-workers and Working Conditions scales, included in the General Satisfaction score, were omitted from the Intrinsic and Extrinsic scales as directed by the test manual. Since analysis of the two scales revealed that they measured both intrinsic and extrinsic satisfaction, the test developers chose to omit them from the intrinsic and extrinsic scales. All computations and scale transformations were conducted for each respondent, thereby facilitating group tabulations.

The Quality of Employment Job Satisfaction Survey (QEJSS). The five facet-free items comprise the Facet-free Satisfaction scale.

⁷This procedure differs from the one prescribed in the manual in which only one item from each scale was used to calculate the general satisfaction score. Using only one item from the scales allowed the MSQ developers to norm the instrument with the simple additive, rather than mean, score and to produce a score not unduly large. However, since normative data for the MSQ with revised descriptors were not available and since using only one item from each of the scales wastes satisfaction information, the procedure of summing the subscale totals and dividing by the number of subscales (excluding, of course, Co-workers and Working Conditions) was used.

Appendix C indicates the numerical value assigned to each response. Scoring was conducted as prescribed by Quinn and Staines (1979) with exceptions: the response "Not too satisfied" was scored "2" instead of "1" in items 1 and 2 of the survey, at the suggestion of Computer Center personnel. Since neither Mangione (1973) nor Quinn and Staines (1979) explained the rationale behind the weighting of each response category from 1 to 5 and since it was concluded that the effects of a one-point change in two response choices on the overall findings would be minimal, the scoring changes were made. A total of eight responses to items 1 and 2 were affected.

Facet-specific Satisfaction was scored on a scale of 1 to 4, with a low value denoting low satisfaction and a high value denoting high satisfaction. The mean of all responses on 33 facet-specific items was computed to derive an individual Facet-specific Satisfaction score. The five subscales were computed as means of the following items: Comfort (items 6-12), Challenge (items 13-18), Financial Rewards (items 19-21), Relations with Co-workers (items 22-24), Resource Adequacy (items 25-35), and Promotions (items 36-38). The mean score of the facet-free items and the mean score of the facet-specific items were combined as two values and divided by 2 to produce a total mean satisfaction score. This value was the Overall Satisfaction score. However, to facilitate comparisons of the scores with data collected in 1980 from teachers in southeastern Michigan by Cooke and Kornbluh,⁸ the overall raw scores for Facet-free and Facet-specific

⁸Cooke, R., & Kornbluh, H. The general quality of teacher work-life. Outline of a paper presented to the Quality of Teacher Work-life Conference, Ann Arbor, Michigan, March 12, 1980.

satisfaction were not transformed into z scores and a mean taken of the two resulting z scores for each respondent as was prescribed by Quinn and Staines (1979). Cooke and Kornbluh reported teachers' job satisfaction only in raw scores. Raw scores from Quinn and Staines' 1977 national sample of workers, though, were also included in Cooke and Kornbluh's report, which facilitated comparisons of this investigation's data with data derived from the national sample.

Summary

The determination of the concurrent validity of the NSQ, MSQ, and QEJSS in this study took the form of a partial replication of Herman and Hulin's (1973) study. The nine research questions were addressed principally with discriminant function analysis, multitrait-multimethod correlations, and factor analysis of the NSQ. Review of the instruments' reliability coefficients as computed from the data obtained offered evidence of the relative utility of the instruments as measures of job satisfaction.

CHAPTER IV

FINDINGS

Discussion of the analysis of the data was divided into two sections. Section One reports descriptive data pertaining to the sample and to job satisfaction scores. Section Two presents the results of the statistical analyses conducted to answer the nine research questions. Evaluation of these findings to determine if the Need Satisfaction Questionnaire and the Quality of Employment Survey possessed concurrent validity with the criterion measure, the Minnesota Satisfaction Questionnaire, was included at the end of this chapter.

Section One

Demographic Data

Gender. A total of 127 men and 139 women responded to the survey instruments and thus constituted the 268 persons in the sample. Two individuals did not indicate their gender. Expressed in percentages, the sample was comprised of 47.4% men, 51.9%, women, and .7% persons not indicating their gender. A total of 324 survey packets--each containing the three survey instruments--was distributed. The 268 received for analysis reflected a return rate of 83.4%.

Age. As data in Table 1 show, ages were distributed across all of the four stipulated age ranges. One person did not mark an age range, but that person's responses to the job satisfaction instruments

were included in the data subjected to analysis.

Table 1
Ages of Respondents

Age range	Frequency	Percent
18-29 years	75	28.0
30-39	109	40.7
40-49	51	19.0
50-64	32	11.9

Note. n = 267.

Employment position. As shown in Table 2, respondents to the survey packet were mostly teachers, with administrators and professional support personnel comprising the rest of the sample. One case of missing data on the variable occurred.

Table 2
Employment Positions of Respondents

Employment position	Frequency	Percent
Administrator	21	7.8
Teacher (kindergarten through sixth grade)	98	36.6
Teacher (grades seven and eight)	43	16.0
Teacher (grades nine through twelve)	87	32.5
Professional support personnel (e.g., guidance counselors and social workers)	18	6.7

Note. n = 267.

Teaching experience. Table 3 indicates that the teachers¹ in the sample were predominantly experienced, and most of them had taught for 8 years or more.

Table 3
Teaching Experience of Respondents

Teaching experience	Frequency	Percent
1-2 years	16	6.0
3-7 years	80	29.9
8 or more years	140	52.2

Note. n = 236.

Employment status of spouse. This question, item number seven on the first page of the survey packet, was to be answered only by educators who were married and living with their spouses. The 56 persons who did not respond to the item constituted 20.9% of the individuals completing the survey instruments. Of the 212 educators answering the question, 161--or 60.1% of the total respondents--reported that their spouses were employed. Fifty-one, or 19.0% of the educators responding to the survey packet, stated that their spouses were not employed. In this chapter, the term "educator," was used to indicate a group of persons comprised of both teachers and administrators.

¹Eight of the respondents to research question number three were persons with positions other than teacher.

Approximate gross income. As one might expect from reviewing the age and experience data, from knowing the nature of educators' remuneration systems, and from noting the number of educators whose spouses were employed, the income levels reported by the educators in the sample generally exceeded \$15,000 annually. Fifteen or 5.6% of the persons responding to the survey instruments did not answer the question. Table 4 reveals the distribution of the respondents' reported incomes.

Table 4
Approximate Gross Income of Respondents

Approximate gross income	Frequency	Percent
\$ 5,000-\$10,000	3	1.1
\$10,000-\$15,000	32	11.9
\$15,000-\$20,000	59	22.0
\$20,000-\$25,000	60	22.4
\$25,000-\$30,000	40	14.9
\$30,000 or more	59	22.0

Note. n = 253.

Job Satisfaction Data

Need Satisfaction Questionnaire. Respondents to the NSQ marked two response categories--"How much is there now?" and "How much should there be?"--in answering each of the 13 need questions. The "should be" scores were subtracted from the "is now" scores to derive

a need deficiency score. Table 5 summarizes the educators' scores on the NSQ. Both the "is now" and "should be" questions were answered on 7-point Likert-type scales with values ranging from a low of 1 to a high of 7.

The need deficiencies computed in this study from the 13 questions of the NSQ were collapsed into five need deficiency categories or scales, as reported in Table 6.

The range of deficiencies derived from the study's sample was similar to the ranges reported by Trusty and Sergiovanni (1966), Carver and Sergiovanni (1968), Henderson, Goldsberry, and Sergiovanni (1978), and Birada (1978). Figure 1 shows the perceived need deficiencies reported in those studies compared with those computed for this report. Clearly, the largest need deficiencies were measured by the Esteem, Autonomy, and Self-actualization scales. These scales allegedly measured the so-called higher order needs in Maslow's (1954) paradigm. As noted in Chapter I of this report, however, differences in the various samples, computational methodologies, and sampling procedures suggest that comparisons of these studies are ill-advised. Nonetheless, the similarity of the general pattern of need deficiencies among these investigations is striking, particularly in light of the differences among the various studies. Indeed, on the basis of the apparent congruence of these findings, one might be led to conclude that the five scales of the NSQ are distinct factors of the constructs, need deficiency or job satisfaction. It was therefore all the more important that these data be subjected to factor analysis.

Table 5
Mean Scores on the Need Satisfaction Questionnaire

Question	Mean: "Is Now"	Mean: "Should Be"	Mean: "Deficiency"
1. The opportunity for personal growth and development in my school position.	4.7	6.0	1.3
2. The feeling of security in my school position.	5.1	6.2	1.1
3. The feeling of self-esteem a person gets from being in my school position.	5.0	6.2	1.2
4. The opportunity, in my school position, for participation in the setting of goals.	4.9	6.1	1.2
5. The opportunity, in my school position, for participation in the determination of methods and procedures.	4.9	6.1	1.2
6. The authority connected with my school position.	4.5	5.7	1.4
7. The opportunity, in my school position, to give help to other people.	6.0	6.2	.2
8. The prestige of my school position inside the school (that is the regard received from others in the school).	4.6	5.8	1.2
9. The prestige of my school position outside the school (that is the regard received from others not in the school).	4.3	5.8	1.5
10. The opportunity to develop close friendships in my school position.	5.0	5.8	.8

Table 5--Continued

Question	Mean: "Is Now"	Mean: "Should Be"	Mean: "Deficiency"
11. The feeling of worthwhile accomplishment in my school position.	5.1	6.3	1.2
12. The feeling of self-fulfillment a person gets from being in my school position (that is the feeling of being able to use one's own potentialities).	5.3	6.3	1.0
13. The opportunity for independent thought and action in my school position.	5.3	6.1	.8

Note. n = 268

Table 6

Deficiency Mean Scores on the Need Satisfaction
Questionnaire

Scale	Deficiency Mean
Security (Item number 2 on the NSQ)	1.04
Social (Items numbered 7 and 10)	.65
Esteem (Items numbered 3, 8, and 9)	1.44
Autonomy (Items numbered 4, 5, 6, and 13)	1.09
Self-actualization (Items numbered 1, 11, and 12)	1.19

Note. n = 268.

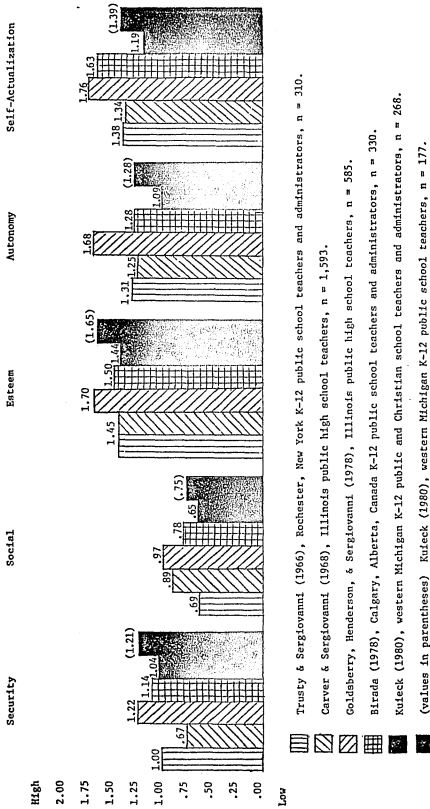


Figure 1

Comparative Need Deficiencies Among Educators: Review of Five Studies

Minnesota Satisfaction Questionnaire. The results from measuring the sample educators' job satisfaction by means of the MSQ contrasted with results from the NSQ. Whereas the NSQ indicated that the educators' greatest need deficiencies were in intrinsic satisfaction (Esteem, Autonomy, and Self-actualization scales), the MSQ generated data showing that the educators' greatest dissatisfaction was in the extrinsic satisfaction they derived from their work. The descriptors and numerical values assigned to each of the MSQ's 100 questions were:

1. (NOT SATISFIED) means this aspect of the job is much poorer than I would like it to be. (Numerical value: 1.00)
2. (ONLY SLIGHTLY SATISFIED) means this aspect of my job is not quite what I would like it to be. (Numerical value: 2.00)
3. (SATISFIED) means this aspect of my job is what I would like it to be. (Numerical value: 3.00)
4. (VERY SATISFIED) means this aspect of my job is even better than I expected it to be. (Numerical value: 4.00)
5. (EXTREMELY SATISFIED) means this aspect of my job is much better than I hoped it could be. (Numerical value: 5.00)

Researchers have established that the MSQ possesses two distinct factors--intrinsic and extrinsic satisfaction (see Weiss et al., 1967, p. 22). The test developers justified the retention of the 20 scales of the MSQ with the rationale that although the 20 scales loaded on only two factors, the question items intercorrelated within their intended scales highly enough to defend the retention of the 20 scales in the instrument. Figure 2 shows how the educators in the sample

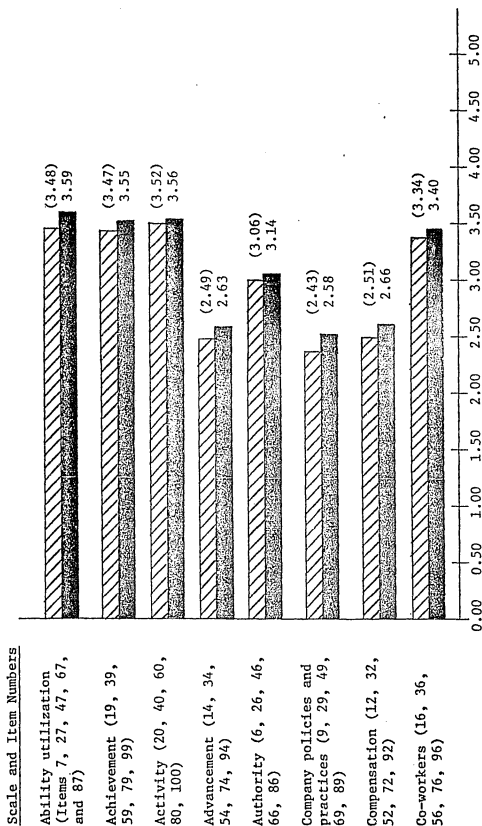


Figure 2

Mean Satisfaction Levels: Minnesota Satisfaction Questionnaire

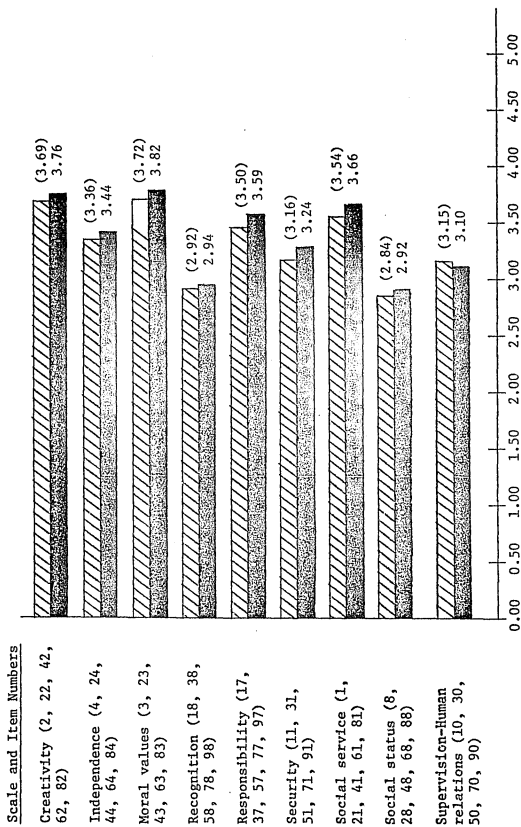


Figure 2--Continued

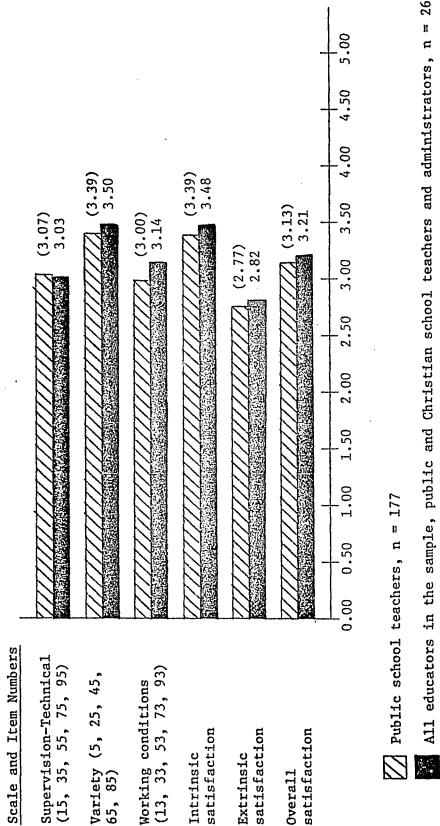


Figure 2--Continued

scored on the MSQ.

Normative data for the MSQ using the revised scale descriptors employed in this investigation have not been developed as yet by researchers associated with the Work Adjustment Project at the University of Minnesota. Hence, comparisons of this sample's MSQ scores with other educators were not made. Examination of Figure 2, however, shows that the satisfaction scores seem similar to job satisfaction scores from some other studies (e.g., Bishop, 1969; Holdaway, 1978; Wickstrom, 1971). Educators reported higher intrinsic satisfaction (mean = 3.48) than extrinsic satisfaction (mean = 2.82). Among the most satisfying aspects of educators' work were: Moral Values (the freedom to work without compromising one's own moral code), Creativity, Social Service, Responsibility, Ability Utilization, Achievement, Variety, and Independence. The MSQ test manual listed these scales as components of intrinsic job satisfaction. Moreover, since a value of 3.00 represented "satisfied" and a value of 4.00 "very satisfied," the intrinsic satisfaction value of 3.48 indicated considerable satisfaction, particularly in comparison with the extrinsic satisfaction scores.

Educators were least satisfied with those characteristics of their work measured by the scales designated as: Company Policies and Practices, Compensation, Advancement, Social Status, Recognition, and Supervision-Technical (supervisory competence). These variables, with the exception of Social Status, were classified by the MSQ test developers as pertaining to extrinsic job satisfaction. The extrinsic satisfaction mean, 2.82, fell between "satisfied," 3.00, and

"somewhat satisfied," 2.00. Although the primary purpose of this investigation was not to report the sample educators' job satisfaction levels by their job positions, comparison of satisfaction levels of public school administrators with public school teachers further clarified the meaning of the job satisfaction scores generated by the MSQ.

The Overall Job Satisfaction mean score for the public school teachers was 3.13 compared with the administrators' satisfaction mean of 3.73. The teachers' Intrinsic Satisfaction mean was 3.39 while the administrators' mean for the scale was 3.93. Extrinsic Satisfaction scores also showed the teachers' scores to be lower than those of the administrators (2.77 to 3.51). Indeed, the scales on which the means of teachers and administrators differed most were Company Policies and Procedures, Compensation, and Advancement, a result which should surprise few persons familiar with American schooling. In short, this rather clear line between the satisfaction of teachers and administrators was, in large part, explained by their extrinsic satisfaction with their work. The job satisfaction scores derived from the MSQ for all educators combined, however, were clearly influenced by the teachers' lower scores on both intrinsic and extrinsic variables.

Quality of Employment Job Satisfaction Survey. Results from the QEJSS computations indicated a pattern of satisfaction scores similar to that of the MSQ and different from that of the NSQ. Educators were most satisfied with the intrinsic aspects of their employment, as measured most noticeably by the Challenge scale, and were least

satisfied with those aspects of work associated with extrinsic satisfaction. Figure 3 shows how the educators scored on seven of the nine scales of the QEJSS.² Also included in the figure are the scores from a sample of teachers from southeastern Michigan and scores from a 1977 national sample of workers as reported by Cooke and Kornbluh, 1980.^{3,4} As noted in Chapter III of this report, Facet-specific Satisfaction was the arithmetic mean of the Comfort, Challenge, Remuneration, Relationship to Co-workers, Resource Adequacy, and Promotion scale responses. Facet-free Satisfaction was the mean of responses to question items one through five. Overall Satisfaction was a mean of the Facet-specific and Facet-free means. Although the response descriptors of the QEJSS differed from those of the MSQ (e.g., "very true" versus "extremely satisfied"), high numerical values on both scales denoted high satisfaction. Thus, "very true" was accorded a value of 4, "somewhat true" a value of 3, "not too true" a value of 2, and "not at all true" a value of 1.

²Facet-free Satisfaction (n = 268) and Facet-specific Satisfaction (n = 268) were not included in Figure 3 because Cooke and Kornbluh did not report these data.

³Cooke, R., & Kornbluh, H. The general quality of teacher work-life. Outline of a paper presented to the Quality of Teacher Work-life Conference, Ann Arbor, Michigan, March 12, 1980.

⁴Data from the national sample (Quinn & Staines, 1979) and data from the southeastern Michigan sample were collected by interviewing respondents. Respondents were given the questions from the QEJSS and asked to indicate their feelings about the questions by choosing cards with appropriate descriptors of their feelings written on them. QEJSS questions and descriptors used in this investigation were the same as those used in the national and southeastern Michigan studies.

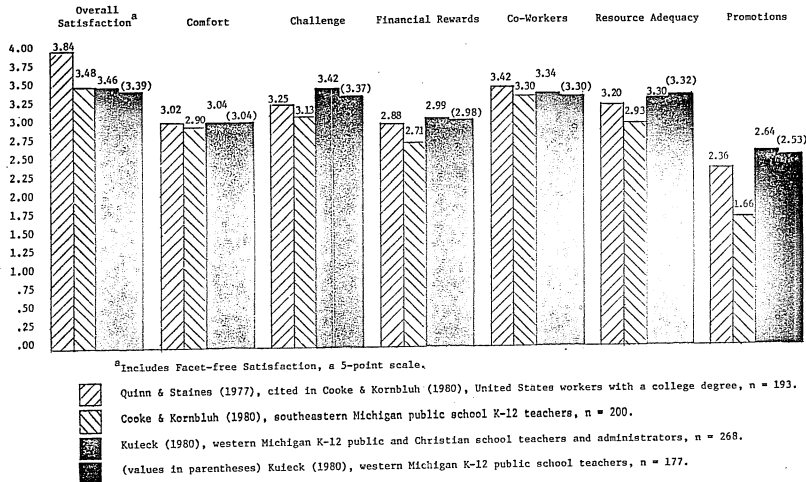


Figure 3
Comparative QJSS Job Satisfaction Levels: Review of Three Studies

A unique feature of the QEJSS which affected the scores, however, particularly for comparison purposes, was the values assigned to the descriptors in the facet-free section of the instrument. Rather than limit the range of the values to between 1 and 4, the test developers allowed the scores to range between 1 and 5, the result of which was a higher Facet-specific Satisfaction score. The Facet-specific Satisfaction mean of 3.12, derived from a 4-point scale, resulted in an Overall Satisfaction score of 3.48 when combined with the Facet-free Satisfaction mean of 3.81 derived from a 5-point scale. This made interpretation of the Overall Satisfaction score difficult. In other words, should the 3.48 mean score be interpreted against the 4-point or the 5-point scale? Or should it be held against say a 4.5-point scale? Of course, in defense of the QEJSS test developers, such score reporting is unusual for the QEJSS, the scores for which are most often reported in standardized z score form. Nonetheless, the meaning of the Overall Satisfaction mean score, not to mention the transformed z score, is difficult to understand.

Summary

The conflict in the literature of job satisfaction between those who suggest that teachers are relatively satisfied with the extrinsic conditions of their employment but are dissatisfied with the intrinsic aspects of their work and those who suggest the very opposite point of view was reflected in the job satisfaction scores computed for this investigation. The nonrandom sample of 268 educators from western Michigan produced intrinsic and extrinsic job satisfaction scores

which varied depending upon the job satisfaction instrument used to produce the scores. The NSQ yielded job satisfaction results similar to those reported by Trusty and Sergiovanni (1966), Carver and Sergiovanni (1968), Goldsberry, Henderson, and Sergiovanni (1978), and Birada (1978): The sources of greatest satisfaction for the sample's educators were the extrinsic aspects of their work, specifically security and social needs. Conversely, the educators were least satisfied with how well their esteem, autonomy, and self-actualization needs were met. On the other hand, both the MSQ and the QEJSS indicated that the educators' greatest sources of satisfaction were in the intrinsic qualities of their work, and that the greatest sources of dissatisfaction were in the extrinsic aspects of their employment. Indeed, without further analyses of other data from this investigation, one may suggest that choice of job satisfaction instrument influenced the nature of the findings. Further analyses were conducted, however, to determine: (a) the extent to which the three measures used in this study discriminated among groups known or suspected to differ in job satisfaction, (b) the degree to which the three instruments intercorrelated, and (c) the degree to which the NSQ reflected independent factors corresponding to the five Maslow need categories.

Section Two

This section of the discussion of analyses used in this investigation of educators' job satisfaction was divided into three parts: discriminant function analyses, correlational analyses, and factor

analyses. The order of these parts corresponded with the order of the actual analyses. Step one of the research design was to determine if the job satisfaction instruments discriminated among groups. If they were found to discriminate, then the next major research question became, "To what extent did the measures intercorrelate?" Finally, if the correlations between the NSQ and MSQ were found to be relatively low, the question became "Why?" Factor analyses provided at least one answer.

Discriminant Function Analysis

Discriminant function analysis, as Herman and Hulin (1973) explained, is "a multivariate analytic procedure that provides an overall significance test as well as individual significance tests on [the means of] the dependent variables" (p. 119). In terms of this investigation, discriminant function analysis provided an analysis of variance F value for the independent variables' means under analysis (e.g., gender) and provided significance tests for the means derived for each scale from each instrument (e.g., Advancement on the MSQ). The investigator interpreted the F values generated by the analysis as one would interpret F values generated by analysis of variance statistics.

Discriminant function analysis, however, also identified combinations of scales which most accounted for the differences detected among the groups under investigation. Specifically, the statistic's objective is "to weight and linearly combine the discriminating variables [e.g., the 20 scales of the MSQ] in some fashion so that the

groups are forced to be as statistically distinct as possible" (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975, p. 435). Simply stated, the major steps in discriminant function analysis are:

1. Compute \bar{F} values for the differences in the groups' mean scores.
2. Select from all of an instrument's scales those scales which by themselves discriminate best among groups.
3. Arrange these already discriminatory scales into a linear combination of scales which includes only those discriminating scales which add to the discriminatory ability of the combination. If a scale's discriminatory ability is even stronger in another scale, the additional scale is not included in the linear combination because its discriminatory ability is redundant.
4. Compute the groups' job satisfaction with the reduced set of scales.
5. Calculate which of the linear combination of scales actually discriminated most highly among the groups and assign importance loadings to the scales.
6. Define the nature of the discriminant function which served to separate the groups by observing which scales received the highest importance loadings.
7. Test the discriminatory effectiveness of the linear combination of scales by observing the percentage of persons classified into their membership group correctly by the linear combination of scales.

Terms essential to understanding a discussion of discriminant function analysis data include:

1. Standardized discriminant function coefficient. This coefficient is a measure of a scale's importance to a derived discriminant function. The larger the absolute value (ignoring the signs), the more important the scale to the function.
2. Wilks' Lambda coefficient. This coefficient is an indicator of the discriminatory ability possessed by individual questions or by individual scales. As an inverse correlation, the larger its value, the less discriminant ability there is in the question or scale under study.
3. Group centroid. Function analysis, as Nunnally (1967) explained, is closely related to factor analysis:

The multiple discriminant function is based on a linear combination of variables, so in that sense, linear discriminant function is a factor. . . . Linear discriminant functions, then, are special types of factors, ones that serve to discriminate among a priori groups of subjects. (p. 399)

Once discriminant function analysis has derived the function or functions underlying a given set of scales, scores for persons in the groups under study are computed on the discriminant function. The average scores for the groups, expressed in standardized terms, are called the group centroids. They represent the average profile of each group in the reduced space defined by the discriminant function and may be plotted on a graph. Centroids serve as indicators of how successful the discriminant function was in separating the groups. The greater the distance between the centroids in standard score terms, the greater the discriminatory ability inherent in the selected scales of the discriminant function.

The point of using discriminant function analysis in a study of the discriminant validity of three measures of job satisfaction is clear. The procedures addressed the question of which of the three measures discriminated best among groups when all, some, and a chosen ideal combination of their scales were used. The analyses, therefore, provided information with which to draw conclusions about the discriminant validity of the overall job satisfaction scales and subscales of the three instruments.

Research question number 1. "Will the NSQ, MSQ, and QEJSS discriminate between public school teachers and public school administrators?" Significant differences between teachers and administrators were detected by each of the instruments. Table 7 summarizes the degree to which each of the measure's overall satisfaction scores discriminated between the two groups. The lower the Wilks' Lambda score, the greater the discriminatory ability of the score.

Both the significance tests (F ratio) and the Wilks' Lambda coefficients indicated that the discriminatory ability of the overall satisfaction scales of the NSQ and the MSQ were superior to the discriminatory ability of the Overall Satisfaction scale of the QEJSS. Although teachers were shown to be less satisfied than administrators by each of the overall satisfaction scales of the three instruments, the probability of committing Type I error was highest with the overall satisfaction scale of the QEJSS. Discriminant function analysis further explained the measures' ability to discriminate between public school teachers and administrators.

Table 7
Overall Satisfaction Scores: Administrators and Teachers

Instrument	Administrator n	Teacher n	Administrator Mean	Teacher Mean	Wilks' Lambda	F Ratio
NSQ	17	177	.40 ^a	1.26 ^a	.91	19.05***
MSQ	17	177	3.73 ^b	3.13 ^b	.91	19.05***
QEJSS	17	177	3.82 ^c	3.39 ^c	.97	6.02*

Note. F = 1 and 192 degrees of freedom.

^aThe higher the deficiency score, the greater the dissatisfaction.

^bBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^cThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

* $p < .05 = 3.84$

** $p < .01 = 6.63$

*** $p < .001 = 10.83$

Table 8 reveals that although the overall satisfaction scores obtained from the NSQ and MSQ were similar in discriminatory ability, selected subscales of the MSQ were more discriminatory than selected NSQ scales. Moreover, when the most discriminatory scales from each instrument were combined into discriminant functions which best separated teachers from administrators, the scales of the MSQ discriminated the groups most successfully. The final Wilks' Lambda coefficient of .79 for the MSQ (see Table 9) and the classification success rate of 79% for the MSQ (see Table 10) suggested that the linear combination of scales from the MSQ was superior in discriminating ability to those of the NSQ and QJEJS.

The standardized discriminant function coefficients shown in Table 9 indicate the relative importance to the discriminant function of the scales in the linear combination of scales. Similar to a factor in factor analysis, a discriminant function is the underlying attribute in the selected linear combination of scales which best discriminates the groups under consideration. Examination of Table 9 revealed that the Overall Need Deficiency scale of the NSQ was nearly twice as important to the discriminant function as the Self-actualization scale (.68 compared with .37). Indeed, the final Wilks' Lambda coefficient of the linear combination of scales was only marginally reduced (.90 from .91) when the Self-actualization scale was added to the Overall Deficiency scale, thus showing that the Self-actualization scale added negligible discriminatory power to the Overall Need Deficiency scale. On the other hand, examination of the MSQ's discriminant function and its standardized discriminant

Table 8

Discriminating Scales Data: Administrators^a and Teachers^b

Instru- ment	Discriminating Scale	Group 1 ^a Mean	Group 2 ^b Mean	Wilks' Lambda	F Ratio
NSQ	Security	.29	1.21	.96	7.02**
	Social	.26	.75	.97	6.48**
	Esteem	.76	1.64	.96	8.82**
	Autonomy	.34	1.28	.94	12.57***
	Self-actualization	.33	1.39	.92	16.30***
	Overall deficiency	.40	1.26	.91	19.05***
MSQ	Ability utilization	4.07	3.49	.96	8.91**
	Achievement	4.07	3.47	.94	12.51***
	Activity	3.96	3.48	.96	8.88**
	Advancement	3.28	2.49	.91	18.24***
	Authority	3.68	3.06	.92	17.04***
	Company policies and procedures	3.45	2.43	.87	27.83***
	Compensation	3.54	2.52	.89	23.58***
	Co-workers	3.88	3.35	.97	6.38*
	Independence	3.73	3.36	.97	6.45*
	Moral values	4.12	3.73	.97	6.17*
	Recognition	3.46	2.92	.97	5.86*
	Responsibility	4.06	3.50	.93	14.32***
	Security	3.71	3.16	.96	8.22**
	Social service	4.16	3.55	.93	15.57***
	Social status	3.56	2.81	.91	17.91***
	Supervision--human rela- tions	3.69	3.16	.97	5.61*
	Supervision--technical	3.62	3.07	.96	7.73*
	Variety	4.00	3.39	.93	13.86***
	Working conditions	3.61	3.00	.97	6.87**

Table 8--Continued

Instru- ment	Discriminating Scale	Group 1 ^a Mean	Group 2 ^b Mean	Wilks' Lambda	F Ratio
MSQ					
	Intrinsic satisfaction	3.93	3.39	.91	19.85***
	Extrinsic satisfaction	3.51	2.77	.89	22.86***
	Overall satisfaction	3.73	3.12	.91	19.06***
QEJSS					
	Overall satisfaction	3.82	3.39	.97	6.02*
	Facet-free satisfaction	4.31	3.69	.98	4.22*
	Facet-specific satis- faction	3.34	3.09	.96	7.32**
	Financial rewards	3.31	2.99	.98	4.51*
	Promotion	3.04	2.53	.97	5.86*

Note. n = 194.

F ratio with 1 and 192 degrees of freedom.

^aAdministrators, n = 17.

^bTeachers, n = 177.

^cThe higher the deficiency score, the greater the dissatisfaction.

^dBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^eThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

* $p < .05 = 3.84$.

** $p < .01 = 6.63$.

*** $p < .001 = 10.83$.

Table 9

Discriminant Function Selection Data:
Administrators^a and Teachers^b

Step	Discriminating Scale	F Ratio ^c	Wilks' Lambda	Significance	Standardized Discriminant Function Coefficients
NSQ					Function 1
1.	Overall deficiency	19.05	.91	.00	.68
2.	Self-actualization	1.08	.90	.00	.37
MSQ					
1.	Company policy and procedures	27.83	.87	.00	-.46
2.	Compensation	5.51	.85	.00	-.34
3.	Authority	3.14	.84	.00	-.19
4.	Recognition	2.13	.82	.00	.34
5.	Advancement	1.87	.82	.00	-.22
6.	Social service	1.68	.81	.00	-.24
7.	Creativity	2.35	.80	.00	.58
8.	Responsibility	3.20	.79	.00	-.52
QEJSS					
1.	Facet-specific satisfaction	7.31	.96	.01	1.44
2.	Resource adequacy	2.77	.95	.01	-.89
3.	Comfort	1.40	.94	.01	-.42
4.	Overall satisfaction	1.12	.94	.02	.40

Note. n = 194.

F ratio with 2 and 225 degrees of freedom.

^aGroup 1 (public school administrators, n = 17).

^bGroup 2 (public school teachers, n = 177).

^cF value required for entry or removal of scales from the linear combination of scales.

Table 10

Centroid Data: Administrators^a and Teachers^b

Instrument	Group	Function 1	Percent of Individuals Correctly Classified by Group
NSQ	1	- .99	
	2	.10	
			71.13
MSQ	1	-1.49	
	2	.14	
			84.54
QEJSS	1	.81	
	2	- .08	
			68.56

Note. n = 194.^aGroup 1 (public school administrators, n = 17).^bGroup 2 (public school teachers, n = 177).

coefficients revealed that the Overall Satisfaction scale was not included in the linear combination of scales. This omission indicated that the selected subscales discriminated between teachers and administrators better than the Overall Satisfaction scale. Ignoring the negative and positive signs,⁵ the relative importance of the scales was apparent. The most important scales in descending order of importance were: Creativity, Responsibility, Company Policy, Compensation, and Recognition. Considerably less important were Social Service, Advancement, and Authority.

The most important scales to the discriminant function neatly described what might be termed "management's rights and privileges." The Creativity scale, comprised of questions 2, 22, 42, 62, and 82, seemed to be as much an autonomy scale as anything else. Item 22, for example, read, "The chance to do new and original things on my own." One is reminded of the assertion by Srivastva, Salipante, Cummings, and Notz (1977) that autonomy alone accounted for much of the differences persons reported in their job satisfaction. Clearly, the MSQ's discriminant function revealed that administrators were more satisfied than were teachers with the dimensions of work measured by the scales in the discriminant function. Indeed, those dimensions conform to what some persons might believe to be the benefits of holding a position high on the organizational ladder.

⁵As explained by Nie et al. (1975), the positive and negative signs indicate whether a variable or scale made a positive or negative contribution to the discriminant function.

In short, the final Wilks' Lambda coefficient and prediction percentage of the MSQ showed that the MSQ's discriminant function was superior in discriminatory ability to the NSQ's discriminant function. In fact, as Table 10 shows, 94.1% of the administrators, or 16 of 17 individuals, were correctly classified by the MSQ's discriminant function. Although the NSQ's discriminant function did nearly as well with the administrators by correctly classifying 88.2%, or 15 of 17 individuals, it was less effective in classifying teachers than was the MSQ's discriminant function (69.5% to 83.6%). Overall, the MSQ's discriminant function correctly classified 84.54% of the educators whereas the NSQ's discriminant function correctly classified only 71.13%.

Least discriminatory of the three measures, though almost equal in discriminatory ability to the discriminant function of the NSQ, was the discriminant function of the QEJSS which correctly classified 68.56% of the educators (see Table 10). Most important to the discriminant function derived for the QEJSS were the Facet-specific scale and Resource Adequacy, a subscale of the Facet-specific scale. The other two scales, Overall Satisfaction and Comfort, were considerably less important to the discriminant function. Since items comprising the Resource Adequacy scale included measuring satisfaction with one's supervisors, it may not be particularly surprising that the scale indicated that administrators were more satisfied with their work than teachers. The ability of the QEJSS' Overall Satisfaction scale to discriminate more effectively between teachers and administrators than any of its other scales was analogous to the

superior discriminatory ability of the NSQ's Overall Satisfaction score relative to other NSQ scales. Nonetheless, neither the NSQ nor the QEJSS measured those aspects of the construct job satisfaction which separate teachers from administrators as well as did the criterion measure for the investigation, the MSQ.

Two other numerical values reported in Table 11 also indicated the ability of the MSQ's discriminant function to discriminate between public school teachers and public school administrators. The first, the eigenvalue, is "a special measure computed in the process of deriving the discriminant function . . . [and] is a measure of the relative importance of the function in discriminating groups from one another" (Nie et al., 1975, p. 442). The total eigenvalue for all discriminant functions (here only one) is "a measure of the total variance existing in the discriminating variables" (Nie et al., 1975, p. 442). Table 11 shows that the MSQ's discriminant function separated public school teachers from public school administrators more effectively than did the other two instruments' discriminant functions as shown by the larger variance of the MSQ's discriminant function. In other words, the question items in the MSQ's discriminant function "spread out" the scores of the respondents more effectively than did items from the other instruments' discriminant functions.

Even so, the MSQ's discriminant function manifested large amounts of variance unexplained by group membership. Another measure of interest, the canonical correlation, may be used to explain. Nie et al. (1975) defined the canonical correlation as follows:

Table 11
Discriminant Function Data: Administrators^a and Teachers^b

Instru- ment	Discrim- inant Function	Eigen- value	Relative Percent	Canonical Correla- tion	Func- tions Derived	Wilks' Lambda	Chi- Square	Signifi- cance
NSQ	1	.11	100.00	.31	0	.90	19.16	.00
NSQ	1	.27	100.00	.46	0	.79	45.14	.00
QEJSS	1	.07	100.00	.25	0	.94	12.37	.00

Note. n = 194.

^aGroup 1 (public school administrators, n = 17).

^bGroup 2 (public school teachers, n = 177).

The canonical correlation is a measure of association between the single discriminant function and the set of ($g - 1$) dummy variables which define the g group memberships. It tells us how closely the function and the "group variable" are related, which is just another measure of the function's ability to discriminate among the groups. (p. 442)

The higher the canonical correlation, the more discriminatory the function. Table 11 indicates that the MSQ's canonical correlation of .46 was substantially larger than either the NSQ's .31 or the QEJSS' .25. "The canonical correlation squared [is] the proportion of variance in the discriminant function explained by the groups" (Nie et al., 1975, p. 442). Thus, of the total variance in the MSQ's discriminant function, only 21.3% of the variance was explained by group membership. In other words, 78.7% of the variance of the MSQ's discriminant function occurred for reasons other than group membership. Group membership explained much less of the variance of the NSQ's discriminant function (9.5%) and even less of the variance of the QEJSS' discriminant function (6.3%). These data suggested that although Herman and Hulin's (1973) conclusion that one's job satisfaction increases as one moves up the organizational ladder was supported by this investigation (public school administrators were more satisfied with their jobs than were public school teachers), hierarchical position accounted for only a small proportion of the job satisfaction variance produced by the most discriminatory scales of the most discriminatory instrument. This fact is consistent with a general theme of Chapter II of this report: Job satisfaction is a multifaceted phenomenon no single variable has yet explained.

Research question number 2. "Will the NSQ, MSQ, and QEJSS discriminate men from women?" None of the instruments detected significant differences between the mean overall satisfaction scores of men and women. Table 12 indicates that the derived F ratios fell well below the region of rejection for the null hypothesis at both the .05 and .001 p levels. Only the Working Conditions scale of the MSQ ($F = 4.33$) and the Challenge ($F = 5.09$), Remuneration ($F = 4.74$), and Facet-specific ($F = 4.23$) scales of the QEJSS produced differences significant at the .05 level. None of these differences in means was significant, however, at the .01 level or, of course, at the .001 level.

Research question number 3. "Will the NSQ, MSQ, and QEJSS discriminate younger teachers from older teachers?" Each of the instruments detected significant differences between younger teachers and older teachers. As Table 13 indicates, the differences detected by the NSQ had greater statistical significance than did the differences detected by the MSQ and QEJSS. The general pattern of job satisfaction reflected in the findings from all three of the instruments was that older teachers experienced greater job satisfaction than did younger teachers. Apparently, however, the relationship between age and job satisfaction was strongest with the aspects of job satisfaction measured by the NSQ. The statistical significance of age differences with the NSQ ($F = 11.19$) compared favorably with the F values derived from the NSQ and MSQ for the mean differences between teachers and administrators ($F = 19.05$), particularly when their respective F values with $p < .001$ (10.83 and 5.42) were considered.

Table 12
Mean Overall Satisfaction Scores: Males and Females

Instrument	Males' n	Females' n	Males' Mean	Females' Mean	Wilks' Lambda	F Ratio
NSQ	139	127	1.05 ^a	1.13 ^a	1.00	.54
MSQ	139	127	3.24 ^b	3.18 ^b	1.00	.74
QEJSS	139	127	3.40 ^c	3.53 ^c	.99	2.34

Note. F with 1 and 264 degrees of freedom

^aThe higher the deficiency score, the greater the dissatisfaction.

^bBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^cThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

* $p < .05 = 3.84$.

** $p < .01 = 6.63$.

Table 13
Mean Overall Satisfaction Scores: Ages^a

Instrument	Group 1a Mean	Group 2b Mean	Group 3c Mean	Group 4d Mean	Wilks' Lambda	F Ratio
NSQ	1.37 ^e	1.16 ^e	.85 ^e	.55 ^e	.89	11.19***
MSQ	3.13 ^f	3.15 ^f	3.35 ^f	3.40 ^f	.96	3.28*
QEJSS	3.39 ^g	3.39 ^g	3.58 ^g	3.73 ^g	.97	2.74*

Note. n = 267.

^aF ratio with 3 and 263 degrees of freedom.

^aGroup 1 (18-29 years, n = 75).

^bGroup 2 (30-39 years, n = 109).

^cGroup 3 (40-49 years, n = 51).

^dGroup 4 (50-59 years, n = 32).

^eThe higher the deficiency score, the greater the dissatisfaction.

^fBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^gThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

*_p < .05 = 2.60.

**_p < .01 = 3.78.

***_p < .001 = 5.42.

In short, the Overall Deficiency scale for the NSQ discriminated among educators of various ages more effectively than did the overall satisfaction scales of either the MSQ or the QEJSS.

The apparent superiority of the NSQ over the other two instruments did not remain, however, after discriminant function analysis was conducted. As Table 14 shows, the discriminatory ability of the seven selected MSQ scales was marginally greater than the combination of scales selected for the NSQ and the QEJSS (the smaller the final Wilks' Lambda coefficient, the greater the discriminatory ability in the linear combination of scales). The rate of successful classification for each instrument, though, as reported in Table 15, suggested that none of the discriminant functions derived was particularly effective in correctly categorizing persons in the groups to which they belonged. The classification rates might well have been higher if the four groups had been collapsed into two--younger and older persons--thus requiring less precise classification.

The loadings on the three instruments' discriminant functions suggested the nature of the phenomena discriminating younger teachers from older teachers. Table 16 reveals that the highest loadings on the NSQ's first discriminant function were on the Overall Deficiency and Self-actualization scale. Since the eigenvalue for the first discriminant function was .15 and accounted for 88.15% of the total variance explained by the two derived discriminant functions (see Table 17), only the first function merited consideration in analyzing the nature of the function. From the fact that the Overall Deficiency scale received almost one and one-half times the loading of the

Table 14

Educators' Discriminating Scales Data: Ages

Instru- ment	Discriminating Scale	Group 1 ^a Mean	Group 2 ^b Mean	Group 3 ^c Mean	Group 4 ^d Mean	Wilks' Lambda	F Ratio
NSQ ^e							
	Security	1.31	1.13	.82	.53	.97	3.11*
	Social	.85	.60	.67	.38	.97	2.85*
	Esteem	1.32	1.11	1.06	.72	.91	9.00***
	Autonomy	1.38	1.14	.90	.56	.94	5.91**
	Self-actualization	1.54	1.32	.77	.56	.89	11.32***
	Overall deficiency	1.37	1.16	.85	.55	.89	11.19***
MSQ ^f							
	Company policies and procedures	2.37	2.47	2.85	3.10	.90	9.72***
	Compensation	2.38	2.58	3.00	3.09	.91	9.12***
	Security	3.03	3.18	3.44	3.61	.93	6.36***
	Social Status	2.83	2.83	3.08	3.16	.96	3.37*
	Supervision--human relations	2.96	3.02	3.35	3.36	.97	3.14*
	Extrinsic satisfaction	2.68	2.74	3.06	3.11	.93	6.81**
	Overall satisfaction	3.13	3.15	3.35	3.40	.96	3.28*

Table 14--Continued

Instru- ment	Discriminating Scale	Group 1a Mean	Group 2b Mean	Group 3c Mean	Group 4d Mean	Wilks' Lambda	F Ratio
QEJSSg							
	Overall satisfaction	3.39	3.39	3.58	3.73	.97	2.74*
	Facet-specific satisfaction	3.06	3.10	3.16	3.29	.96	3.40*
	Financial rewards	2.86	3.00	3.04	3.25	.97	3.18*
	Promotions	2.56	2.54	2.69	3.09	.95	4.32**

Note. n = 267.

F ratio with 3 and 263 degrees of freedom.

aGroup 1 (18-29 years, n = 75).

bGroup 2 (30-39 years, n = 109).

cGroup 3 (40-49 years, n = 51).

dGroup 4 (50-59 years, n = 32).

eThe higher the deficiency score, the greater the dissatisfaction.

fBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

gThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

*p < .05 = 2.60.

**p < .01 = 3.78.

***p < .001 = 5.42.

Table 15
Educators' Centroid Data: Ages

Instrument	Group	Function 1	Function 2	Function 3	Percent of Individuals Correctly Classified by Group
NSQ	1 ^a	-.36	.12	.03	
	2 ^b	-.15	-.13	-.02	
	3 ^c	.42	.18	-.04	
	4 ^d	.68	-.13	.06	
					36.70
MSQ	1 ^a	-.50	-.18	-.04	
	2 ^b	-.07	.17	.08	
	3 ^c	.42	.10	-.17	
	4 ^d	.75	-.33	.11	
					38.20
QEJSS	1 ^a	-.19	-.12		
	2 ^b	-.09	.09		
	3 ^c	.08	.02		
	4 ^d	.63	-.05		
					31.46

Note. n = 267.

^aGroup 1 (18-29 years, n = 75).

^bGroup 2 (30-39 years, n = 109).

^cGroup 3 (40-49 years, n = 51).

^dGroup 4 (50-59 years, n = 32).

Table 16
Educators' Discriminant Function Selection Data: Ages^a

Step	Discriminating Scale	F Ratio ^b	Wilks' Lambda	Significance	Standardized Discriminant Function Coefficients		
					Function 1	Function 2	Function 3
NSQ							
1.	Overall deficiency	11.19	.89	.00	-.71	.20	-1.73
2.	Social	2.26	.86	.00	.28	1.00	.76
3.	Self-actualization	1.51	.85	.00	-.49	-.57	-1.43
MSQ							
1.	Security	6.36	.93	.00	.38	.17	.35
2.	Company policies and procedures	5.39	.88	.00	.67	-.67	.44
3.	Creativity	4.71	.83	.00	-.51	-.56	-.41
4.	Recognition	1.74	.82	.00	-.07	.90	-.74
5.	Moral values	1.32	.80	.00			
6.	Compensation	1.47	.79	.00	.43	.50	-.33
7.	Advancement	1.29	.78	.00	-.22	-.58	-.32
8.	Moral values (Removed)	.98	.79	.00			

Table 16--Continued

Step	Discriminating Scale	F Ratio ^b	Wilks' Lambda	Significance	Standardized Discriminant Function Coefficients		
					Function 1	Function 2	Function 3
QJESS							
1.	Facet-specific	3.39	.96	.02			
2.	Promotions	1.81	.94	.02	.73	- .72	
3.	Facet-specific (Removed)	.92	.95	.01			
4.	Financial rewards	2.21	.93	.00	.55	.86	

Note. n = 267.

F ratio with 3 and 263 degrees of freedom.

^aAges of the groups were:

Group 1 (18-29 years, n = 75).

Group 2 (30-39 years, n = 109).

Group 3 (40-49 years, n = 51).

Group 4 (50-59 years, n = 32).

^bF value required for entry or removal of the scales from the linear combination of scales.

Table 17
Educators' Discriminant Function Data: Ages^a

Instru- ment	Discrim- inant Function	Eigen- value	Relative Percent	Canonical Correla- tion	Func- tions Derived	Wilks' Lambda	Chi- Square	Signifi- cance
NSQ					0	.85	42.74	.00
	1	.15	88.15	.36	1	.98	5.35	.25
	2	.02	11.20	.14	2	1.00	.30	.59
	3	.00	.65	.03				
MSQ					0	.79	62.20	.00
	1	.21	81.32	.42	1	.95	12.41	.26
	2	.04	14.81	.19	2	.99	2.60	.63
	3	.01	3.88	.10				
QEJSS					0	.93	19.23	.00
	1	.07	89.30	.25	1	.99	2.11	.35
	2	.01	10.70	.09				

Note. n = 267

^aAges of the groups were:

- Group 1 (18-29 years, n = 75).
- Group 2 (30-39 years, n = 109).
- Group 3 (40-49 years, n = 51).
- Group 4 (50-59 years, n = 32).

Self-actualization scale, the most parsimonious and conservative explanation of the function's nature was that it reflected whatever the Overall Deficiency scale of the NSQ measured. From Figure 1 presented earlier in this chapter, one can determine that the scale tended to measure intrinsic satisfaction. Further explanation, however, must be reserved until after the results of the factor analyses are presented in this report.

The nature of the MSQ's first discriminant function appeared to be a mixture of intrinsic and extrinsic satisfiers-dissatisfiers. An extrinsic scale, Company Policies and Practices, received the highest loading, .67 (see Table 16), but an intrinsic scale, Creativity, received the second highest loading, -.51. Compensation had the third highest loading, .43, while Security had the fourth highest, .38. The other two scales, Advancement and Recognition, received considerably lower loadings, -.22 and -.07, and probably played relatively minor roles in discriminating younger teachers from older teachers. Ascribing a term to the discriminating factor was difficult, but the four most important scales to the function seemed to be related to the way in which the teacher had accommodated himself or herself to certain realities of the job. It may have been that the older teachers were not any happier about these aspects of their work than were the younger teachers but that the older teachers had come to accept these characteristics of their work. Younger teachers were measured as more satisfied than older teachers only on the Creativity scale. Unfortunately, the data did not delineate satisfaction or happiness from accommodation.

The nature of the scales which received loadings on the QEJSS' first discriminant function corresponded with those scales which received loadings on the MSQ's first discriminant function--Compensation and Advancement. Promotions (.73) and Financial Rewards (.55) most effectively discriminated younger teachers from older teachers. As with the MSQ, only the first function was an important discriminator (see Table 17) as was shown by its accounting for 89.30% of the variance of the two functions. Relative to the other two instruments, however, the QEJSS' linear combination of scales possessed less discriminatory power than did either of those of the NSQ or MSQ. The Wilks Lambda coefficient for the MSQ's linear combination of scales, before the discriminant functions were derived, was .79 as compared with .85 for the NSQ and .93 for the QEJSS (see Table 17). The lower Lambda coefficient suggested that the MSQ's linear combination of scales possessed more discriminatory ability than the linear combination of scales of the NSQ and QEJSS.

Research question number 4. "Will the NSQ, MSQ, and QEJSS discriminate inexperienced teachers from experienced teachers?" None of the instruments detected significant differences among the mean overall satisfaction scores of inexperienced teachers and the mean scores for experienced teachers. Table 18 indicates that the derived F ratios fell below the region of rejection for the null hypothesis at both the .05 and .01 p levels. However, the Security and Social scales of the NSQ showed differences in mean scores large enough to be significant at the .05 level ($F = 4.03$ and 3.82 respectively). Moreover, two scales from the MSQ, Compensation and Creativity,

reflected differences in mean scores which were also significant at the .05 level. Teachers with greater experience showed lower need deficiencies or higher job satisfaction than did less experienced teachers on both the Security and Social scales. Means ranged from 2.07 (Security) and 1.30 (Social) for the least experienced teachers to .99 (Security) and .67 (Social) for the most experienced teachers.

A different sort of satisfaction pattern was evident, however, on the Compensation scale of the MSQ. Teachers with 3 to 7 years experience were least satisfied (mean score of 2.45) while teachers with the least experience were the most satisfied (mean score of 2.69). Furthermore, examination of the Creativity scale, which as noted earlier in this chapter might better be termed "autonomy," revealed that the most satisfied teachers were those with least experience (mean score of 3.92) and the least satisfied teachers were those with most experience (mean score of 3.64). One must be advised, however, to keep the importance of these mean differences on the Creativity scale in their proper perspective relative to the rest of the MSQ scales. The mean score for all experience groups on the Creativity scale (3.75) was considerably higher than the mean score of any of the other scales except Moral Values (3.79). The mean score for all experience groups on the Compensation scale (2.56), on the other hand, was substantially lower than any of the means of the other scales, except for Company Policies and Practices (2.47) and Advancement (2.57). Thus, the differences in mean satisfaction scores among teachers of differing years of experience on the Compensation scale may merit more attention than mean score differences on the Creativity

scale. The experience data also illustrate a phenomenon which will be discussed more thoroughly in Chapter V of this report. The overall satisfaction scores for the NSQ and the MSQ were unable to detect the differing attitudes younger and older teachers expressed about the security, social, financial, and creative aspects of their work, as shown by subscales of the two job satisfaction instruments. Reliance only on overall satisfaction scores as indicators of differences among groups of individuals' attitudes about their work therefore may preclude observing and reporting meaningful differences in the group's job satisfaction.

Research question number 5. "Will the NSQ, MSQ, and QEJSS discriminate among teachers of lower and higher incomes?" As Table 19 reveals, none of the instruments detected statistically significant differences in the mean scores of persons with differing gross family incomes. The F values are well below the region of rejection for the null hypothesis at the .05 level (2.21) and .01 (3.02). Moreover, none of the scales from any of the three instruments detected statistically significant mean score differences.

Research question number 6. "Will the NSQ, MSQ, and QEJSS discriminate among teachers at the elementary, junior high, and senior high school levels?" In a pattern of F ratios similar to that derived from the independent variable age (see Table 13), the NSQ's Overall Deficiency score discriminated best of the three instruments (see Table 20). Neither the MSQ nor the QEJSS mean scores of the three groups were different enough to have F values large enough to fall into the region of rejection for the null hypothesis at even the

Table 18
Mean Overall Satisfaction Scores: Teaching Experience

Instrument	Group 1 ^a n	Group 2 ^b n	Group 3 ^c n	Group 1 Mean	Group 2 Mean	Group 3 Mean	Wilks' Lambda	F Ratio
NSQ ^d	15	79	131	1.42 ^b	1.24 ^b	1.09 ^b	.99	1.66
MSQ ^e	15	79	131	3.13 ^c	3.21 ^c	3.13 ^c	1.00	.48
QEJSS ^f	15	79	131	3.56 ^d	3.43 ^d	3.43 ^d	1.00	.27

Note. F with 2 and 222 degrees of freedom.

^aGroup 1 = 1-2 years of experience.

^bGroup 2 = 3-7 years of experience.

^cGroup 3 = 8 or more years of experience.

^dThe higher the deficiency score, the greater the dissatisfaction.

^eBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^fThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

* $p < .05 = 3.00$

** $p < .01 = 4.61$

Table 19

Mean Overall Satisfaction Scores: Approximate Gross Family Income,
Administrators and Teachers

Instru- ment	Group 1 ^a Mean	Group 2 ^b Mean	Group 3 ^c Mean	Group 4 ^d Mean	Group 5 ^e Mean	Group 6 ^f Mean	Wilks' Lambda	F Ratio
NSQ	1.28 ^g	1.38 ^g	1.18 ^g	1.06 ^g	1.32 ^g	1.00 ^g	.97	1.27
MSQ	3.28 ^h	3.22 ^h	3.13 ^h	3.15 ^h	3.16 ^h	3.15 ^h	1.00	.16
QEJSS	3.87 ⁱ	3.39 ⁱ	3.32 ⁱ	3.47 ⁱ	3.45 ⁱ	3.54 ⁱ	1.00	.83

Note. ¹F with 5 and 213 degrees of freedom.

^aGroup 1 = \$5,000-\$10,000 (n = 3).

^bGroup 2 = \$10,000-\$15,000 (n = 31).

^cGroup 3 = \$15,000-\$20,000 (n = 57).

^dGroup 4 = \$20,000-\$25,000 (n = 52).

^eGroup 5 = \$25,000-\$30,000 (n = 31).

^fGroup 6 = \$30,000 or more (n = 45).

^gThe higher the deficiency score, the greater the dissatisfaction.

^hBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

ⁱThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

*_p < .05 = 2.21

**_p < .01 = 3.02

Table 20

Mean Overall Satisfaction Scores: Teaching Level

Instru- ment	Group 1 ^a n	Group 2 ^b n	Group 3 ^c n	Group 1 Mean	Group 2 Mean	Group 3 Mean	Wilks' Lambda	F Ratio
NSQ	98	43	87	.69 ^d	.70 ^d	.92 ^d	.95	5.88**
MSQ	98	43	87	3.25 ^e	3.11 ^e	3.06 ^e	.97	2.90
QEJSS	98	43	87	3.52 ^f	3.48 ^f	3.31 ^f	.98	2.11

Note. F with 2 and 225 degrees of freedom.

^aGroup 1 = elementary public school teachers.

^bGroup 2 = junior high public school teachers.

^cGroup 3 = senior high public school teachers.

^dThe higher the deficiency score, the greater the dissatisfaction.

^eBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^fThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

*p < .05 = 3.00.

**p < .01 = 4.61.

***p < .001 = 6.91.

.05 p level. As Table 20 shows, however, the NSQ's F value was significant at the .01 p level.

Also similar to the results of the research question regarding the three instruments' ability to discriminate among various age groups was the fact that when the linear combinations of scales which best discriminated the three teaching levels were assembled, the MSQ's combination of scales discriminated best among the groups as shown by the Wilks' Lambda coefficients reported in Table 21. The .80 coefficient for the MSQ's selected scales indicated that they possessed more discriminatory ability than the elected scales from the NSQ (Wilks' Lambda = .95) and the QEJSS (Wilks' Lambda = .95). It should be noted that the selected scales reported in Table 21 differed somewhat from the scales in Table 22. The discriminating scales shown in Table 22 are those scales which had the largest F values of all the scales of the three instruments. However, as Table 21 reveals, some of those scales which detected differences among the groups shared variance. Discriminant function analysis retained and included only those scales which increased the discriminatory ability of the combination of scales. Hence, it was not considered as unusual for the two collections of scales (i.e., those in Table 21 and Table 22) to differ somewhat.

The general trend in satisfaction, as measured by the three instruments, was that elementary school teachers tended to be more satisfied with their jobs than were secondary school teachers. The most significant differences in the mean scores as reported in Table 22 were detected by the Achievement scales of the MSQ ($F = 9.32$) and

Table 21
Discriminant Function Selection Data: Teaching Level^a

Step	Discriminating Scale	F Ratio ^b	Wilks' Lambda	Signif- icance	Standardized Discriminant Function Coefficients	
					Function 1	Function 2
NSQ						
1.	Overall deficiency	5.88	.95	.00	- .92	-1.20
2.	Security	2.57	.93	.00	.58	.11
3.	Social	1.30	.91	.00	- .41	1.13
MSQ						
1.	Variety	3.75	.97	.02		
2.	Co-workers	5.44	.92	.00	.44	- .74
3.	Advancement	2.67	.90	.00	.19	.41
4.	Moral values	2.39	.88	.00	- .39	.23
5.	Creativity	2.46	.86	.00	- .17	-1.05
6.	Achievement	6.50	.81	.00	1.20	.01
7.	Variety (removed)	.96	.82	.00		
8.	Intrinsic satisfaction	1.63	.81	.00	- .29	1.20
9.	Security	1.27	.80	.00		
10.	Extrinsic satisfaction	1.18	.79	.00	- .34	- .17
11.	Security (removed)	.92	.80	.00		

Table 21--Continued

					Standardized Discriminant Function Coefficients	
Step	Discriminating Scale	<u>F</u> Ratio ^b	Wilks' Lambda	Signif- icance	Function 1	Function 2
QEJSS						
1.	Co-workers	9.70	.92	.00	- .68	- .26
2.	Promotions	2.30	.90	.00	.12	- .74
3.	Comfort	3.34	.88	.00	- .19	.74
4.	Challenge	1.76	.86	.00	- .42	- .10

Note. n = 228.

F ratio with 2 and 225 degrees of freedom.

^aTeaching levels included:

- Group 1 (elementary public school teachers).
- Group 2 (junior high public school teachers).
- Group 3 (senior high public school teachers).

^bF value required for entry or removal of the scales from the linear combination of scales.

Table 22
Discriminating Scales Data: Teaching Level^a

Instru- ment	Discriminating Scale	Group 1 Mean	Group 2 Mean	Group 3 Mean	Wilks' Lambda	F Ratio
NSQ	Social	.54 ^b	.62 ^b	.97 ^b	.95	6.40**
	Esteem	1.26	1.53	1.88	.95	6.40**
	Autonomy	.97	1.28	1.35	.97	3.47*
	Self-actualization	1.11	1.24	1.54	.97	4.07*
	Overall deficiency	.99	1.17	1.38	.95	5.88**
MSQ	Ability utilization	3.70 ^c	3.32 ^c	3.46 ^c	.96	4.26*
	Achievement	3.71	3.30	3.36	.92	9.32***
	Activity	3.64	3.36	3.46	.97	3.40*
	Advancement	2.69	2.30	2.57	.96	4.52*
	Co-workers	3.52	3.44	3.12	.95	5.88**
	Recognition	3.05	2.83	2.72	.97	3.67*
	Social service	3.71	3.44	3.54	.97	3.27*
	Supervision--human relations	3.24	2.96	2.85	.96	4.68**
	Supervision--technical	3.13	2.82	2.88	.97	3.56*
	Intrinsic satisfaction	3.53	3.31	3.37	.96	4.23*

Table 22--Continued

Instru- ment	Discriminating Scale	Group 1 Mean	Group 2 Mean	Group 3 Mean	Wilks' Lambda	F Ratio
MSQ	Extrinsic satisfaction	2.89	2.61	2.67	.96	4.23*
	Variety	3.07	3.09	3.09	.97	3.75*
QEJSS	Facet-specific satisfaction	3.18 ^d	3.07 ^d	3.00 ^d	.95	6.30**
	Challenge	3.49	3.40	3.28	.95	6.37**
	Co-workers	3.50	3.30	3.12	.92	9.70***
	Resource adequacy	2.67	2.33	2.59	.95	5.94**

Note. n = 228.

F ratio with 2 and 225 degrees of freedom.

^aTeaching levels included:

Group 1 (elementary public school teachers, n = 98).

Group 2 (junior high public school teachers, n = 43).

Group 3 (senior high public school teachers, n = 87).

^bThe higher the deficiency score, the greater the dissatisfaction.

^cBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^dThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

*p < .05 = 3.00.

**p < .01 = 4.61.

***p < .001 = 6.91.

by the Co-workers scales of the QEJSS ($F = 9.70$). Although the discriminant functions of the NSQ and QEJSS were difficult to interpret because all of the scale loadings on the standardized discriminant functions were quite similar in magnitude, it was easy to determine that the phenomenon separating elementary teachers from junior high school teachers and senior high school teachers was the sense of achievement the teachers perceived themselves to have received from their work. The 1.20 loading on the Achievement variable (see Table 21) was large and clearly dominated the discriminant function loadings. Another underlying discriminator in all three of the instruments' discriminant functions was satisfaction with one's co-workers or with the degree to which one's perceived social needs were met. The loadings in absolute values were: NSQ, Social, .41; MSQ, Co-workers, .44; and QEJSS, Co-workers, .68. The first discriminant function was the most important discriminator among the groups as shown by eigenvalues and by the relative percentage of variance explained by each instrument's first discriminant function (see Table 23). Only the MSQ's second discriminant function accounted for a considerable amount of the variance in the selected variables listed in Table 21. As indicated by Table 21, the highest loadings were on the Creativity and Intrinsic Satisfaction variables. Indeed, as Table 22 shows, elementary school teachers reported somewhat greater intrinsic satisfaction with their work than did secondary school teachers. The Creativity scale, although not significant at the .05 p level ($F = 2.09$) and thus not included in Table 22, was significant at the .25 p level and showed elementary school teachers as more

Table 23
Discriminant Function Data: Teaching Level^a

Instru- ment	Discrim- inant Function	Eigen- value	Relative Percent	Canonical Correla- tion	Func- tions Derived	Wilks' Lambda	Chi- Square	Signif- icance
NSQ					0	.92	19.12	.00
	1	.08	95.62	.28	1	1.00	.87	.65
	2	.05	4.38	.06				
MSQ					0	.80	49.85	.00
	1	.15	61.67	.36	1	.92	19.41	.00
	2	.09	38.33	.29				
QEJSS					0	.86	33.16	.00
	1	.11	71.17	.32	1	.96	9.78	.02
	2	.04	28.83	.21				

Note. n = 228.

^aTeaching levels included:

Group 1 (elementary public school teachers, n = 98).

Group 2 (junior high public school teachers, n = 43).

Group 3 (senior high public school teachers, n = 87).

satisfied than secondary teachers. The nature of the second discriminant function of the MSQ, therefore, was considered as intrinsic satisfaction with an emphasis on creativity and autonomy (which the Creativity scale also seemed to measure).

The classification success rate, though, put the findings about job satisfaction differences among teachers at the elementary, junior high, and senior high school levels into their proper perspective. The differences among the mean scores of the groups were not great relative to the differences in mean scores detected between administrators and teachers. Table 24 indicates that the three instruments' linear combination of scales could be expected to classify correctly the teachers according to their teaching level only about 50% of the time. Teaching level thus did not appear to be as great a moderator or determinant of job satisfaction as was the position--administrator or teacher--one held in the public school system.

Research question number 7. "Will the NSQ, MSQ, and QEJSS discriminate between public and Christian school teachers?" Only the NSQ detected significant differences on the overall satisfaction scale between public and Christian school teachers. The 8.83 F ratio indicated in Table 25 was significant at the .01 p level. Christian school teachers reported less need deficiency or greater job satisfaction than did public school teachers.

Both the MSQ and the QEJSS included scales other than Overall Satisfaction which discriminated between the two groups. The significance of the differences in the mean scores of the public and Christian school teachers reported in Table 26 was greatest for two

Table 24
Centroid Data: Teaching Level^a

Instru- ment	Group	Function 1	Function 2	Percent of Individuals Correctly Classified by Group
NSQ	1	.27	.04	
	2	.08	-.13	
	3	-.34	.02	
				45.61
MSQ	1	.41	.03	
	2	-.26	-.56	
	3	-.34	.25	
				50.88
QEJSS	1	-.31	-.12	
	2	-.07	.43	
	3	.39	-.07	
				48.25

Note. n = 228.

^aTeaching levels included:

Group 1 (elementary public school teachers, n = 98).

Group 2 (junior high public school teachers, n = 43).

Group 3 (senior high public school teachers, n = 87).

Table 25

Mean Overall Satisfaction Data: Public and
Christian School Teachers

Instru- ment	Group 1 ^a n	Group 2 ^b n	Group 1 Mean	Group 2 Mean	Wilks' Lambda	<u>R</u> Ratio
NSQ	177	51	1.25 ^c	.89 ^c	.96	8.83**
MSQ	177	51	3.13 ^d	3.24 ^d	.99	1.86
QEJSS	177	51	3.39 ^e	3.58 ^e	.99	2.96

Note. n = 228

F with 1 and 226 degrees of freedom.

^aGroup 1 = public school teachers.

^bGroup 2 = Christian school teachers.

^cThe higher the deficiency score, the greater the dissatisfaction.

^dBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^eThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

*p < .05 = 3.84

**p < .01 = 6.63.

***p < .001 = 10.83.

Table 26

Discriminating Scales Data: Public and
Christian School Teachers

Instrument	Discriminating Scale	Group 1 ^a Mean	Group 2 ^b Mean	Wilks' Lambda	F Ratio
NSQ	Esteem	1.64 ^c	1.20 ^c	.98 ^c	5.54*
	Autonomy	1.28	.82	.97	7.85**
	Self-actualization	1.39	.98	.97	6.30*
	Overall deficiency	1.26	.87	.96	8.83**
MSQ	Advancement	2.49 ^d	2.84 ^d	.96 ^d	9.64**
	Moral values	3.72	4.02	.97	8.18**
	Supervision--human relations	3.16	2.64	.94	13.55***
	Supervision--technical	3.07	2.65	.95	11.70***
	Working conditions	3.00	3.36	.97	6.41*
	Intrinsic satisfaction	3.40	3.55	.98	4.41*
QEJSS	Facet-free satisfaction	3.68 ^e	4.08 ^e	.98 ^e	4.68*
	Financial rewards	2.98	2.78	.98	4.38*
	Resource adequacy	3.32	3.13	.97	6.59*

Note. n = 228

F with 1 and 226 degrees of freedom.

^aGroup 1 = public school teachers.

^bGroup 2 = Christian school teachers

^cThe higher the deficiency score, the greater the dissatisfaction.

^dBased on a Likert-type scale with 1 indicating very low satisfaction and 5 indicating very high satisfaction.

^eThe mean of the 1-4 point facet-specific scale and the mean of the 1-5 point facet-free scale. Higher values denote higher satisfaction.

* $p < .05 = 3.84$.

** $p < .01 = 6.63$.

*** $p < .001 = 10.83$.

of the MSQ's scales, Supervision--Human Relations and Supervision--Technical. The Christian school teachers were more satisfied than the public school teachers with dimensions of their work measured by all of the MSQ's discriminating scales listed in Table 26, except with the supervision dimension measured by the two MSQ scales. The difference between the dissatisfaction of the Christian school teachers as measured by these two scales and their satisfaction reflected in the other scales was striking. It was mirrored, however, in the QEJSS' scales, Financial Rewards and Resource Adequacy. Christian school teachers were less satisfied than their public school counterparts with the dimensions measured by these two scales. Indeed, Resource Adequacy, a potpourri of questions dealing with the adequacy of resources--including supervision--needed for the effective work on the job, detected mean score differences between Christian and public school teachers more highly significant ($F = 6.50$) than any of the other mean score differences detected by the QEJSS scales. Clearly, the Christian school teachers in the sample had a discontentment with supervisors not shared by the public school teachers.

Table 27 reports how the scales of the three instruments selected by discriminant function analysis compared in discriminatory ability. The eigenvalue for the NSQ of .35 was nearly twice as large as the eigenvalue derived for the QEJSS (.18) and 35 times as large as the eigenvalue computed for the NSQ (.01). The Wilks' Lambda of .74, the canonical correlation of .51, and the CHI-square of 66.35 all pointed to the superior discriminatory ability of the selected scales from MSQ over those selected for the NSQ and QEJSS.

Table 27

Discriminant Function Data: Public^a and Christian^b School Teachers

Instru- ment	Discrim- inant Function	Eigen- value	Relative Percent	Canonical Correla- tion	Func- tions Derived	Wilks' Lambda	Chi- Square	Signif- icance
NSQ					0	.99	2.72	.10
	1	.01	100.00	.11				
MSQ					0	.74	66.35	.00
	1	.35	100.00	.51				
QEJSS					0	.85	36.88	.00
	1	.18	100.00	.39				

Note. n = 228.

^aGroup 1 (public school teachers, n = 177).

^bGroup 2 (Christian school teachers, n = 51).

Determining the nature of the discriminant functions was simple in the case of the NSQ. The NSQ's Overall Deficiency scale accounted for 100% of the discriminatory ability of its function (see Table 28). Again, whatever the Overall Deficiency scale measured was the attribute which discriminated the job satisfaction of public school teachers from the job satisfaction of Christian school teachers when measured by the NSQ. The QEJSS' loadings were more difficult to interpret. The loadings were extremely high--3.81 on the Facet-free scale, -5.19 on the Overall Satisfaction scale, and 1.27 on the Resource Adequacy scale (see Table 28). Table 26 shows that the Christian school teachers were less satisfied with the Financial Rewards and Resource Adequacy associated with their jobs than were the public school teachers. On the other hand, the Christian school teachers were more satisfied than public school teachers with whatever the Facet-free scale measured (see Table 26). Because the loadings on the discriminant function were difficult to interpret interpretations of the nature of the function may be little more than conjecture. The most conservative assessment of its nature was that it seemed to indicate an overtone of extrinsic satisfaction, as suggested by loadings on Resource Adequacy, Financial Rewards, and Comfort. It may very well be, however, that the high loadings on the Overall and Facet-free scales are oriented more heavily toward an intrinsic satisfaction, thus suggesting that the discriminant function is a bipolar job satisfaction continuum ranging from extrinsic to intrinsic satisfaction.

Table 28

Discriminant Function Selection Data: Public^a and
Christian^b School Teachers

Step	Discriminating Scale	F Ratio ^c	Wilks' Lambda	Signif- icance	Standardized Discriminant Function Coefficients
NSQ					Function 1
1.	Overall deficiency	8.83	.96	.00	1.00
MSQ					
1.	Supervision--human relations	13.55	.94	.00	-.46
2.	Company policy and procedures	22.50	.86	.00	.42
3.	Moral values	13.98	.81	.00	.46
4.	Advancement	7.64	.78	.00	.50
5.	Supervision--technical	4.05	.77	.00	-.58
6.	Independence	2.42	.76	.00	-.32
7.	Responsibility	2.40	.75	.00	.29
8.	Recognition	1.50	.74	.00	-.22
9.	Working conditions	1.11	.74	.00	.14
QEJSS					
1.	Resource adequacy	6.59	.97	.01	1.27
2.	Overall satisfaction	4.52	.91	.00	-5.19
3.	Financial rewards	5.78	.89	.00	.77
4.	Facet-free satisfaction	7.89	.86	.00	3.81
5.	Comfort	3.01	.85	.00	.34

Note. n = 228

F ratio with 2 and 225 degrees of freedom.

^aGroup 1 = public school teachers, n = 177.

^bGroup 2 = Christian school teachers, n = 51.

^cF value required for entry or removal of the scales from the linear combination of scales.

Table 28 reveals that the highest loadings on the MSQ's discriminant function occurred on the following scales: Supervision--Technical (-.58), Advancement (.50), Supervision--Human Relations (-.46), Moral Values (.46), and Company Policies and Procedures (.42). When the investigator regarded the Advancement scale and the Moral Values scale as pertaining to benefits and freedoms teachers enjoyed at the discretion of their supervisors, the nature of the discriminant function became clear: The best discriminator between public and Christian school teachers as measured by the MSQ was the teachers' attitudes toward their supervisors. Public school teachers expressed greater satisfaction with their supervisors than did Christian school teachers.

The discriminant functions derived for the MSQ and QEJSS were clearly superior in discriminatory ability to the functions derived for the NSQ, as indicated in Table 29. The centroids are the standardized mean scores calculated for each group on the scales selected as most discriminatory by the discriminant function analysis. The separation between the centroids calculated for the MSQ and the QEJSS was greater than the separation between the centroids calculated for the NSQ, thus indicating the superior abilities of the discriminant functions derived for the MSQ and QEJSS in discriminating between Christian and public school teachers. Moreover, the percentages of individuals correctly classified by the discriminant functions of the MSQ and the QEJSS, as indicated in Table 29, were markedly superior to the percentage of individuals correctly classified by the NSQ's discriminant function. The MSQ, QEJSS, and NSQ classification success

Table 29
Centroid Data: Public^a and Christian^b School Teachers

Instru- ment	Group	Function 1	Percent of Individuals Correctly Classified by Group
NSQ	1	.10	
	2	-.36	
			55.70
MSQ	1	-.27	
	2	.95	
			75.44
QEJSS	1	.21	
	2	-.73	
			70.00

Note. n = 228.

^aGroup 1 (public school teachers, n = 177).

^bGroup 2 (Christian school teachers, n = 51).

rates were 75.44%, 70.00%, and 55.70%, respectively.

Summary. Discriminant function analysis conducted in response to the first seven research questions prompted the following findings about the relative discriminatory validity of the NSQ, MSQ, and QEJSS job satisfaction instruments:

1. The QEJSS' Overall Satisfaction scale and selected combinations of subscales discriminated less effectively among groups than did the overall and combinations of scales of the MSQ and sometimes of the NSQ.
2. The NSQ's Overall Deficiency scale discriminated among groups more effectively than any of its subscales.
3. The NSQ's Overall Deficiency scale discriminated among groups as well as or more effectively than the MSQ's Overall Satisfaction scale.
4. Combinations of the MSQ scales selected by discriminant function analysis for their high discriminatory ability discriminated more effectively among groups than did combinations of the NSQ scales.

In short, the MSQ was superior to the other two instruments in discriminatory ability. The NSQ's Overall Deficiency scale was effective in detecting differences among groups, but when compared to the MSQ, it was relatively ineffective in discriminating among groups when only the most discriminating variables from each of the instruments were used. The QEJSS' failure to discriminate among groups effectively was a major disappointment. The impressive procedures through which it was developed, and its current use as a measure of job satisfaction in national studies of working life (e.g.,

Quinn & Staines, 1979) had seemed to suggest that the instrument possessed high discriminatory ability.

The discriminant function analyses led to the investigator's posing the following questions related to the remaining two research questions.

1. Did the predominant importance of the NSQ's Overall Deficiency scale indicate the presence of a single underlying factor in the instrument's questions as opposed to the five Maslow categories it allegedly measured?

2. Did the NSQ measure some aspect of job satisfaction different from aspects measured by the MSQ and QEJSS? Correlational analyses and factor analyses provided information with which to answer these questions and the remaining two research questions.

Correlational Analyses

Research question number eight was, "Will the scales of the NSQ, MSQ, and QEJSS correlate positively?" Correlational analyses of the NSQ, MSQ, and QEJSS were conducted to determine the convergent and discriminant validity of the three instruments. The analytic procedures used were those specified by Campbell and Fiske (1959). Tables presented in this report were assembled according to directions given by Campbell and Fiske for creating multitrait-multimethod correlation matrices. The criteria for convergent and discriminant validity suggested by Campbell and Fiske constituted the basis for the analyses to derive answers to the research question.

Those scales which correlated at a level of at least .40, as indicated by correlation matrices of all the instruments' scales were included in the tables. Scales with more than one intercorrelation higher than .40 had their highest correlated scale included in the matrix. Thus, the multitrait-multimethod analyses began with the assumption that scales correlating .40 or less did not meet the first criterion advanced by Campbell and Fiske. The negative signs which preceded all of the correlations between the scales of the NSQ and MSQ were omitted from this report and its tables to facilitate discussion of the findings.

Criterion number one. "Entries in the validity diagonal should be significantly different from zero and sufficiently large to encourage further examination of validity" (Campbell & Fiske, 1959, p. 82). The scales included in Table 30 and Table 31 were those which most highly intercorrelated. In addition, as Table 32 shows, the MSQ's Company Policies and Procedures scale correlated .41 with the NSQ's Autonomy scale. Other relatively high correlations, not included in Table 30 but which correlated above .40, were those between the NSQ's Self-actualization scale and the following MSQ scales: Achievement (.53), Advancement (.49), Recognition (.44), Social Status (.44), and Variety (.45).

Table 31 reveals that the correlations between the QEJSS and the MSQ tended to be higher than those between the NSQ and the MSQ, thus suggesting higher convergent validity between the QEJSS and the MSQ than between the NSQ and the MSQ. Moreover, Table 33 shows that each of the QEJSS' scales, except Comfort and Co-workers, measuring

Table 30

MSQ, NSQ Multitrait-Multimethod Matrix^a

		MSQ Scales					NSQ Scales				
Traits		1	2	3	4	5	1	2	3	4	5
MSQ Scales	1. Security										
	2. Co-workers	.34									
	3. Social status	.39	.31								
	4. Company policies and procedures	.39	.36	.55							
	5. Ability utilization	.30	.39	.50	.39						
NSQ Scales	1. Security	<u>.58</u>	.22	.09	.17	.10					
	2. Social	.22	<u>.45</u>	.19	.25	.21	.26				
	3. Esteem	.32	.26	<u>.55</u>	.41	.31	.36	.37			
	4. Autonomy	.20	.25	.35	<u>.46</u>	.29	.28	.41	.57		
	5. Self-actualization	.32	.27	.44	.46	<u>.53</u>	.28	.39	.62	.58	

Note. The validity diagonal is comprised of those values which are underlined. Each heterotrait-monomethod triangle is enclosed by a solid line. Each heterotrait-heteromethod triangle is enclosed by a broken line.

^aNegative signs which preceded all correlations between scales of the NSQ and MSQ were omitted.

*p < .001.

Table 31
MSQ, QEJSS Multitrait-Multimethod Matrix

	Traits	MSQ Scales						QEJSS Scales					
		1	2	3	4	5	6	1	2	3	4	5	6
MSQ Scales	1. Working conditions												
	2. Ability utilization	.31											
	3. Compensation	.49	.32										
	4. Co-workers	.37	.36	.22									
	5. Supervision-- human relations	.23	.34	.38	.46								
	6. Advancement	.40	.44	.32	.16	.28							
QEJSS Scales	1. Comfort	<u>.40</u>	.20	.32	<u>.18</u>	.26	.19						
	2. Challenge	.23	<u>.56</u>	.22	.29	.30	.27	.30					
	3. Financial rewards	.29	.21	<u>.61</u>	<u>.14</u>	.30	.26	.37	.37				
	4. Co-workers	.23	.23	<u>.10</u>	<u>.67</u>	.30	.19	.26	.37	.23			
	5. Resource adequacy	.24	.35	.30	<u>.46</u>	<u>.67</u>	.29	.37	.54	.40	.46		
	6. Promotions	.07	.24	.34	<u>.10</u>	<u>.29</u>	<u>.63</u>	<u>.14</u>	.22	.21	<u>.15</u>	.41	

Note. The validity diagonal is comprised of those values which are underlined. Each heterotrait-monomethod triangle is enclosed by a solid line. Each heterotrait-heteromethod triangle is enclosed by a broken line.

$p < .001$, except where noted.

Table 32

Correlation Matrix of the NSQ, MSQ Scales
(n = 268)

Discriminating Scale	1	2	3	4	5	6
<u>NSQ</u>						
1. Security	---					
2. Social	.26	---				
3. Esteem	.36	.37	---			
4. Autonomy	.28	.41	.57	---		
5. Self-actualization	.28	.39	.62	.58	---	
6. Overall need deficiency	.65	.62	.81	.76	.78	---
<u>MSQ</u>						
1. Ability utilization	.10	.21	.31	.29	.53	.39
2. Achievement	.14	.31	.39	.31	.53	.45
3. Activity	.15	.17	.26	.22	.37	.32
4. Advancement	.11	.18	.32	.31	.49	.38
5. Authority	.14	.21	.20	.23	.31	.29
6. Company policies and procedures	.17	.25	.41	.46	.46	.48
7. Compensation	.21	.16	.36	.27	.42	.39
8. Co-workers	.21	.45	.26	.25	.27	.38
9. Creativity	.10	.22	.24	.34	.40	.35
10. Independence	.12	.18	.07	.11	.20	.18
11. Moral values	.06	.13	.17	.24	.25	.23
12. Recognition	.17	.31	.42	.35	.44	.46
13. Responsibility	.22	.26	.24	.35	.41	.37

Table 32--Continued

Discriminating Scale	1	2	3	4	5	6
14. Security	.58	.22	.32	.20	.32	.48
15. Social service	.09	.29	.26	.30	.37	.35
16. Social status	.09	.19	.55	.35	.44	.44
17. Supervision--human relations	.12	.22	.31	.38	.33	.36
18. Supervision--technical	.06	.22	.28	.33	.32	.32
19. Variety	.21	.22	.26	.26	.45	.38
20. Working conditions	.27	.29	.25	.27	.37	.40
21. Intrinsic satisfaction	.22	.29	.37	.36	.52	.48
22. Extrinsic satisfaction	.18	.29	.45	.45	.53	.52
23. Overall satisfaction	.29	.43	.41	.42	.51	.56

Note. $p < .001$.

Table 33
Correlation Matrix of the QEJSS, MSQ Scales
(n = 268)

Discriminating Scale	1	2	3	4	5	6	7	8	9
<u>QEJSS</u>									
1. Overall satisfaction	---								
2. Facet-free	.97	---							
3. Facet-specific	.63	.44	---						
4. Comfort	.36	.25	.57	---					
5. Challenge	.53	.43	.65	.30	---				
6. Financial rewards	.48	.36	.66	.37	.37	---			
7. Relations with co-workers	.36	.24	.62	.26	.37	.23	---		
8. Resource adequacy	.50	.35	.79	.37	.54	.40	.48	---	
9. Promotions	.31	.17 (.003)	.64	.14 (.013)	.22	.21	.15 (.009)	.41	---
<u>MSQ</u>									
1. Ability utilization	.43	.37	.43	.20	.56	.21	.23	.35	.24
2. Achievement	.40	.33	.45	.25	.50	.19	.30	.44	.20

Table 33--Continued

Discriminating Scale	1	2	3	4	5	6	7	8	9
3. Activity	.27	.23	.29	.19	.35	.13 (.014)	.22	.28	.08 (.01)
4. Advancement	.39	.30	.51	.19	.27	.26	.19	.29	.63
5. Authority	.25	.19	.36	.14 (.009)	.28	.20	.27	.32	.20
6. Company policies and procedures	.45	.37	.53	.29	.25	.38	.20	.47	.41
7. Compensation	.38	.30	.50	.32	.22	.61	.10 (.045)	.30	.34
8. Co-workers	.29	.20	.45	.18 (.002)	.29	.14 (.01)	.67	.46	.10 (.045)
9. Creativity	.35	.30	.39	.24	.53	.17 (.003)	.21	.37	.14 (.01)
10. Independence	.14 (.012)	.10 (.054)	.20	.15 (.006)	.28	.09 (.06)	.14 (.009)	.09 (.075)	.10 (.056)
11. Moral values	.23	.19	.25	.16 (.003)	.32	.11 (.04)	.14 (.013)	.28	.08 (.095)
12. Recognition	.46	.37	.55	.39	.36	.29	.36	.55	.29
13. Responsibility	.34	.27	.41	.21	.51	.17 (.002)	.29	.41	.15 (.005)
14. Security	.32	.26	.38	.26	.22	.48	.22	.20	.12 (.025)
15. Social service	.28	.24	.31	.19	.36	.11 (.035)	.27	.29	.10 (.052)
16. Social status	.42	.34	.49	.31	.35	.33	.23	.35	.35
17. Supervision--human relations	.34	.24	.52	.26	.30	.30	.30	.67	.29

Table 33--Continued

Discriminating Scale	1	2	3	4	5	6	7	8	9
18. Supervision--technical	.33	.23	.54	.28	.27	.31	.26	.66	.35
19. Variety	.36	.30	.40	.20	.49	.24	.26	.29	.17 (.003)
20. Working conditions	.26	.20	.35	.40	.23	.29	.23	.24	.07 (.144)
21. Intrinsic satisfaction	.43	.35	.49	.29	.54	.28	.31	.41	.22
22. Extrinsic satisfaction	.47	.39	.68	.38	.36	.47	.30	.64	.49
23. Overall satisfaction	.65	.35	.61	.40	.43	.37	.50	.54	.25

Note. $p < .001$ unless otherwise noted.

specific facets of job satisfaction correlated at a level above .40 with more than one MSQ scale. The QEJSS' Challenge scale correlated at a level above .40 with four MSQ scales other than Ability Utilization, the intercorrelation for which was recorded in Table 31. The four MSQ scales were: Achievement (.50), Creativity (.53), Responsibility (.51), and Variety (.49). The Financial Rewards scale correlated above .40 with the MSQ's Security scale (.48). Resource Adequacy, however, correlated relatively highly with more MSQ scales than did any other QEJSS scale. In addition to the correlation with Supervision--Human Relations reported in Table 31, the Resource Adequacy scale correlated above the .40 level with six NSQ scales: Achievement (.44), Company Policies and Procedures (.47), Co-workers (.46), Recognition (.55), Responsibility (.41), and Supervision--Technical (.66).

Examination of Table 30 and Table 31 revealed that the validity diagonals do differ from zero and are "sufficiently large to encourage further examination of validity" (Campbell & Fiske, 1959, p. 82). The first criterion for convergent validity, therefore, was met. The QEJSS clearly demonstrated greater convergent validity with the criterion measure, the MSQ, than did the NSQ.

Criterion number two. "A validity diagonal value should be higher than the values lying in its column and row in the heterotrait-heteromethod triangles" (p. 82). Comparison of Tables 30 and 31 suggested that although the criterion was met by both the QEJSS' and NSQ's diagonal validity values, the diagonal validity values for the QEJSS were markedly higher than the values for the NSQ relative to

their respective column and row numbers in the heterotrait-heteromethod triangles. In fact, as Table 31 shows, the NSQ's heterotrait-monomethod triangle contained values nearly similar in magnitude to the values on the validity diagonal. This similarity renewed doubts first raised by the discriminant function analyses about whether the NSQ scales were measuring separate dimensions of need deficiency or job satisfaction. Although much the same point could be made about the values in MSQ heterotrait triangles included in Tables 30 and 31, the scales correlating most highly one with another in the MSQ heterotrait-monomethod triangles, were correlated along the pattern of the two factor loadings claimed by the test developers for the MSQ--intrinsic and extrinsic satisfaction. For example, in Table 31, Compensation correlated at .49 with Working Conditions: Both were alleged by the test constructors to measure extrinsic satisfaction (Weiss et al, 1967, p. 4). The pattern of high correlations between the MSQ's scales of the same factor was disrupted most noticeably, however, by the correlation of .55 between the Company Policies and Procedures scale and the Social Status scale. Otherwise, the correlations were consistent with the two factor explanation of the MSQ's measurement of job satisfaction. In short, the second criterion of discriminant validity was best met by the QEJSS and not by the NSQ.

Criterion number three. "A variable [must] correlate higher with an independent effort to measure the same trait than with measures designed to get at different traits which happen to employ the same method" (Campbell & Fiske, 1959, p. 83). As Campbell and Fiske explained, "This involves comparing [a given scale's value] in the

validity diagonals with its values in the heterotrait-monomethod triangles" (p. 83). As Tables 30 and 31 indicate, both the scales of the NSQ and the QEJSS only partially met the criterion. The Self-actualization scale from the NSQ highly correlated with the MSQ's Social Status scale (.44), Recognition scale (.44), and Company Policies and Practices scale (.46). These correlations suggested that the Self-actualization scale did not discriminate effectively: Satisfaction with company policies seems quite different from satisfaction with social status and recognition. An alternative explanation, however, might be that company policies and procedures are perceived by teachers to preclude their becoming self-actualized and thus receiving recognition and higher social status. If so, the Self-actualization scale reflected discriminant validity, as evidenced by its high correlations with the Company Policies and Procedures scale of the MSQ. Nonetheless, the Recognition and Social Status scales of the MSQ seemed closer to the NSQ's Esteem scale in meaning, an interpretation supported by its high correlations with the MSQ's Recognition scale (.42) and Social Status scale (.55) as shown in Table 32. Thus, the investigator determined on the basis of the third Campbell and Fiske criterion that it is doubtful that the NSQ's Self-actualization scale possessed discriminant validity.

Table 32 appeared at first glance also to indicate indiscriminant correlations between the QEJSS and the MSQ. The investigator questioned whether Resource Adequacy was intended to include dimensions such as Achievement (.44), Recognition (.55), and Responsibility (.41). Otherwise, though, the QEJSS scales seemed to measure

what they apparently were intended to measure, as evidenced by the differences between the highly correlated scales and scales with low correlations (e.g., the correlations of the QEJSS' Compensation and Co-workers scales with the Co-workers scale of the MSQ reported in Table 33). In short, the QEJSS selected scales met the third criterion for discriminant validity better than did the NSQ's selected scales.

Criterion number four. "The same pattern of trait interrelationship [must] be shown in all of the heterotrait triangles of both the monomethod and heteromethod blocks" (p. 83). This criterion was only occasionally met by the scales of the NSQ and QEJSS. Similar patterns of correlation sizes were most noticeable in the triangles shown in Table 30. Less discernable were the patterns reflected in Table 31. The correlation of .40 between the MSQ's Working Conditions and Advancement scales contrasted sharply with the .14 correlation between the Promotions and Comfort Scales. The comparatively low validity diagonal between the Comfort scale and Working Conditions scale (.40) may, in part, explain the dissimilarity of the correlations at the angles of the triangles. The Comfort scale shared only 16% of the total variance possible with the Advancement scale. Hence, quite different aspects of working conditions may have been measured by the two variables. The evidence for discriminant validity of the scales of either the NSQ or the QEJSS on the fourth criterion, therefore, was not compelling. Rather the data were of such a nature as to allow a variety of interpretations. The investigator's interpretation was that only a slight indication of discriminant validity could

be discerned with the fourth criterion.

Summary. Selected scales from the NSQ and the QEJSS demonstrated convergent validity with selected scales from the MSQ. The strength and appropriateness of convergence with the MSQ, however, differed for the NSQ and QEJSS. The QEJSS' selected scales converged more strongly and appropriately with the selected MSQ scales than did the selected scales from the NSQ. Moreover, as Table 32 and Table 33 indicate, the correlation between the MSQ's Overall Satisfaction score and the QEJSS Overall Satisfaction score was higher (.65) than the correlation between the MSQ's Overall Satisfaction scale and the MSQ's Overall Need Deficiency score (.56). Expressed in terms of variance, 42.25% of the variance between the QEJSS and the MSQ was shared compared with 31.36% of the variance between the NSQ and MSQ. These variance data and the multitrait-multimethod analyses suggested that the QEJSS possessed greater convergent validity with the MSQ than did the NSQ. Moreover, the discriminant diagonal validity values of the scales common to the NSQ, MSQ, and QEJSS suggested that the QEJSS manifested greater discriminant validity than did the NSQ.

Factor Analysis

In accordance with the Herman and Hulin (1973) design, principal axis factor analyses with R^2 communality estimates in the diagonals and varimax and oblimax rotations were conducted on the NSQ's "Is Now," "Should be," and "Deficiency" scores. Before the factor analytic procedures were selected, however, correlation matrices of the items on the "Is Now," "Should Be," and "Deficiency" response

categories were prepared. As shown by Tables 34, 35, and 36, the 13 questions of the NSQ highly intercorrelated. The intercorrelations were particularly great in the case of the "Is Now" scale, as shown in Table 34. As the reliability data indicated in Table 37, the "Is Now" scale was the most reliable of the three response scales. The "Deficiency" scale was the least reliable, perhaps in part, because as Guilford (1954) noted: The reliability of a difference score "comes from two fallible scores and the error variances from them summate" (p. 393). On the other hand, the reliability of the "Should Be" response category was likely affected by its requiring respondents to speculate about what, in their minds, constituted an appropriate level of need fulfillment. It was understandable, therefore, that the reliability of the "Should Be" scale and the intercorrelations among its 13 question items were lower than were their counterparts on the "Is Now" scale. The chances for measurement error, present in any score, were increased by the projective nature of the questions. Finally, Guilford (1954) summarized the relationship between high item intercorrelations and validity well: "High intercorrelations of components detract from the validity of the composite" (p. 393). In short, the NSQ's scales intercorrelated highly and thus threatened the NSQ's validity as a measure of Maslow's hierarchy of needs.

The high item correlations also suggested the likelihood of deriving fewer factors than the five need categories the NSQ had been purported to measure. Indeed, Table 38 shows that one factor accounted for as much as 90.2% of the total variance in responses to the question items when principal axis factor analysis with iterations

Table 34

Pearson r Correlations: NSQ "Is Now" Items
(n = 268 teachers and administrators)

Item (abbreviated)	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Opportunity for personal growth	---												
2. Feeling of security	.29	---											
3. Feeling of self-esteem	.44	.42	---										
4. Opportunity to set goals	.38	.33	.49	---									
5. Opportunity to determine methods	.41	.28	.44	.61	---								
6. Authority	.37	.40	.58	.43	.51	---							
7. Opportunity to help people	.35	.25	.32	.41	.37	.38	---						
8. Prestige inside school	.31	.32	.50	.45	.42	.54	.36	---					
9. Prestige outside school	.30	.22	.55	.35	.32	.49	.34	.50	---				
10. Opportunity to develop friendships	.20	.38	.41	.30	.32	.42	.30	.43	.30	---			
11. Feeling of accomplishment	.36	.38	.60	.43	.37	.52	.41	.52	.55	.50	---		
12. Feeling of self-fulfillment	.39	.40	.59	.36	.39	.43	.41	.45	.44	.46	.73	---	
13. Opportunity for independent thought	.37	.35	.49	.47	.50	.49	.43	.43	.44	.42	.55	.56	---

Note. $p < .001$.

Table 35

Pearson r Correlations: NSQ "Should Be" Items
(n = 268 teachers and administrators)

Item (abbreviated)	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Opportunity for personal growth	---												
2. Feeling of security	.23	---											
3. Feeling of self-esteem	.26	.46	---										
4. Opportunity to set goals	.30	.40	.40	---									
5. Opportunity to determine methods	.25	.32	.38	.63	---								
6. Authority	.18	.36	.34	.28	.37	---							
7. Opportunity to help people	.18	.20	.20	.28	.27	.28	---						
8. Prestige inside school	.14	.33	.31	.22	.29	.41	.32	---					
9. Prestige outside school	.16	.36	.40	.31	.40	.51	.29	.66	---				
10. Opportunity to develop friendships	.23	.31	.34	.25	.27	.26	.21	.41	.37	---			
11. Feeling of accomplishment	.24	.31	.38	.33	.40	.23	.19	.29	.33	.43	---		
12. Feeling of self-fulfillment	.29	.34	.38	.37	.45	.32	.32	.33	.39	.40	.62	---	
13. Opportunity for independent thought	.22	.35	.32	.35	.44	.30	.26	.27	.35	.33	.38	.50	---

Note. $p < .001$.

Table 36

Pearson r Correlations: NSQ Deficiency Items
($n = 268$ teachers and administrators)

Item (abbreviated)	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Opportunity for personal growth	---												
2. Feeling of security	.13*	---											
3. Feeling of self-esteem	.42	.30	---										
4. Opportunity to set goals	.40	.13*	.39	---									
5. Opportunity to determine methods	.47	.17	.35	.62	---								
6. Authority	.31	.32	.51	.33	.44	---							
7. Opportunity to help people	.20	.04**	.19	.22	.28	.26	---						
8. Prestige inside school	.21	.34	.38	.29	.32	.45	.17*	---					
9. Prestige outside school	.20	.22	.48	.15*	.20	.47	.20	.45	---				
10. Opportunity to develop friendships	.16	.31	.25	.16*	.17*	.28	.12*	.37	.13*	---			
11. Feeling of accomplishment	.37	.28	.51	.31	.30	.48	.23	.47	.48	.36	---		
12. Feeling of self-fulfillment	.39	.27	.49	.22	.25	.37	.24	.42	.39	.23	.68	---	
13. Opportunity for independent thought	.28	.24	.34	.35	.41	.45	.30	.35	.32	.23	.42	.42	---

$p < .001.$

* $p < .05$ or less.

** $p < .05$ or more.

Table 37

Cronbach Alpha Reliability Estimates:
NSQ and MSQ Combined Scales

Instrument	Scales	Alpha Coefficient
NSQ	"Is Now"	.84
	"Should Be"	.81
	"Deficiency"	.76 ^a
MSQ	Intrinsic Satisfaction	.92
	Extrinsic Satisfaction	.86
	Overall Satisfaction	.93

^aAs noted in Chapter I of this report, Cronbach's Alpha is not appropriate as an estimate of the internal consistency of a difference score in part because of violation of the normality assumptions associated with conventional estimates of internal consistency. Bunda,⁶ however, suggested that of the reliability coefficients available, Cronbach's Alpha would be the most appropriate measure of the NSQ's difference score reliability.

⁶Bunda, M. Personal telephone conversation, June 10, 1980.

Table 38

NSQ "Is Now," "Should Be," "Deficiency" Scales'
 Factor Variance Data Using Principal
 Factor With Iterations

Scale	Factors	Eigenvalue	Percent of Variance
"Is Now"	1	5.61	90.2
	2	.60	9.8
"Should Be"	1	4.45	85.6
	2	.75	14.4
"Deficiency"	1	4.45	76.5
	2	.93	16.0
	3	.43	7.4

was conducted. The extremely large sizes of the eigenvalues derived for the first factor of all three response categories overshadowed the small sizes of the eigenvalues computed for the other factors. The very high proportion of total variance accounted for by the first factor paralleled the findings of Herman and Hulin (1973):

The results of the factor analysis of the intercorrelations of the first 13 need deficiency items indicated that the first dimension accounted for 88% of the common variance. Subsequent factors accounted for 12%, 8%, 5%, and 2%, respectively, of the common variance. Factor analyses were repeated on the need, have, importance, and need deficiency weighted by importance responses. The results were similar in all cases. (p. 121)

As Herman and Hulin also noted, however, the predominantly one factor loadings may have been indicating "a very high degree of trait

variance among the 13 items, measuring the 5 levels of need satisfaction; a high degree of method variance; or both" (p. 121). Herman and Hulin, though, concluded that: "The pattern of root sizes suggests that a one-dimensional solution would be the most parsimonious interpretation and one which is consistent throughout the analysis" (p. 121). The results of the principal axis factor analyses conducted in this investigation led the researcher to a similar interpretation: The NSQ measured teachers' and administrators' need deficiencies with a single dimension rather than five distinct dimensions corresponding to the Maslow's (1954) hierarchy of needs.

The loadings on the questions of the NSQ on the "Is Now" response category suggested the nature of the job satisfaction dimension that the instrument measured. As Table 39 shows, the highest loadings occurred on questions dealing with self-esteem (.76), authority (.72) accomplishment (.79), self-fulfillment (.74), and independence (.71). As explained in Chapter III of this report, the self-esteem question (item number 3) was one of three questions comprising the Self-esteem scale of the NSQ. Authority (item number 6) and independence (item number 13) were two of the three questions comprising the Self-actualization scale. The underlying attribute of the three scales--Autonomy, Self-esteem, and Self-actualization--reflected a desire for self-determination, self-fulfillment, and self-expression. Although these desires generally conformed to Maslow's higher order needs, the factor structure and the loadings on the questions comprising the three scales--Autonomy, Self-esteem, and Self-actualization--failed to identify the desires as conceptually distinct. For purposes of

Table 39
NSQ "Is Now," "Should Be," and "Deficiency" Items Factor Matrices
Using Principal Factor With Iterations

Abbreviated Question Item	"Is Now"		"Should Be"		"Deficiency"		
	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 3
1. Opportunity for personal growth	.53	.14	.37	.17	.53	.25	-.23
2. Feeling of security	.51	-.04	.56	-.01	.41	-.18	.26
3. Feeling of self-esteem	.76	-.08	.60	.06	.68	-.06	-.07
4. Opportunity to set goals	.65	.37	.59	.28	.54	.47	.02
5. Opportunity to determine methods	.65	.45	.66	.23	.62	.59	.08
6. Authority	.72	.06	.56	-.20	.70	-.03	.17
7. Opportunity to help people	.55	.09	.42	-.05	.35	.11	-.06
8. Prestige inside school	.67	-.01	.62	.50	.63	-.19	.25
9. Prestige outside school	.62	-.12	.70	-.44	.56	-.25	.02
10. Opportunity to develop friendships	.57	-.15	.55	-.04	.40	-.13	.23
11. Feeling of accomplishment	.79	-.34	.61	.20	.75	-.26	-.18
12. Feeling of self-fulfillment	.74	-.28	.70	.21	.69	-.27	-.34
13. Opportunity for independent thought	.71	.03	.59	.15	.59	.06	.03

discussion, the investigator labeled the nature of the satisfaction dimension measured by the NSQ on the "Is Now" scale as "psychological self-interest."

Loadings on the "Should Be" and "Deficiency" response categories were somewhat similar to those on the "Is Now" scale as shown in Table 39. Indeed, the nature of the second factor derived from the "Deficiency" response category paralleled that derived from the "Is Now" response category. Although much less important in terms of the total variance accounted for among the question items, the nature of the second factor merited consideration. Examination of the "Is Now" and "Deficiency" response categories showed that the second factor pertained to participation in goal setting and participation in choosing methods of teaching. Nonetheless, principal axis factor analysis clearly suggested that the NSQ predominantly measured one dimension of job satisfaction, a dimension that seemed to be related to "psychological self-interest."

Results from the varimax rotation which maximized the possibility of detecting factors possibly missed by the principal axis factor analysis were generally similar to the results derived from principal axis factor analysis. However, the relative importance of the factors was not defined in terms of the amount of total variance for which the factors accounted because as Nie et al. (1975) explained:

The importance of a factor as indicated by "variance accounted for" is of not particular interest in a terminal solution (rotated one), because the importance of a factor in a terminal solution often reflects only the numbers of variables for a given factor included in the data relative to the total number of variables. (p. 478)

Thus, the investigator was most interested in determining the pattern of question loadings on the derived factors. In the case of the "Is Now" response category, interpretation of the loadings was easy since, as Table 40 shows, the loadings conformed to those derived by the principal axis factor analysis. The nature of the job satisfaction which was measured could be regarded as "psychological self-interest." The loadings on the "Should Be" and "Deficiency" response categories, though, indicated that participation in goal setting and selection of teaching methods constituted the essence of the first factor. However, due to the chances for measurement error inherent in a response category such as the "Should Be" category of the NSQ, which required individuals to speculate about an ideal state, and in a response category such as the "Deficiency" category which reflected the errors of measurement of both the "Is Now" and the "Should Be" categories, the pattern of question loadings on the "Is Now" category provided the most meaningful information about the dimensionality of the NSQ instrument.

Thus, the results of the varimax rotation were generally consistent with the one-dimensional explanation offered for the results of the principal axis factor analysis.

Table 41 presents the results of the oblimax factor rotation. Loadings on the first factor of the "Is Now" response category reflected the pattern observed with the principal axis factor analysis and the varimax rotated factor analysis. "Psychological self-interest" seemed to characterize aptly the nature of the first factor. Loadings on the second factor of the "Is Now" scale were highest with

Table 40
NSQ "Is Now," "Should Be," and "Deficiency" Items Factor Matrices
Using Varimax Rotation

Abbreviated Question Item	"Is Now"		"Should Be"		"Deficiency"		
	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 3
1. Opportunity for personal growth	.31	.45	.40	.11	.51	.06	.36
2. Feeling of security	.42	.29	.43	.36	.07	.50	.12
3. Feeling of self-esteem	.63	.42	.50	.34	.34	.38	.46
4. Opportunity to set goals	.27	.70	.63	.17	.69	.15	.10
5. Opportunity to determine methods	.22	.76	.66	.25	.83	.20	.06
6. Authority	.52	.50	.30	.51	.36	.54	.29
7. Opportunity to help people	.37	.41	.29	.31	.29	.13	.19
8. Prestige inside school	.53	.42	.15	.78	.20	.62	.26
9. Prestige outside school	.56	.30	.25	.78	.11	.44	.41
10. Opportunity to develop friendships	.54	.25	.39	.38	.11	.45	.12
11. Feeling of accomplishment	.83	.25	.59	.24	.22	.42	.67
12. Feeling of self-fulfillment	.75	.25	.67	.28	.18	.27	.74
13. Opportunity for independent thought	.53	.47	.55	.26	.38	.35	.29

Table 41
NSQ "Is Now," "Should Be," and "Deficiency" Items Factor Analysis
Oblimax Rotation

Abbreviated Question Item	"Is Now"		"Should Be"		"Deficiency"		
	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2	Factor 3
1. Opportunity for personal growth	.22	.37	.44	.06	-.14	.48	-.33
2. Feeling of security	.42	.12	.39	-.23	.54	-.04	.02
3. Feeling of self-esteem	.64	.16	.48	-.17	.24	.21	-.39
4. Opportunity to set goals	.06	.71	.70	.09	.04	.73	.06
5. Opportunity to determine methods	-.03	.81	.71	.01	.09	.89	.15
6. Authority	.46	.32	-.19	-.46	.49	.25	-.11
7. Opportunity to help people	.30	.30	.25	-.23	.04	.26	-.14
8. Prestige inside school	.51	.21	-.09	-.84	.62	.06	-.08
9. Prestige outside school	.60	.05	.04	-.80	.36	-.04	-.35
10. Opportunity to develop friendships	.59	.00	.34	-.27	.47	.02	.01
11. Feeling of accomplishment	.97	-.17	.64	-.01	.23	.02	-.64
12. Feeling of self-fulfillment	.87	-.12	.71	-.02	.04	-.02	-.80
13. Opportunity for independent thought	.48	.28	.57	-.06	.26	.30	-.18

the participation questions, just as they were with the principal axis factor analysis and the factor analysis with the varimax rotation. Loadings on the factors of the other two scales somewhat conformed to patterns of loadings observed with the principal factor analysis. Participation questions received high loadings on the first factor of the "Should Be" scale, and the prestige question received the highest loadings on the first factor of the "Deficiency" scale. The investigator chose, however, to regard the "Is Now" scale of the NSQ as the most reliable measure of the dimensions underlying the instrument. Accordingly, the three factor analytic solutions indicated that the NSQ measured predominantly one dimension of job satisfaction--a dimension which the investigator termed, "psychological self-interest."

Summary

As a result of discriminant function analyses, multitrait-multimethod correlational analyses, estimates of internal consistency, and factor analyses, the following findings about the discriminant, convergent, and concurrent validity of the NSQ and QEJSS with the MSQ were generated:

1. The MSQ or scales selected from it was superior to the NSQ and QEJSS or scales from them in discriminating among groups. The MSQ thus functioned effectively as the criterion measure of job satisfaction in the investigation.
2. The Overall Deficiency scale of the NSQ discriminated among groups more effectively than did the QEJSS Overall Satisfaction scale,

but the subscales of the QEJSS discriminated more effectively among groups than did the subscales of the NSQ.

3. The QEJSS possessed higher convergent, discriminant, and concurrent validity with the MSQ than did the NSQ.

4. Estimates of internal consistency for the MSQ were markedly higher than estimates of internal consistency calculated for the NSQ.

5. The NSQ measured educators' need deficiencies or job satisfaction with a single dimension rather than with five dimensions corresponding to the five Maslow need categories.

Furthermore, the single dimensional character of the NSQ was evidenced by data generated by the three major components of the data analysis. Although discriminant function analysis showed that the NSQ discriminated among groups quite effectively at times, it did so with its Overall Deficiency scale. This fact indicated that none of the five scales was more discriminatory than the aggregate of the five--a clear indication that a single dimension was operant in the discrimination process. It appeared from discriminant function analysis that while the Security and Social scales measured a somewhat different aspect of need deficiency, the other three scales--Autonomy, Esteem, and Self-actualization--dominated the nature of the instrument, a fact supported by the results of factor analysis. The NSQ appeared to function as a measure of intrinsic satisfaction, the character of which differed from the intrinsic satisfaction measured by the MSQ. The percentage of shared variance between the MSQ's Intrinsic Satisfaction scale and the NSQ was only 23%. In summary, the investigator found the NSQ to be a single dimensioned

instrument which manifested low discriminant and convergent validity with the criterion measure, the MSQ.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the procedures and findings from this investigation which were presented in Chapters III and IV. Conclusions and recommendations based upon the findings of the study are also offered in this discussion. The findings of this investigation have implications for the use of the Need Satisfaction Questionnaire, the Minnesota Satisfaction Questionnaire, and the Quality of Employment Job Satisfaction Survey for the purpose of measuring educators' job satisfaction. The levels of job satisfaction reported in this investigation and the independent variables of the study which yielded the largest differences in mean scores have implications for educational leaders' understandings about the nature of educators' job satisfaction and about steps which might be taken to improve educators' job satisfaction.

Summary

Purpose of the Investigation

The primary purpose of the study was to investigate the psychometric quality of the Need Satisfaction Questionnaire. The instrument has been used to draw conclusions about educators' deficiencies according to Maslow's (1954) hierarchy of needs paradigm as well as to draw conclusions about educators' job satisfaction. Examination of the NSQ and a review of related literature led the investigator to

question the efficacy of the instrument in measuring need deficiencies or job satisfaction. Therefore, an investigation of the discriminant, convergent, and concurrent validities of the NSQ with a criterion measure of job satisfaction, the MSQ, was conducted. The design of the study was a partial replication of Herman and Hulin's (1973) investigation, an inquiry designed to test the hypothesis that the relationship between organizational role and level and job satisfaction was positive. Herman and Hulin suspected that findings about the relationship might have reflected results--methods dependency; in other words, that the findings between organizational role and level and job satisfaction of the relationship depended upon the job satisfaction instrument used in the investigations. Analytic procedures used by Herman and Hulin were applied to the data of this investigation and consisted of: (a) discriminant function analyses, (b) multitrait-multimethod correlational analysis, and (c) factor analysis. An additional purpose of this investigation was to determine if a relatively newly developed job satisfaction instrument, the Quality of Employment Job Satisfaction Survey, possessed concurrent validity with the MSQ.

Sample

Because, at the time this study commenced, this investigation was the only extant concurrent validity study of the NSQ and the QEJSS with the MSQ, the investigator decided that a nonrandom sample would serve the purpose of indicating whether further research into the concurrent validities of these measures would contribute to the

literature of job satisfaction. Accordingly, educators--teachers and administrators--from eight public schools, which comprised one school system, and educators from three Christian schools were selected as the sample for the investigation. Conducted in western Michigan, the study generated data from 268 educators whose returned research packets--each containing the three satisfaction instruments--reflected an 83.4% return rate of the 324 packets which were distributed. Public school administrators and Christian school educators were included in the study to increase the probability that groups of educators with differing satisfaction levels would be included in the sample so as to allow the investigator to examine the relative discriminatory ability of the three instruments.

Demographic Data

Findings of the study concerning the demographic information were:

1. The sample was nearly evenly divided between men (47.7%) and women (51.9%).
2. Ages were distributed across all age ranges (18-29, 30-39, 40-49, 50-64), with most educators (40.7%) reporting that they were 30-39 years of age.
3. Most teachers in the sample (52.2%) had taught for 8 or more years (see Table 3 in Chapter IV of this report).
4. Responding to a question about the employment status of their spouses, 60.1% of the teachers reported that their spouses were employed.

5. The approximate gross income of the educators tended to be at least \$15,000 (see Table 4 in Chapter IV of this report).

Research Questions

Research question number 1. "Will the NSQ, MSQ, and QEJSS discriminate between public school teachers and public school administrators?" Each of the instruments found teachers to be less satisfied with their work than administrators. When compared with the NSQ and the QEJSS, the MSQ showed the greatest ability to discriminate between the groups. Dissatisfaction among the teachers was indicated as most acute on the MSQ scales of: (a) Compensation, (b) Company Policies and Procedures, and (c) Advancement.

Research question number 2. "Will the NSQ, MSQ, and QEJSS discriminate men from women?" No significant differences in satisfaction mean scores were found among the scores of any of the three instruments.

Research question number 3. "Will the NSQ, MSQ, and QEJSS discriminate younger teachers from older teachers?" As Table 13 in Chapter IV shows, each of the instruments detected statistically significant differences among the mean scores of educators of various ages. Older educators were more satisfied with their work than were younger educators. Statistically significant differences in the mean scores of the groups were detected on the following scales of the MSQ, here presented in the order of significance of the differences in mean scores: (a) Company Policies and Procedures, (b) Compensation, (c) Extrinsic Satisfaction, (d) Security, (e) Social Status,

and (f) Supervision--human relations. Findings from the QEJSS also indicated that differences in extrinsic satisfaction accounted most for differences among the mean scores of various groups of younger and older teachers. The statistical significance of the differences in mean scores among the age groups was greatest on the Promotion scale and the Financial Rewards scale.

The NSQ, on the other hand, showed the largest differences in job satisfaction among the age groups to exist in intrinsic satisfaction, with the Self-actualization scale having the highest statistical significance of differences in mean scores.

Research question number 4. "Will the NSQ, MSQ, and QEJSS discriminate inexperienced teachers from experienced teachers?" None of the instruments detected statistically significant differences among the overall satisfaction mean scores of inexperienced and experienced teachers when $p = .01$. At the .05 level, however, satisfaction differences were detected on the Security and Social Needs scales of the NSQ and on the Compensation and Creativity scales of the MSQ. Generally, teachers with greater experience reported higher satisfaction as measured by these scales. An exception was found in the scores derived by the Creativity scale of the MSQ. Teachers with the least experience (1-2 years) were the most satisfied, while teachers with 3-7 years experience were the least satisfied of the three experience groups identified for the analyses. As discussed in Chapter IV of this report, the Creativity scale may have measured the degree of autonomy allowed by the job as well as creativity.

Research question number 5. "Will the NSQ, MSQ, and QEJSS discriminate among teachers of lower and higher incomes?" None of the scales of the three instruments detected statistically significant differences in the mean scores of the groups.

Research question number 6. "Will the NSQ, MSQ, and QEJSS discriminate among teachers at the elementary, junior high, and senior high school levels?" Although the NSQ's Overall Deficiency scale was the only overall satisfaction scale to detect statistically significant differences in the mean scores of the groups, scales from the MSQ showed the greatest discriminatory ability of the scales from the three instruments when linear combinations of the scales from the three instruments were assembled by discriminant function analysis. Individual scales from the MSQ which detected the largest differences in satisfaction among the groups, here presented in the order of the significance of the differences in the mean scores, were:

(a) Achievement, (b) Co-workers, (c) Supervision--human relations, (d) Advancement, and (e) Ability Utilization. Other differences, although statistically significant, reflected markedly lower F values. Secondary school teachers generally were less satisfied than elementary school teachers on these scales. The statistical significance of the differences among the mean scores derived from the Achievement scale, however, was nearly twice as great as the significance levels derived from the other MSQ scales (see Table 22 in Chapter IV of this report).

The NSQ and the QEJSS detected lower job satisfaction among teachers at the secondary school level than at the elementary school

level, as indicated by Table 22. F values were highest for the NSQ's Social, Esteem, Overall Deficiency, and Self-actualization scales. Statistically significant differences among the mean scores were found for the QEJSS' Co-workers, Challenge, Facet-specific Satisfaction, and Resource Adequacy scales.

Research question number 7. "Will the NSQ, MSQ, and QEJSS discriminate between public and Christian school teachers?" Findings indicated that although the NSQ's Overall Deficiency score was the only overall satisfaction score to discriminate between public and Christian school teachers, the largest differences between the two groups occurred in the scores derived from the two Supervision scales from the MSQ (see Table 26). Generally, Christian school teachers reported higher job satisfaction than did public school teachers. However, Christian school teachers expressed considerably less satisfaction with supervisors than did public school teachers. The QEJSS also had scales according to which the Christian school teachers were shown to possess less satisfaction than their public school counterparts. Christian school teachers reported less satisfaction on the Financial Rewards scale and the Resource Adequacy scale than did public school teachers. The Resource Adequacy scale included questions pertaining to satisfaction with supervisors.

Discriminant validity findings derived from research questions 1-7. As reported in Chapter IV of this report, findings about the relative discriminatory validity of the NSQ, MSQ, and QEJSS job satisfaction instruments were:

1. The QEJSS' Overall Satisfaction scale and selected combinations of subscales discriminated less effectively among groups than did the overall and combinations of scales of the MSQ and sometimes of the NSQ.

2. The NSQ's Overall Deficiency scale discriminated among groups more effectively than any of its subscales.

3. The NSQ's Overall Deficiency scale discriminated among groups as well as or more effectively than the MSQ's Overall Satisfaction scale.

4. Combinations of the MSQ scales selected by discriminant function analysis for their high discriminatory ability discriminated more effectively among groups than did combinations of the NSQ scales.

In short, the MSQ was generally superior to the other two instruments in discriminatory ability.

Research question number 8. "Will the scales of the NSQ, MSQ, and QEJSS correlate positively?" The overall satisfaction scores of the MSQ correlated higher with the overall satisfaction scores of the QEJSS (.65) than with the overall satisfaction scores of the NSQ (.56).¹ Results from multitrait-multimethod correlational analysis indicated that when scales from the QEJSS and NSQ which correlated highest with scales from the MSQ were compared, the scales from the QEJSS showed greater convergent validity with the MSQ and greater discriminant validity than did the scales of the NSQ. The

¹Negative sign omitted to correct for the inverse direction of the deficiency scale of the NSQ relative to the directions of the satisfaction scales of the MSQ and QEJSS.

findings showed that the NSQ possessed less concurrent validity with the MSQ than did the QEJSS.

Research question number 9. "Do the scales of the NSQ represent independent factors in this sample of educators?" Principal axis factor analysis with varimax and oblimax rotations conducted on the three categories of the NSQ indicated that a single dimension accounted for as much as 90.2% of the total variance in the questions of the "Is Now" response category of the NSQ (see Table 38 in Chapter IV of this report). Although two additional factors were derived from the "Deficiency" response category of the NSQ, the two factors combined accounted for only 23.4% of the total variance, whereas the first factor accounted for 76.5% of the total variance in the question items. Moreover, question loadings on the first factor in the "Is Now" response category of the NSQ were highest in the cases of questions from three scales of the NSQ--Esteem, Autonomy, and Self-actualization. In other words, the nature of the single factor was determined by the three scales, rather than by any single scale. The results from the factor analysis, then, suggested that for the sample of educators in this investigation, the scales of the NSQ did not represent independent factors, but rather that together the scales comprised a single dimension of job satisfaction measured by the instrument.

Conclusions

The findings of this investigation are best understood in the context of current knowledge about job satisfaction and about the

measurement of job satisfaction. As discussed in Chapter II of this report, the fundamental problem associated with any investigation of job satisfaction is the absence of a universally accepted theory, definition, and technical vocabulary of job satisfaction. At best, contemporary explanations of job satisfaction are limited in conceptual adequacy and operational benefit. It seems clear only that job satisfaction is a multi-faceted phenomenon, the causes of which, as Seashore and Taber (1975) observed, "lie substantially, although far from exclusively, in the immediate realities of jobs and environments, and . . . even more strongly in the perceptions of those realities" (p. 352).

Nonetheless, investigators' almost exclusive reliance on individuals' perceptions of their job satisfaction has contributed to the prevalence of bewildering claims and counterclaims associated with job satisfaction research. The fundamental assumption researchers using survey methods must make is that respondents to the job satisfaction instruments will tell the truth about their perceptions of their work. This assumption, in turn begs the questions which Herzberg raised about his own "critical incident" interview method of investigating satisfaction: Does the respondent have a clearly formulated opinion about his or her work, and does asking for such an opinion encourage individuals to offer answers which are "rationalizations, [or] displacements from other factors [e.g., true feelings] which are less easy to express" (1974, in Shafritz & Hyde, 1978, p. 218)? Job satisfaction analysts have come to realize the limitations of survey research methods in job satisfaction investigations.

Ego-defensive responses are encouraged by the close relationship of job satisfaction to self-esteem and by the job satisfaction questions themselves, most of which are transparent enough to allow the respondent to choose what he or she perceives to be socially desirable answers. Therefore, persons studying the findings of job satisfaction investigations should consider the results of such studies, including this one, with a healthy skepticism. It is doubtful that any job satisfaction instrument currently available is capable of quantifying all aspects of individuals' job satisfaction accurately and reliably.

Some job satisfaction instruments, however, measure job satisfaction better than others do, as this investigation and the literature of job satisfaction suggested. Although the NSQ discriminated well among groups relative to the discrimination of the MSQ and QEJSS when only overall satisfaction scales were considered, the Minnesota Satisfaction Questionnaire and combinations of its scales discriminated more effectively among various groups of educators than did the Need Satisfaction Questionnaire or the Quality of Employment Job Satisfaction Survey. Moreover, the investigation showed that the conclusions a researcher may reach as a result of surveying a sample of educators are directly dependent upon the job satisfaction instrument used in the investigation. For example, had this investigator used only the NSQ to draw conclusions about the job satisfaction of the educators in the sample of this investigation, he would have concluded that the greatest sources of educators' dissatisfaction pertained to the intrinsic qualities of their work. On the

other hand, if this investigator had used only the MSQ or the QEJSS for the same purpose, he would have decided that the greatest sources of dissatisfaction pertained to the extrinsic qualities of educator's work. Clearly, the trait that was measured--job satisfaction--did not change; only the methods measuring the trait changed. Thus, this investigation showed that job satisfaction research findings are susceptible to methods variance. This investigation, then, seemed to satisfy Wanous and Lawler's (1972) recommendation:

It appears quite likely that some of the conflicting results reported in studies of satisfaction are due to the different measures of job satisfaction that have been used. . . . Future attempts to integrate the research literature on satisfaction would seem well advised to determine if the relationship between variables like age, education, etc., and satisfaction are different when different measures of satisfaction are employed. (p. 103)

Indeed, the extent to which methods variance affected the findings of this investigation was also apparent in the manner in which the overall satisfaction scales compared with other scales from each instrument in detecting differences in satisfaction among groups of educators. For example, if the investigator had used only the Overall Satisfaction scale of the MSQ to study the relationship of teaching level (elementary, junior high, and senior high school) to job satisfaction, he would have stated that no relationship was found to exist: The Overall Satisfaction scale of the MSQ did not detect statistically significant differences in mean scores for the three groups of teachers. When eight subscales of the MSQ were used, though, statistically significant differences in mean scores were detected. Thus, this investigation revealed that methods variance

may affect the findings of studies using even the most highly regarded job satisfaction instruments if those findings are based solely on the overall job satisfaction scores generated by the instrument. Too often, it would appear, important score variances on certain scales are ignored by investigators because of their tendency to analyze and report results only from overall satisfaction scales. Therefore, consumers of job satisfaction findings must read with discernment: Methods variance plagues the literature of job satisfaction.

The findings of this investigation reflected the perceptions of job satisfaction of a nonrandom sample of educators. Discussion of the implications of the findings concerning educators' job satisfaction and the validity of the job satisfaction instruments used in the investigation must occur in the light of the limitations shed on the study by the nature of the sample. Moreover, the inherent weaknesses of survey methodology limited the utility of the investigation's findings, as did the transient nature of job satisfaction. The satisfaction levels reported are those expressed by educators in the spring of 1980. The literature of job satisfaction clearly suggests that any number of micro-environmental, macro-environmental, and personal changes in the lives of the respondents which may have occurred subsequent to the dates of data collection are capable of altering the magnitude and pattern of satisfaction levels presented in this report. Hence, it is most appropriate to consider the levels of job satisfaction expressed by educators in the sample only in the broadest of perspectives.

The Minnesota Satisfaction Questionnaire

As indicated by findings resulting from use of the Minnesota Satisfaction Questionnaire (see Figure 2 in Chapter IV of this report), educators were least satisfied with the extrinsic nature of their work. The investigator accepted these findings as reflections of reality in the lives of the educators in the sample. Work stoppages, job turnover, and the general climate in which schools operate today support the veracity of the findings about educators' job satisfaction generated by the MSQ. Even with the caveat that workers tend to ascribe dissatisfaction to phenomena over which they have little control but satisfaction to aspects of working life they do control (Vroom, 1964), the lower scores on the extrinsic scales of the MSQ than on the intrinsic scales seem to indicate that a problem worthy of investigation was present in the schools included in the sample for this investigation.

The Quality of Employment Job Satisfaction Survey

The job satisfaction levels produced by the QEJSS indicated that educators were dissatisfied with two aspects of extrinsic satisfaction--Financial Rewards and Promotions (see Figure 3 in Chapter IV of this report). The investigator could find no empirical reason to doubt the truth of that assessment by the QEJSS about educators' job satisfaction.

The Need Satisfaction Questionnaire

Levels of need deficiency reported by Trusty and Sergiovanni (1966), Carver and Sergiovanni (1968), Goldsberry, Henderson, and Sergiovanni (1978), Birada (1978) and Kuieck (1980) (see Figure 1 in Chapter IV of this report) are products of a faulty measurement instrument and thus should be regarded with the greatest of skepticism. The high item correlations and the proportion of variance among the items accounted for by one factor (no lower than 76.5% and as high as 90.2%, as indicated by Table 38 in Chapter IV) suggested that the Need Satisfaction Questionnaire did not possess factors analogous to Maslow's five need categories. Furthermore, the investigator was able to duplicate some of the largest differences in deficiency levels in each of the five scales of the NSQ reported by other researchers simply by altering the composition of the sample included in the analysis. Figure 1 in Chapter IV shows that when the need deficiency data were reported with public school teachers as a separate group from all educators in the sample, need deficiencies as large as .21 (Esteem scale) were detected.

This investigator's ability to manipulate the deficiency levels merely removing or adding certain educators to the sample has implications regarding speculations about trends in educators' need deficiencies or job satisfaction such as those advanced by Sergiovanni and Starrett (1979). Differences in the composition of samples investigated in need deficiency studies could, by themselves, have accounted for differences in need deficiency levels used as the basis

for conjecture about trends in educators' job satisfaction. In short, the so-called trends could be little more than a description of the methods variance associated with the studies which generated the data. Thus, the usefulness of trend data derived from the NSQ must be questioned, if not rejected.

Furthermore the relatively low reliability coefficients of the NSQ relative to the reliability coefficients of the MSQ derived in this investigation suggested that the probability of drawing erroneous conclusions about need deficiency or job satisfaction is greater with the NSQ than with the MSQ. Moreover, the failure of the difference score ("Deficiency" response category) to convey deficiency information accurately must be noted. Does a "Deficiency" score of 1 which resulted from the subtraction of 6 on the "Is Now" response category from 7 on the "Should Be" response category convey the same level of need deficiency as a 1 which resulted from the subtraction of a 1 from a 2 or a 3 from a 4? The investigator believes that these three 1 values reflect need deficiencies of a different magnitude. Missing a meal is not much of a deficiency if one regularly feeds at the golden trough. On the other hand, missing a meal is very much a deficiency if one rarely receives a meal to eat. Thus, measurement artifacts inherent in the difference scores used by the NSQ adversely affected the quality of the information produced by the instrument. In short, the NSQ is an unsatisfactory measure of Maslow's need categories and of overall job satisfaction as well.

Recommendations

Recommendation Number 1

Few actions may seem feasible to improve educators' opportunities for promotions and increases in compensation, both aspects of working life with which educators expressed low satisfaction. Indeed, reductions in funding for schools will probably result in even fewer opportunities in these areas in the future for educators. On the other hand, as discussed in Chapter I of this report, educational leaders must realize that the quality of the instruction offered in the schools is directly related to the quality of teachers laboring in the schools. Whether schools can attract the sort of talented young men and women they need to thrive in the future is doubtful, if extrinsic satisfaction with teaching is allowed to erode further. Therefore, the investigator recommends that educational leaders from the schools sampled examine the data of this study, consider the implications of the data on the future quality of their schools, and move aggressively to inform the public and its legislators of the potential seriousness of the problem of low extrinsic satisfaction among educators.

Recommendation Number 2

The J. scores of the public school teachers on the Company Policies and Procedures scale of the MSQ constitute a phenomenon worthy of investigation by educational leaders. In light of the strike conducted by the public school teachers in the fall of 1979

and the hurt feelings and animosity resulting from it and events surrounding it, the investigator recommends that school board members, administrators, and teachers, as a group charged with investigating the quality of working life in the school system, use the data of this study as one source of needs assessment information.

Recommendation Number 3

The investigator recommends that educational leaders in the Christian schools investigate the causes for the low satisfaction scores on the Supervision scales of the MSQ and the Resource Adequacy scale of the QEJSS. Relative to the other scores of Christian school teachers and public school teachers, the problem not only may exist, but may indeed be serious.

Recommendation Number 4

The MSQ is recommended as a criterion measure of satisfaction. However, because the MSQ has remained largely unchanged since it was first published in 1967, however, the investigator recommends new construct validation studies for the MSQ. Reviews of the conceptual adequacy of the Theory of Work Adjustment in the context of current knowledge about the multi-faceted nature of job satisfaction and in the context of current attitudes about work and life would serve the MSQ well. The general tone of the questions should also be reviewed to determine if they reflect terminology and ideas no longer operant in society.

Recommendation Number 5

Investigators desiring a job satisfaction instrument which requires less time for respondents to complete than does the MSQ may wish to administer the QEJSS. Investigators should be advised, though, that the QEJSS possessed less discriminatory ability than the MSQ as determined in this investigation. Moreover, the theoretical basis on which the instrument was developed has not been clearly articulated, despite the otherwise fine quality of Mangione's (1973) report, which detailed the development of the QEJSS. This researcher therefore recommends that the convergent, discriminant, and concurrent validities of the QEJSS be investigated further in other studies using samples of educators and persons from other occupations. Either the Minnesota Satisfaction Questionnaire or the Job Descriptive Index (Smith, Kendall, & Hulin, 1969) could serve as the criterion measure for such investigation.

Recommendation Number 6

The investigator recommends that educational leaders and job satisfaction researchers set aside the NSQ and the findings it has generated.

Recommendation Number 7

It is recommended that the questions from the NSQ become part of an initial item pool of questions pertaining to the categories in

Maslow's hierarchy. The NSQ, as Porter stated,² is an ad hoc questionnaire. It was not subjected to extensive validity and reliability studies similar to those which led to the development of the MSQ and QEJSS. As discussed in Chapter IV of this report, the investigator labeled the single underlying factor of the NSQ as "psychological self-interest," an aspect of intrinsic satisfaction which neither the MSQ nor the QEJSS measured extensively. The point here is that this aspect of job satisfaction may be regarded as important by workers today even though it was not previously. Contemporary expectations of workers about the psychic rewards that employment should offer them have been so well publicized in recent years that the expectations have come to be regarded as virtual rights of employment. The larger question, then, is whether the constructs of job satisfaction applicable to the late sixties, as reflected in the MSQ, conform to the constructs of job satisfaction today. Construct validation studies of need deficiency and job satisfaction using items from the NSQ and other items similar to them could offer answers to these questions. If such research could validate either Maslow's hierarchy of needs theory or some newly developed theory, both workers and the literature of job satisfaction might benefit.

Recommendation Number 8

Clearly, however, the major recommendation of this study is for creation and universal acceptance of a theory, a definition, and a

²Porter, L. Personal telephone conversation, April 10, 1980.

technical vocabulary of job satisfaction. Job satisfaction analysts and investigators who measure and make what appear to be authoritative statements about a phenomenon as yet largely not understood contribute to the confusion associated with the literature of job satisfaction. The challenge of developing and gaining universal acceptance of a theory of job satisfaction is awesome. A multi-faceted phenomenon influenced by innumerable events, forces, and realities, job satisfaction defies easy conceptualization or quantification.

Recommendation Number 9

Until a theory of job satisfaction is proposed, validated, and universally accepted, however, educational leaders must rely upon the most valid and reliable of job satisfaction instruments. Indeed, the wise course of action in job satisfaction inquiries is to use more than one valid and reliable job satisfaction instrument and to consider the general tenor of the findings the instruments generate as the most meaningful information with which to make decisions. The literature of job satisfaction, despite its conflicts and conceptual inadequacies, is comprehensive enough to provide advice about which job satisfaction instruments will yield valid and reliable results. It is the responsibility of educational leaders and job satisfaction investigators to heed that advice.

APPENDICES

Appendix A

Job Satisfaction Instruments

DIRECTIONS:

NSQ

Below are listed several characteristics or qualities connected with your present school position. For each such characteristic you are asked to give two ratings:

- How much of the characteristic do you believe there is *now* connected with your present school position?
- How much of the characteristic do you believe there *should be* connected with your present school position?

Please answer by circling a number on each rating scale from 1 to 7, where *low numbers* represent low or minimum amounts and *high numbers* represent high or maximum amounts of each characteristic.

	How much is there now?							How much should there be?						
	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
1. The opportunity for personal growth and development in my school position.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
2. The feeling of security in my school position.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
3. The feeling of self-esteem a person gets from being in my school position.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
4. The opportunity, in my school position, for participation in the setting of goals.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
5. The opportunity, in my school position, for participation in the determination of methods and procedures.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
6. The authority connected with my school position.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
7. The opportunity, in my school position, to give help to other people.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
8. The prestige of my school position inside the school (that is the regard received from others in the school).	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
9. The prestige of my school position outside the school (that is the regard received from others not in the school).	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
10. The opportunity to develop close friendships in my school position.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
11. The feeling of worthwhile accomplishment in my school position.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
12. The feeling of self-fulfilment a person gets from being in my school position (that is the feeling of being able to use one's own unique capabilities, realizing one's own potentialities).	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High
13. The opportunity for independent thought and action in my school position.	Low	1	2	3	4	5	High	Low	1	2	3	4	5	High

DIRECTIONS

- Read each statement carefully.
- Decide how satisfied you feel about the aspect of your job described by the statement.

Keeping the statement in mind, mark the box that tells your feeling about your job.

NS (NOT SATISFIED) means this aspect of the job is much poorer than I would like it to be.
 OSS (ONLY SLIGHTLY SATISFIED) means this aspect of my job is not quite what I would like it to be.
 S (SATISFIED) means this aspect of my job is what I would like it to be.
 VS (VERY SATISFIED) means this aspect of my job is even better than I expected it to be.
 ES (EXTREMELY SATISFIED) means this aspect of my job is much better than I hoped it could be.

On my present job, this is how I feel about . . .	NS	OSS	S	VS	ES
1. The chance to be of service to others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The chance to try out some of my own ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Being able to do the job without feeling it is morally wrong.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The chance to work by myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The variety in my work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The chance to have other workers look to me for help.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The chance to do the kind of work that I do best.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The social position in the community that goes with the job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The policies and practices toward employees of this company.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The way my supervisor and I understand each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. My job security.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The amount of pay for the work I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. The working conditions (heating, lighting, ventilation, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. The opportunities for advancement on this job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. The technical "know-how" of my supervisor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. The spirit of cooperation among my co-workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. The chance to be responsible for planning my work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. The way I am treated when I do a good job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Being able to see the results of the work I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. The chance to be active much of the time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. The chance to be of service to people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. The chance to do new and original things on my own.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MSQ

MSQ

NS	OSS	S	VS	ES
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Being able to do things that don't go against my religious beliefs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. The chance to work alone on the job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. The chance to do different things from time to time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. The chance to tell other workers how to do things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. The chance to do work that is well suited to my abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. The chance to be "somebody" in the community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Company policies and the way in which they are administered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. The way my boss handles his workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. The way my job provides for a secure future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. The chance to make as much money as my friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. The physical surroundings where I work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. The chances of getting ahead on this job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. The competence of my supervisor in making decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. The chance to develop close friendships with my co-workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. The chance to make decisions on my own.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. The way I get full credit for the work I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Being able to take pride in a job well done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Being able to do something much of the time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. The chance to help people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. The chance to try something different.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Being able to do things that don't go against my conscience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. The chance to be alone on the job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. The routine in my work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. The chance to supervise other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. The chance to make use of my best abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. The chance to "rub elbows" with important people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. The way employees are informed about company policies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. The way my boss looks his workers up (with top management).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. The way my job provides for steady employment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. How my pay compares with that for similar jobs in the community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. The pleasantness of the working conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. The way promotions are given out on this job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. The way my boss delegates work to others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. The friendliness of my co-workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. The chance to be responsible for the work of others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DIRECTIONS: Read each question carefully. Mark the box that best corresponds to your answer.

Response Category*

- Very satisfied
Satisfied
Not too satisfied
Not at all satisfied

- I would want the job I now have
I would want to retire and not work
I would prefer some other job to the job I now have

- Decide without hesitation to take the same job
Decide with some thought
Decide definitely not to take the job

- Very much like the job I wanted
Somewhat like the job I wanted
Not very much like the job I wanted

- I would strongly recommend it
I would have doubts about recommending it
I would advise friend against it

- Very true
Somewhat true
Not too true
Not true

1. All in all, how satisfied would you say you are with your present job?
a. Satisfied
b. Somewhat satisfied, not too satisfied,
or not at all satisfied?

2. If you were free to go into any type of job you wanted, would your choice be?

3. Knowing what you know now, if you had to decide all over again, whether you would take this job, or whether you would go to work for someone else without hesitation to take the same job, would you have some serious doubts about whether you would definitely not to take the job?

4. In general how well would you say that your job measures up to the sort of job you wanted when you were first hired? Would you say it was very much like the job you wanted?

5. If a good friend of yours told you (he/she) was interested in working for you, would you recommend (him/her)? Would you tell (him/her) that you would recommend this job, would you have doubts about whether you would definitely not to advise (him/her) against this sort of job?

6. I have enough time to get the job done.

7. The hours are good.

8. Travel to and from work is convenient.

9. The physical surroundings are pleasant.

10. I can forget my personal problems.

11. I am free from the conflicting demands that other people make of me.

12. I am not asked to do excessive amounts of work.

13. The work is interesting.

QUEST

- Very true
Somewhat true
Not too true
Not true

14. I have an opportunity to develop my own special ability.

15. I am one of the results of my work.

16. I am given a chance to do the things I do best.

17. I am given a lot of freedom to decide how I do my own work.

18. The present means are expected to solve the problem.

19. The pay is good.

20. The job security is good.

21. My fringe benefits are good.

22. The people I work with are friendly.

23. I am given a lot of chances to make friends.

24. The people I work with take a personal interest in me.

25. I have enough information to get the job done.

26. I receive enough help and equipment to get the job done.

27. I have enough authority to do my job.

28. My supervisor is competent in doing (his/her) job.

29. My responsibilities are clearly defined.

30. The people I work with are competent in doing their jobs.

31. My supervisor is very concerned about the welfare of those under (him/her).

32. My supervisor is successful in getting people to work together.

33. My supervisor is helpful to me in getting my job done.

34. The people I work with are helpful to me in getting my job done.

35. My supervisor is friendly.

36. Promotions are handled fairly.

37. The chances for promotion are good.

38. My supervisor is concerned about giving employees a chance to get ahead.

Appendix B

Coded Demographics Page

A JOB SATISFACTION STUDY

One of the purposes of this study is to report how you and your colleagues feel about your work. Job satisfaction information can be used to study negative and positive aspects of the position you hold. Changes in a school system's organization, operation, and communication can result from such a study.

So that the quality of working life in your school system can be best understood, all employees are asked to participate in the study. Your responding to all the questions will further help to ensure meaningful results. Be honest and frank in answering the questions.

All responses are confidential and anonymous. Results will be reported by school building and by school system. Numbers 7-8 will be reported only by school system. Thank you for your cooperation.

Study researcher: Thomas J. Kuieck, Kentwood, Michigan
Study supervisor: Dr. Harold Boles, Professor of Educational Leadership,
Western Michigan University, Kalamazoo, Michigan

DIRECTIONS

Mark the appropriate blanks.

1. 1-4 school system code
2. 1-12 school building code
3. 1 female; 2 male
4. 1 18-29; 2 30-39; 3 40-49; 4 50-64 years of age
5. Employment position: (If more than one answer applies to you, choose the one answer that best applies.) 1 administrator; 2 teacher (K-6); 3 teacher (7-8); 4 teacher (9-12); 5 professional support (social worker, counselor, librarian, etc.); 6 clerk/secretary; 7 nonprofessional support (aids, bus driver, custodian, cook, etc.)
6. PLEASE ANSWER THIS QUESTION ONLY IF YOU ARE A TEACHER. Including this school year, how many years have you taught on a full-time basis? 1 1-2; 2 3-7; 3 8 or more
7. Is your spouse employed? (Answer only if you are married and living with your spouse.)
1 yes; 2 no
8. What was your approximate gross income last year? (Please be sure to include your spouse's income, if applicable.) 1 5,000-10,000; 2 10,000-15,000; 3 15,000-20,000; 4 20,000-25,000; 5 25,000-30,000; 6 30,000 or more

YOU HAVE COMPLETED THE DEMOGRAPHICS PAGE. NOW FILL OUT THE QUESTIONNAIRE. DIRECTIONS FOR THE THREE SECTIONS OF THE QUESTIONNAIRE DIFFER, SO READ THEM CAREFULLY.

Appendix C

Response Values for the QEJSS

QUISS

DIRECTIONS: Read each question carefully. Mark the box that best corresponds to your answer.

	Response Category				Very True	Some-what True	Not too at all True
1. All in all, how satisfied would you say you are with your job - very satisfied, somewhat satisfied, just too satisfied, or not at all satisfied?	5	<input type="checkbox"/> Very satisfied		14. I have an opportunity to develop my own special abilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. If you were free to go into any type of job you wanted, what would your choice be?	5	<input type="checkbox"/> Somewhat satisfied		15. I can see the results of my work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Knowing what you know now, if you had to decide all over again, whether or not you would take this job, would you decide? Would you decide without hesitation to take the same job, would you have some serious doubts, or would you definitely not take the job?	5	<input type="checkbox"/> Not at all satisfied		16. I am given a chance to do the things I do best.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. In general how well would you say that your job measures up to the sort of job you wanted when you took it? Would you say it is very close to what you wanted, or not very much like the job you wanted?	5	<input type="checkbox"/> I would want the job I now have		17. I am given a lot of freedom to decide how I do my own work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. If a good friend of yours told you (he/she) was interested in working in a job like yours (for your employer? Would you strongly recommend this job, would you have doubts about recommending it, or would you strongly advise (him/her) against this sort of job?	5	<input type="checkbox"/> I would prefer some other job to the job I now have		18. The problems I am expected to solve are hard enough.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3	<input type="checkbox"/> I would strongly recommend it		19. The pay is good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it		20. The job security is good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it		21. My fringe benefits are good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job		22. The people I work with are friendly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have		23. I am given a lot of chances to make friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it		24. The people I work with take a personal interest in me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it		25. I have enough information to get the job done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it		26. I receive enough help and equipment to get the job done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job		27. I have enough authority to do my job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have		28. My supervisor is competent in doing (his/her) job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it		29. My responsibilities are clearly defined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it		30. The people I work with are competent in doing their jobs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it		31. My supervisor is very concerned about the welfare of those under (him/her).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job		32. My supervisor is successful in getting people to work together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have		33. My supervisor is helpful to me in getting my job done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it		34. The people I work with are helpful to me in getting my job done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it		35. My supervisor is friendly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it		36. Promotions are handled fairly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job		37. The chances for promotion are good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have		38. My employer is concerned about giving everyone a chance to get ahead.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would prefer some other job to the job I now have			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would strongly recommend it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would have doubts about recommending it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would advise friend against it			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	<input type="checkbox"/> I would not take the job			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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BIBLIOGRAPHY

- Alderfer, C. P. Differential importance of human needs as a function of satisfaction obtained in the organization. Unpublished doctoral dissertation, Yale University, 1966.
- Alderfer, C. P. An empirical test of a new theory of human needs. Organizational Behavior and Human Performance, 1969, 4, 142-175.
- Alderfer, C. P. Existence, relatedness, and growth: Human needs in organizational settings. New York: Free Press, 1972.
- Altinus, C. A., & Tersine, R. J. Chronological age and job satisfaction: The young blue-collar worker. Academy of Management Journal, 1973, 16, 53-66.
- Anand, S. P. School teachers: Job satisfaction vs. extraversion and neuroticism. Indian Educational Review, 1977, 12(2), 68-78.
- Anderson, M. R. A study of the relationship between life satisfaction and self-concept, locus of control satisfaction with primary relationships, and work satisfaction. Unpublished doctoral dissertation, Michigan State University, 1977.
- Andrews, F., & Withey, S. Developing measures of perceived life quality: Results from several national surveys. Social Indicator Research, 1974.
- Argyris, C. Personality and organization. New York: Harper, 1957.
- Argyris, C. Integrating the individual and the organization. New York: Wiley, 1964.
- Atkinson, J. W. An introduction to motivation. Princeton, N.J.: Van Nostrand, 1964.
- Aven, S. D. Why many leave the profession of teaching. Education, 1968, 89, 147-148.
- Barbash, J. Job Satisfaction surveys. Paris: Organisation for Economic Co-operation and Development, 1976.
- Belasco, J. A., & Alutto, J. A. Decisional participation and teacher satisfaction. Educational Administration Quarterly, 1972, 8(1), 44-58.
- Betz, E., Weiss, D. J., Dawis, R. V., England, G. W., & Lofquist, L. H. Seven years of research on work adjustment. Minnesota studies in

- vocational rehabilitation (Vol. 20). Minneapolis: University of Minnesota, 1966.
- Birada, R. Educator aspirations, perceived need deficiencies, and response to organizational rewards. Unpublished master's degree thesis, University of Calgary, Calgary, Alberta, Canada, 1978.
- Bishop, T. S. Factors affecting job satisfaction and job dissatisfaction among Iowa public school teachers. Unpublished doctoral dissertation, The University of Iowa, 1969.
- Blocker, C. E., & Richardson, R. Twenty-five years of morale research: A critical review. Journal of Educational Sociology, 1963, 36, 200-210.
- Blunt, P. Cultural and situational determinants of job satisfaction amongst management in South Africa: A research note. Journal of Management Studies, 1973, 10(2), 133-140.
- Borgen, F. H., Weiss, D. J., Tinsley, H. E. A., Dawis, R. V., & Lofquist, L. H. Manual of occupational reinforcer patterns. Minnesota studies in vocational rehabilitation (Vol. 24). Minneapolis: University of Minnesota, 1968.
- Bower, E. M. Teachers talk about their feelings. Maryland: National Institute of Mental Health, 1975.
- Brayfield, A. H., & Crockett, W. A. Employee attitudes and employee performance. Psychological Bulletin, 1955, 52, 396-424.
- Brief, A. P., & Aldag, R. J. Employee reactions to job characteristics: A constructive replication. Journal of Applied Psychology, 1975, 60, 182-186.
- Burke, R. B. Managerial satisfaction with various work and non-work life roles. Studies in Personnel Psychology, 1973, 5(1), 53-62.
- Buros, O. K. (Ed.). The seventh mental measurements yearbook (Vol. II). Highland Park, N.J.: The Gryphon Press, 1972.
- Buros, O. K. (Ed.). The eighth mental measurements yearbook (Vol. II). Highland Park, N.J.: The Gryphon Press, 1978.
- Campbell, D. T., & Fiske, D. W. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 1959, 56, 81-105.
- Carlson, R. E. Degree of job fit as a moderator of the relationship between job performance and job satisfaction. Personnel Psychology, 1969, 22, 159-170.

- Carlson, R. E., Dawis, R. V., England, G. W., Lofquist, L. H. The measurement of employment satisfaction. Minnesota studies in vocational rehabilitation (Vol. 13). Minneapolis: University of Minnesota, 1962.
- Carnall, C., & Wild, R. Job attitudes and overall job satisfaction: The effect of biographical and employment variables: Research note. Journal of Management Studies, 1974, 11(1), 62-67.
- Carver, F. D., & Sergiovanni, T. J. The school as a complex organization: An analysis of three structural elements. Urbana-Champaign, Ill.: Department of Educational Administration and Supervision, University of Illinois, 1968.
- Carzo, R., Jr., & Yanouzas, J. N. Effects of tall and flat organizational structure. Administrative Science Quarterly, 1969, 14, 178-191.
- Clay, R. J. A validation study of Maslow's hierarchy of needs. Raleigh: North Carolina State University, 1977. (ERIC Document Reproduction Service No. ED 150 416)
- Cofer, C. H., & Appley, M. H. Motivation: Theory and research. New York: Wiley, 1964.
- Cooper, J. F. The morale and teaching effectiveness of junior college teachers. Yuma: Arizona Western College, 1977. (ERIC Document Reproduction Service No. ED 134 266)
- Cronbach, L. J. Essentials of psychological testing (3rd ed.). New York: Harper & Row, 1970.
- Cronbach, L. J., & Meehl, P. E. Construct validity in psychological tests. Psychological Bulletin, 1955, 52, 281-302.
- Cummings, L. L., & Berger, C. J. Organization structure: How does it influence attitudes and performance? Organizational Dynamics, 1976, 5(2), 34-49.
- Cummings, L. L., & Schwab, D. P. Theories of performance and satisfaction: A review. Industrial Relations, 1970, 9, 413-416.
- Dawis, R. V., Lofquist, L. H., & Weiss, D. J. A theory of work adjustment (A revision). Minnesota studies in vocational rehabilitation (Vol. 23). Minneapolis: University of Minnesota, 1968.
- Dermer, J. The interrelationship of intrinsic and extrinsic motivation. Academy of Management Journal, 1975, 18, 125-129.
- Derthick, L. G. Factors involved in teachers' leaving the education profession. Unpublished doctoral dissertation, University of Tennessee, 1952.

- DeMarco, N., & Norton, S. Life style, organizational structure, congruity, and job satisfaction. Personnel Psychology, 1974, 27(4), 581-592.
- Doll, R. E., & Gunderson, E. K. E. Occupational group as a moderator of the job satisfaction--job performance relationship. Journal of Applied Psychology, 1969, 53, 359-361.
- Dubin, R., & Champoux, J. E. Central life interests and job satisfaction. Organization Behavior and Human Performance, 1977, 18, 366-377.
- Dunham, R. B., Smith, F. J., & Blackburn, R. S. Validation of the Index of Organizational Reactions with the JDI, the MSQ, and Faces Scales. Academy of Management Journal, 1977, 20(3), 420-432.
- Evans, M. G. Convergent and discriminatory validities between the JDI and Porter's NDI, a measure of goal attainment. Journal of Applied Psychology, 1969, 53, 102-106.
- Filley, A. C., & House, R. J. Managerial process and organizational behavior. Glenview, Ill.: Scott, Foresman, 1969.
- Fisher, V. E., & Hanna, J. V. The dissatisfied worker. New York: Macmillan, 1931.
- Form, W. H. Auto workers and their machines: A study of work factors, and job satisfaction in four countries. Social Forces, 1973, 51, 1.
- Futrell, C. M. Management control process related to performance and satisfaction of bank officers. Baylor Business Studies, August-October 1976, pp. 39-43.
- Gechman, A. S., & Wiener, Y. Job involvement and satisfaction as related to mental health and personal time devoted to work. Journal of Applied Psychology, 1975, 60(4), 521-523.
- George, J. R., & Bishop, L. K. Relationship of organizational structure and teacher personality characteristics to organizational climate. Administrative Science Quarterly, 1971, 16, 467-475.
- Getzels, J. W., & Guba, E. G. Social behavior and the administrative process. School Review, 1957, 65(4), 429-438.
- Ghiselli, E. E. Managerial talent. American Psychologist, 1963, 18, 631-642.
- Gillet, B., & Schwab, D. P. Convergent and discriminant validities of corresponding Job Descriptive Index and Minnesota Satisfaction Questionnaire scales. Journal of Applied Psychology, 1975, 60, 313-317.

- Gilmer, B. V., & Deci, E. L. Industrial and organizational psychology (4th ed.). New York: McGraw-Hill, 1977.
- Glenn, N. D., Taylor, P. A., & Weaver, C. N. Age and job satisfaction among males and females: A multivariate multisurvey study. Journal of Applied Psychology, 1977, 62(2), 189-193.
- Goldsberry, L., Henderson, R. L., & Sergiovanni, T. J. Perceived need deficiencies of teachers in 1978 as compared with 1968. Urbana-Champaign, Ill.: Department of Educational Administration and Supervision, University of Illinois, 1978.
- Golembiewski, R. T. Testing some stereotypes about the sexes in organizations: Differential satisfaction with work? Human Resource Management, 1977, 16(2), 30-32.
- Gosine, M., & Keith, M. V. Bureaucracy, teacher personality needs and teacher satisfaction. Canadian Administrator, 1970, 10(1), 1-5.
- Greabell, L. C., & Olson, J. A. Role dissatisfaction and career contingencies among female elementary teachers. Journal of Student Personnel Association for Teacher Education, 1973, 11, 131-138.
- Gruneberg, M. M. (Ed.). Job satisfaction--a reader. London, Macmillan Press, 1976.
- Guilford, J. Psychometric methods. New York: McGraw-Hill, 1954.
- Hall, D. T., & Nougaim, K. E. An examination of Maslow's need hierarchy in an organizational setting. Organization Behavior and Human Performance, 1968, 3, 12-35.
- Hard lessons for teachers seeking new careers. Business Week, October 29, 1979, pp. 111-112.
- Herman, J. B., & Hulin, C. L. Managerial satisfactions and organizational roles: An investigation of Porter's Need Deficiency Scales. Journal of Applied Psychology, 1973, 57(2), 118-124.
- Herzberg, F. H. Work and the nature of man. Cleveland: World, 1966.
- Herzberg, F. H. Motivation, morale, and money. Psychology Today, March 1968, pp. 42-67.
- Herzberg, F. H., Mausner, B. M., Peterson, R. O., & Capwell, D. F. Job attitudes: Review of research and opinion. Pittsburgh: Psychological Service of Pittsburgh, 1957.
- Herzberg, F. H., Mausner, B., & Snyderman, B. The motivation to work (2nd ed.). New York: Wiley, 1959.

- Hespe, G., & Wall, T. The demand for participation among employees. Human Relations, 1976, 29(5), 411-428.
- Holdaway, E. A. How do Alberta teachers view their work? Alberta Teachers' Association Magazine, 1977, 57(3), 8-10.
- Holdaway, E. A. Satisfaction of teachers in Alberta with their work and working conditions. Edmonton, Canada: Alberta University, 1978. (ERIC Document Reproduction Service No. ED 151 948)
- Hoppock, R. Job satisfaction. New York: Harper & Row, 1935.
- Houchard, R. Bank data management package. Kalamazoo: Western Michigan University, 1974. (a)
- Houchard, R. Statpack statistical package. Kalamazoo: Western Michigan University, 1974. (b)
- Huizenga, G. Maslow's need hierarchy in the work situation. Groninger: Wolters, 1970.
- Hulin, C. L. Job satisfaction and turnover in female clerical population. Journal of Applied Psychology, 1966, 50, 280-285.
- Hulin, C. L., & Blood, M. R. Job enlargement, individual differences, and worker responses. Psychological Bulletin, 1968, 69, 41-55.
- Ilgen, D. R., & Hollenback, J. H. The role of satisfaction in absence behavior. Organizational Behavior and Human Performance, 1977, 19(1), 148-161.
- Imparato, N. Relationship between Porter's Need Satisfaction Questionnaire and the Job Descriptive Index. Journal of Applied Psychology, 1972, 56, 397-405.
- Johnson, E. D. An analysis of factors affecting teachers' morale in selected administrative units of North Carolina. Unpublished doctoral dissertation, Auburn University, 1967.
- Kaiser, H. F. A second-generation little jiffy. Psychometrika, 1970, 35, 401-416.
- Katz, R. Job longevity as a situational factor in job satisfaction. Administrative Science Quarterly, 1978, 23, 204-223.
- Katzell, R. A., Barrett, R. S., & Parker, T. C. Job satisfaction, job performance, situational characteristics. Journal of Applied Psychology, 1961, 49, 311-317.
- Kendall, L. M. Canonical analysis of job satisfaction and behavioral personal background, and situational data. Unpublished doctoral dissertation, Cornell University, 1963.

- Kilpatrick, F., Cummings, M., Jr., & Jennings, M. Source book of a study of occupational values and the image of the federal service. Washington, D.C.: The Brookings Institution, 1964.
- Kokkila, L. M., Slocum, W., & Strawser, R. H. Perceptions of job satisfaction in differing occupations. Business Perspectives, 1972, 9, 5-9.
- Kornhauser, A. Mental health of the industrial worker. New York: Wiley, 1965.
- Lacy, A. An analysis of factors that affect job satisfaction of public high school business teachers in Ohio. Unpublished doctoral dissertation, Ohio State University, 1968.
- Lawler, E. E. Pay and organizational effectiveness. New York: McGraw-Hill, 1971.
- Lawler, E. E., & Porter, L. W. The effect of performance on job satisfaction. Industrial Relations, 1967, 7(1), 20-28.
- Lawler, E. E., & Suttle, J. L. A causal correlational test of the need hierarchy concept. Organizational Behavior and Human Performance, 1972, 7, 265-287.
- Levinson, D., Darrow, C., Klein, E., Levinson, M., & McKee, B. The seasons of a man's life. New York: Knoff, 1978.
- Lied, T. R., & Pritchard, R. D. Relationships between personality variables and components of the expectancy-valence model. Journal of Applied Psychology, 1976, 61, 463-467.
- Litwin, G. H., & Stringer, R. H. Motivation and organizational climate. Boston: Harvard University Graduate School of Business Administration, Division of Research, 1968.
- Locke, E. A. What is job satisfaction? Organizational Behavior and Human Performance, 1969, 4, 309-336.
- Lofquist, L. H., & Dawis, R. V. Application of the theory of work adjustment to rehabilitation and counseling. Minnesota studies in vocational rehabilitation (Vol. 38). Minneapolis: University of Minnesota, 1972.
- Lortie, D. C. School teacher--A sociological study. Chicago: The University of Chicago Press, 1975.
- Mabry, N. K. A study of need satisfaction potential of high school teaching as perceived by prospective teachers. Journal of Student Personnel Association, 1974, 12, 139-142.

- Mangione, T. W. The validity of job satisfaction. Unpublished doctoral dissertation, University of Michigan, 1973.
- Mangione, T. W., & Quinn, R. P. Job satisfaction, counter productive behavior, and self-narcotizing withdrawal from work. Ann Arbor: Survey Research Center, 1973.
- Marrow, A. J. (Ed.). The failure of success. New York: Amacon, 1972.
- Maslow, A. H. A theory of human motivation. Psychological Review, 1943, 50, 370-396.
- Maslow, A. H. Motivation and personality. New York: Harper, 1954.
- Maslow, A. H. Eupsychian management. Homewood, Ill.: Richard D. Irwin, Inc., 1965.
- Maslow, A. H. Motivation and personality (2nd ed.). New York: Harper & Row, 1970.
- McArthur, J. Is motivation by money still fashionable? Management Review, 1973, 62, 64-65.
- McClelland, D. C. The achieving society. Princeton, N.J.: Van Nostrand, 1961.
- McGregor, D. The human side of enterprise. New York: McGraw-Hill, 1960.
- McLean, A. (Ed.). Occupational mental health. New York: Rand McNally, 1970.
- Mermoud, C. F. Teacher effectiveness as perceived by peers and principals and the influence of teacher self-concept and school climate. Unpublished doctoral dissertation, University of Kansas, 1976.
- Miller, L. M. Behavior management: The new science of managing people at work. New York: Wiley, 1978.
- Miskel, C., Glasnapp, D., & Hatley, R. A test of the inequity theory for job satisfaction using educators' attitudes toward work motivation and work incentives. Educational Administration Quarterly, 1975, 11(1), 38-54.
- Mobley, W. H., Griffeth, R. W., Rand, H. H., & Meglino, B. M. Review and conceptual analysis of the employee turnover process. Psychological Bulletin, 1979, 86, 493-522.
- Murnane, R. J., & Phillips, B. R. The school as a workplace: What matters to teachers? Philadelphia: University of Philadelphia, 1977. (ERIC Document Reproduction Service No. ED 137 285)

- Musemeche, R. A., & Adams, S. The rise and fall of teachers' salaries: A nine-region survey. Phi Delta Kappan, 1977, 58, 479-481.
- Nicholson, N., Brown, C. A., & Chadwick-Jones, J. Absence from work and job satisfaction. Journal of Applied Psychology, 1976, 61, 728-737.
- Nie, N. H., Null, C. H., Jenkins, J. G., Steinbrenner, K., & Bent, D. H. Statistical package for the social sciences (2nd ed.). New York: McGraw-Hill, 1975.
- Nord, W. Job satisfaction reconsidered. American Psychologist, 1977, 32, 1026-1035.
- Nunnally, J. C. Psychometric theory. New York: McGraw-Hill, 1967.
- O'Reilly, C. A., & Roberts, K. H. Individual differences in personality, position in the organization, and job satisfaction. Organizational Behavior and Human Performance, 1975, 14, 144-150.
- Orpen, C. A cognitive consistency approach to job satisfaction. Psychological Reports, 1974, 35, 239-245.
- Oswalt, S. G. Satisfaction and dissatisfaction of central office classified employees in selected school districts. Unpublished doctoral dissertation, University of Southern California, 1967.
- Palmore, E., & Jeffers, F. C. (Eds.). Prediction of life span. Lexington, Mass.: Heath, 1971.
- Payne, R. Factor analysis of a Maslow-type need satisfaction questionnaire. Personal Psychology, 1970, 23, 251-268.
- Porter, L. W. A study of perceived need satisfaction in bottom and middle management jobs. Journal of Applied Psychology, 1961, 45, 1-10.
- Porter, L. W. Job attitudes in management: 1. Perceived need deficiencies in need fulfillment as a function of job level. Journal of Applied Psychology, 1962, 46, 375-384.
- Porter, L. W. Job attitudes in management: 2. Perceived importance of needs as a function of job level. Journal of Applied Psychology, 1963, 47, 141-148.
- Porter, L. W., & Lawler, E. E. Managerial attitudes and performance. Homewood, Ill.: Irwin-Dorsey, 1968.
- Porter, L. W., & Mitchell, V. F. Comparative study of need satisfactions in military and business hierarchies. Journal of Applied Psychology, 1967, 51, 139-144.

- Portugal, A. Towards the measurement of work satisfaction. Paris: Organisation for Economic Co-operation and Development, 1976.
- Probe, G. B. An investigation of the relationship between teacher satisfaction and selected personal characteristics. Unpublished doctoral dissertation, University of Oregon, 1970.
- Purrington, G. S., & Jones, A. S. Work environment, risk taking, and the walk-out behavior of teachers. Tallahassee: Florida State University, 1970. (ERIC Document Reproduction Service No. ED 652 169)
- Quinn, R. P., & Mangione, T. W. The 1969-1970 survey of working conditions: Chronicles of an unfinished enterprise. Report to the Department of Labor, 1973.
- Quinn, R. P., Mangione, T. W., & Baldi de Mandilovitch, M. S. Evaluating working conditions in America. Monthly Labor Review (United States Department of Labor), November 1973.
- Quinn, R. P., & Staines, G. L. The 1977 quality of employment survey: Descriptive statistics with comparison data from the 1969-70 and the 1972-73 surveys. Ann Arbor, Mich.: Institute for Social Research, 1979.
- Quinn, R. P., Staines, G. L., & McCullough, M. R. Job satisfaction: Is there a trend? Manpower Research Monograph No. 30, U.S. Department of Labor, Manpower Administration, 1974.
- Reinecker, D. H. The relationship of intrinsic and extrinsic job satisfaction of teachers. Unpublished doctoral dissertation, Temple University, 1971.
- Roberts, K. A., Wahba, G. A., & Miles, R. E. A factor analytic study of job satisfaction items to measure Maslow need categories. Personnel Psychologist, 1971, 24, 205-220.
- Robinson, J., Athanasiou, R., & Head, K. Measurement of occupational attitudes and occupational characteristics. Ann Arbor, Mich.: Survey Research Center, 1969.
- Roethlisberger, F. J., & Dickson, W. J. Management and the worker. Cambridge, Mass.: Harvard University Press, 1939.
- Rogers, R. E. An investigation of factors related to job satisfaction and dissatisfaction of teachers in school districts with differing labor climates. Unpublished doctoral dissertation, Saint Louis University, 1976.
- Salancik, G. R., & Pfeffer, J. An examination of need-satisfaction models of job attitudes. Administrative Science Quarterly, 1977, 22, 427-456.

- Sauser, W. I., & York, C. M. Sex differences in job satisfaction: A re-examination. Personnel Psychology, 1978, 31, 537-547.
- Schneider, B., & Alderfer, C. Three studies of measures of need satisfaction in organizations. Administrative Science Quarterly, 1973, 18, 489-505.
- Seashore, S., & Taber, T. Job satisfaction indicators and their correlates. American Behavioral Scientist, 1975, 18, 333-368.
- Sergiovanni, T. J. The new school executive: A theory of administration (2nd ed.). New York: Dodd, Mead and Company, in press.
- Sergiovanni, T. J., & Starratt, R. J. Supervision: Human perspectives (2nd ed.). New York: McGraw-Hill, 1979.
- Schafritz, J. M., & Hyde, A. C. (Eds.) Classics of public administration. Oak Park, Ill.: Moore Publishing, 1978.
- Shapiro, J. H., & Stern, L. W. Job satisfaction: Male and female, professional and non-professional. Personnel Journal, 1975, 54, 388-389.
- Shepard, J. M. Specialization, autonomy, and job satisfaction. Industrial Relations, 1973, 12, 274-281.
- Sheppard, H., & Herrick, N. J. Where have all the robots gone? New York: Free Press, 1972.
- Smith, P. C., Kendall, L. M., & Hulin, C. L. The measurement of satisfaction in work and retirement. Chicago: Rand McNally, 1969.
- Srivastava, A. K. Money as a motivating force: A critical evaluation. Psychological Studies, 1974, 19, 93-98.
- Srivastva, S., Salipante, P. F., Cummings, T. G., Notz, W. W., Bigelow, J. D., & Waters, J. A. Job satisfaction and productivity. Kent, Ohio: Kent State University, 1977.
- Stewart, M. W. A study of relative job satisfaction among selected categories of public school teachers. Unpublished doctoral dissertation, Syracuse University, 1972.
- Strauss, G. Worker dissatisfaction: A look at the causes. Monthly Labor Review, 1974, 97, 57-58.
- Tatsuoka, M. M. Discriminant analysis: The study of group differences. Champaign, Ill.: Institute for Personality and Ability Testing, 1970.

Today's Education, 1979, 68(4), 36.

Triandis, H. C. A critique and experimental design for the study of the relationship between productivity and job satisfaction. Psychology Bulletin, 1959, 56, 309-312.

Trusty, F. M., & Sergiovanni, T. J. Perceived need deficiencies of teachers and administrators: A proposal for restructuring teachers' roles. Educational Administration Quarterly, 1966, 2(1), 168-180.

Vroom, V. H. Some personality determinants of the effects of participation. Englewood Cliffs, N.J.: Prentice-Hall, 1960.

Vroom, V. H. Work and motivation. New York: Wiley, 1964.

Wahba, M. A., & Bridwell, L. G. Maslow reconsidered: A review of research on the need hierarchy theory. Organizational Behavior and Human Performance, 1976, 15, 212-240.

Wahba, M. A., & Clemence, J. P. A comparison of job satisfaction between men and women. New York: City University of New York, 1973.

Wall, T. D., & Payne, R. Are deficiency scores deficient? Journal of Applied Psychology, 1973, 58, 322-326.

Wanous, J. P., & Lawler, E. E. Measurement and meaning of job satisfaction. Journal of Applied Psychology, 1972, 56, 95-105.

Waters, L. K., & Roach, D. A. A factor analysis of need fulfillment items designed to measure Maslow need categories. Personnel Psychology, 1973, 26, 185-190.

Waters, L. K., & Roach, D. A. Managerial role-job attitude relationships: Comparison of two multiscale measures of satisfaction. Psychological Reports, 1976, 38, 1095-1098.

Weaver, C. N. Occupational prestige as a factor in the net relationship between occupation and job satisfaction. Personnel Psychology, 1977, 30, 607-612. (a)

Weaver, C. N. Relationships among pay, race, sex, occupational prestige, supervision, work autonomy, and job satisfaction in a national sample. Personnel Psychology, 1977, 30, 437-445. (b)

Weaver, C. N. Job satisfaction as a component of happiness among males and females. Personnel Psychology, 1978, 31, 831-840. (a)

Weaver, C. N. Sex differences in the determinants of job satisfaction. Academy of Management Journal, 1978, 21, 265-274. (b)

- Weiss, D. J., Dawis, R. V., England, G. W., & Lofquist, L. H. The measurement of vocational needs. Minnesota studies in vocational rehabilitation (Vol. 21). Minneapolis: University of Minnesota, 1964.
- Weiss, D. J., Dawis, R. V., England, G. W., & Lofquist, L. H. An inferential approach to occupational reinforcement. Minnesota studies in vocational rehabilitation (Vol. 19). Minneapolis: University of Minnesota, 1965.
- Weiss, D. J., Dawis, R. V., England, G. W., & Lofquist, L. H. Manual for the Minnesota Satisfaction Questionnaire. Minnesota studies in vocational rehabilitation (Vol. 22). Minneapolis: University of Minnesota, 1967.
- Weiss, D. J., Dawis, R. V., Lofquist, L. H., & England, G. W. Instrumentation for the Theory of Work Adjustment. Minnesota studies in vocational rehabilitation (Vol. 21). Minneapolis: University of Minnesota, 1966.
- White, R. W. Motivation reconsidered: The concept of competence. Psychological Review, 1959, 66, 297-333.
- Wickstrom, R. A. An investigation into job satisfaction among teachers. Unpublished doctoral dissertation, University of Oregon, 1971.
- Wickstrom, R. A. Sources of teacher job satisfaction. Canadian Administrator, 1973, 31(11), 1-5.
- Wurtz, P. J. An investigation of the multiple effects of self-concept and other independent variables in the prediction of teacher job satisfaction. Unpublished doctoral dissertation, University of Kansas, 1972.