

A COMPARISON OF THE PROFESSIONAL ATTITUDES
OF ACTIVE INDUSTRIAL EDUCATION TEACHERS
TO THOSE WHO LEAVE THE PROFESSION

Thesis for the Degree of Ph. D.
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LOWELL DEAN ANDERSON
1969

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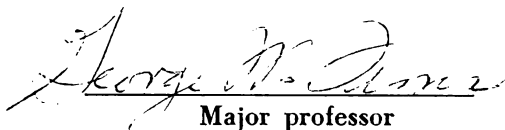
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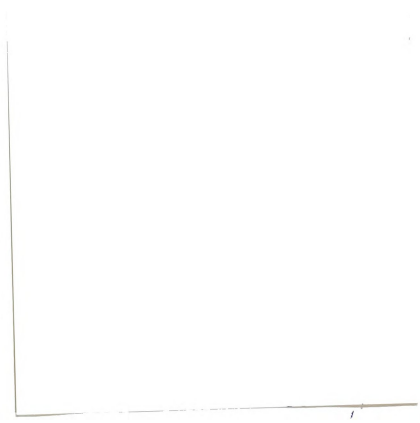
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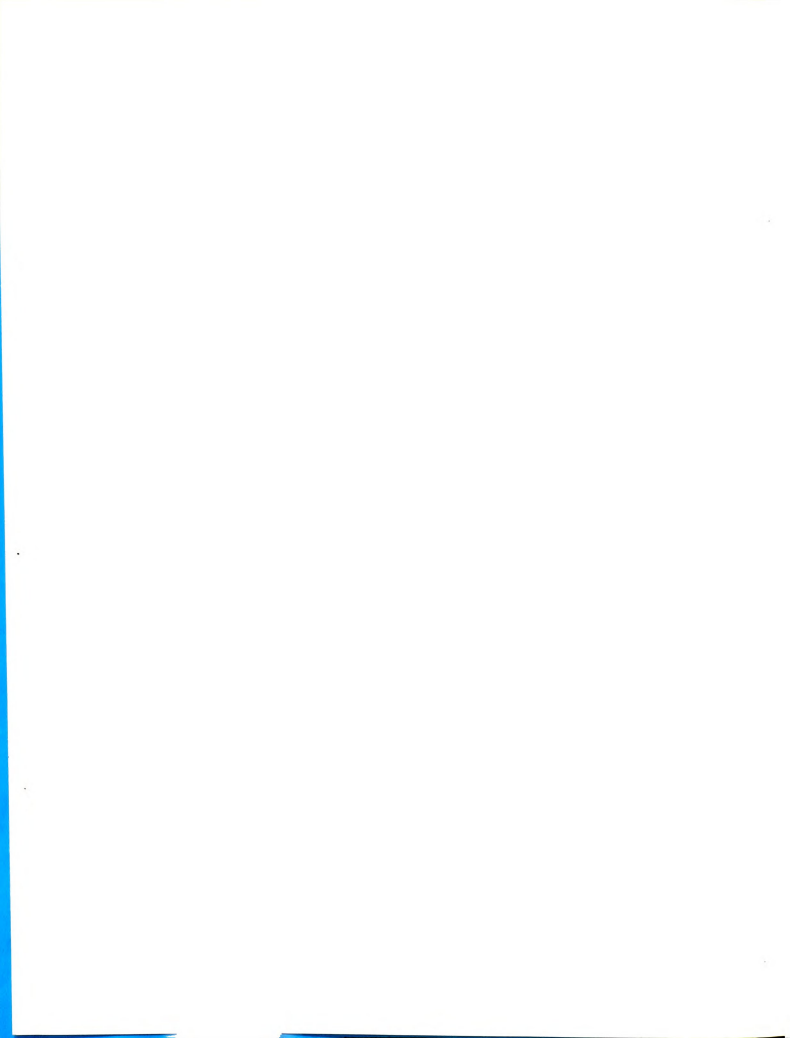
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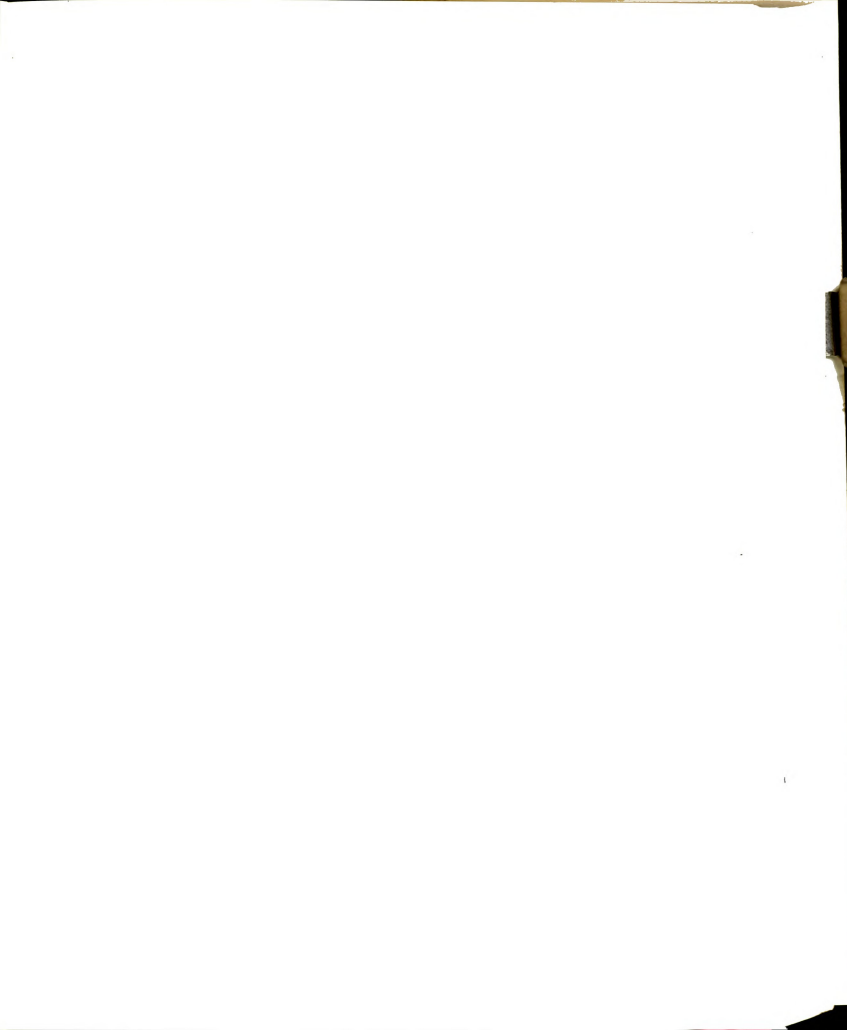
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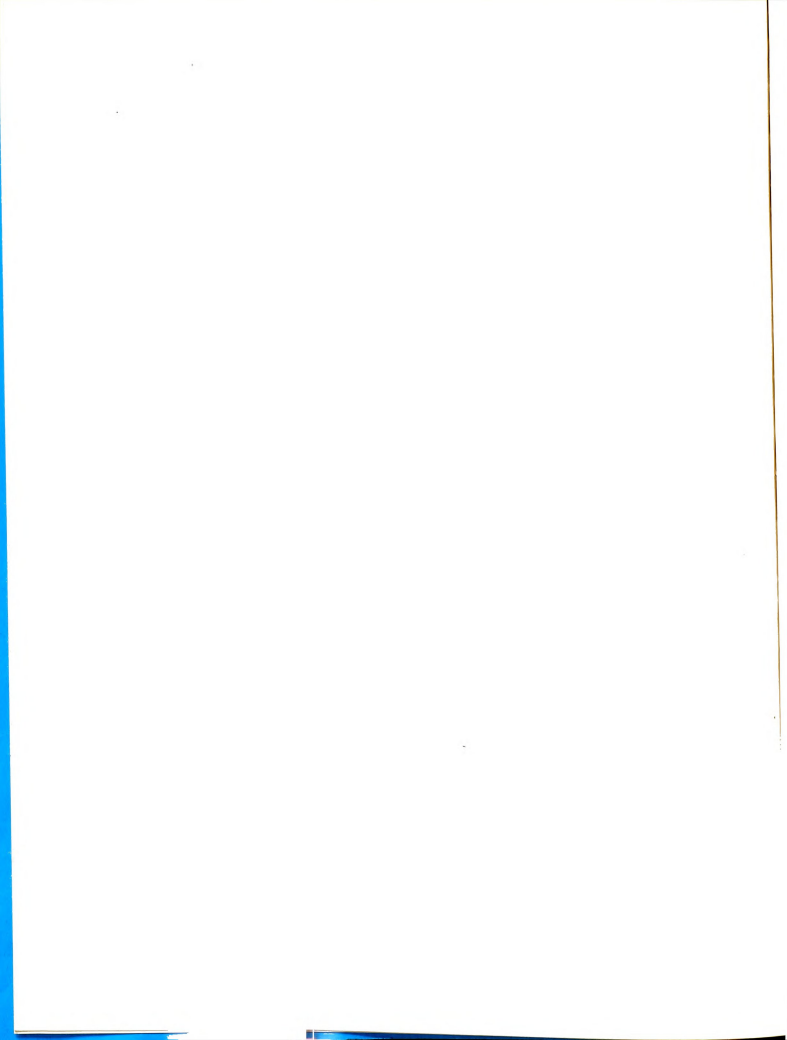

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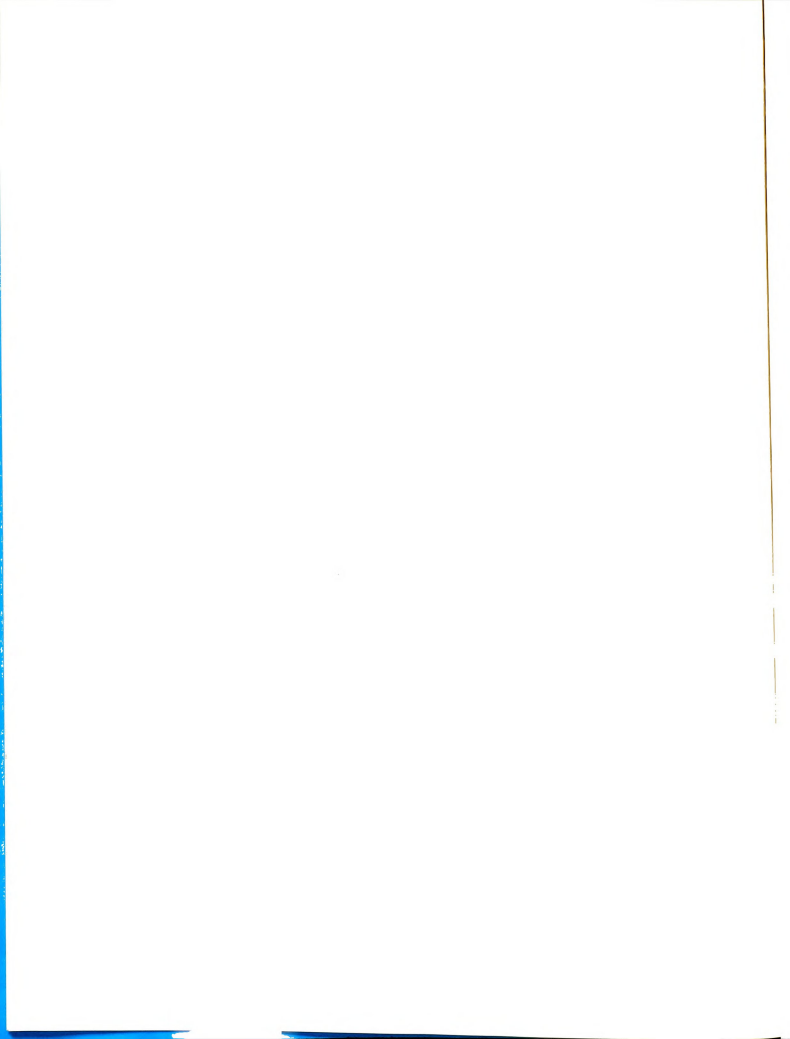
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ABSTRACT

A COMPARISON OF THE PROFESSIONAL ATTITUDES OF ACTIVE INDUSTRIAL EDUCATION TEACHERS TO THOSE WHO LEAVE THE PROFESSION

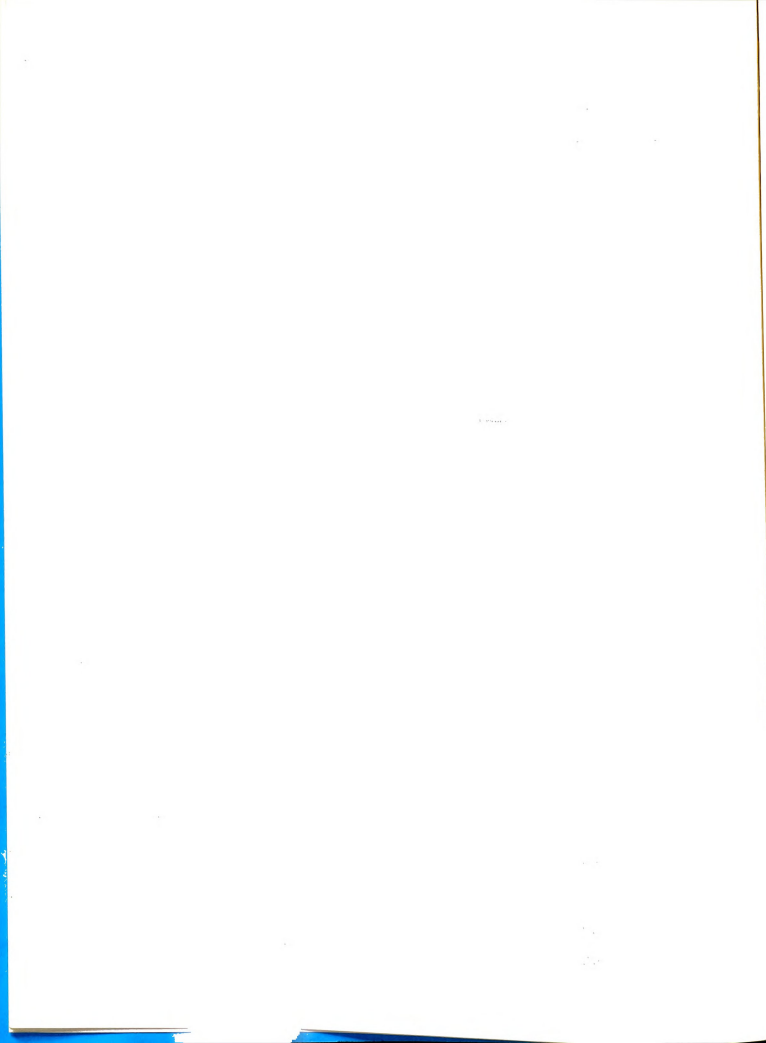
By

Lowell Dean Anderson

The purpose of this study was to determine (1) the percentage of the sample of secondary industrial education teachers in Michigan who leave the profession in a given year, and (2) the differences in pretested professional attitudes between active teachers and teachers who leave the profession.

Procedure

A sample of 200 active teachers was drawn by a multistage stratified random method from active secondary industrial education teachers in the State of Michigan. Steps used were these: (1) compilation of a listing of all Michigan school systems, (2) classification of all systems by total student enrollment into four strata, (3) random selection of school systems from each stratum, (4) listing of active teachers formulated from lists returned by superintendents of selected school systems, (5) proportional random selection of active teachers, based on the projected total number of teachers in the stratum.



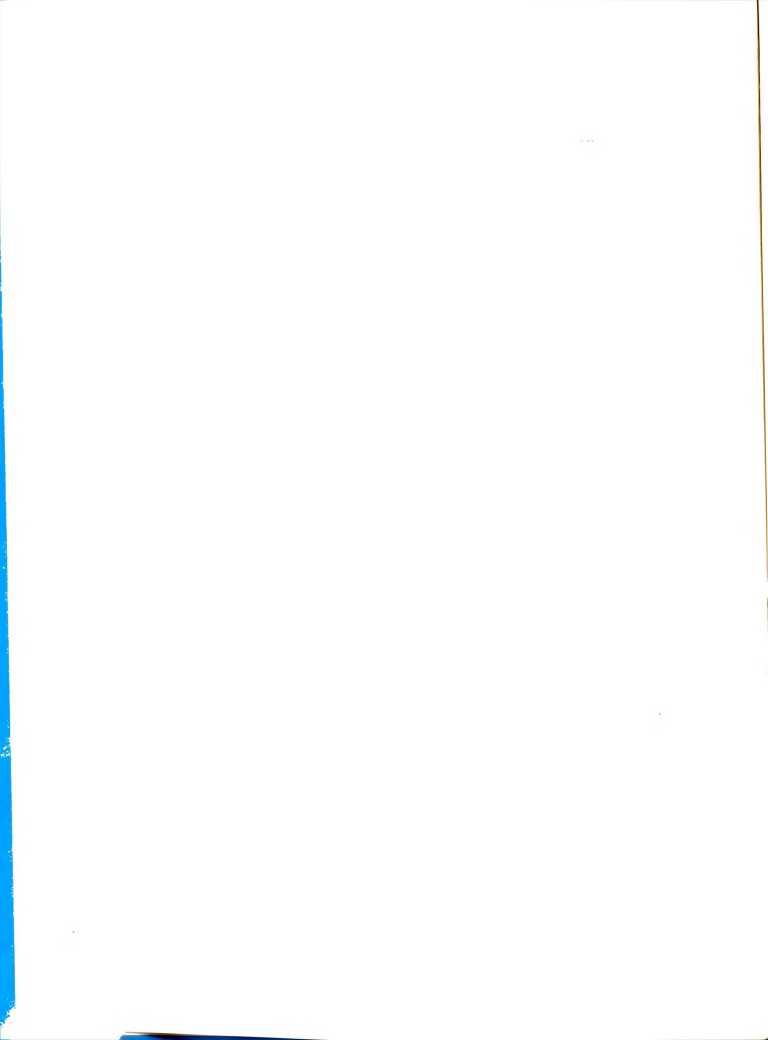
An attitude test instrument was constructed to measure possible attitude differences between out-mobile and active industrial education teachers. Eight subcategories were included: (1) economic worth and wages paid, (2) work requirements, (3) community role, (4) relations with administrators, (5) relations with students, (6) opportunity for professional advancement, (7) capabilities as a teacher, and (8) satisfaction with the profession. A Kuder-Richardson reliability coefficient of .93 was computed on the seventy-two statement instrument, using the 135 usable returned data sheets.

The test instrument was sent to members of the sample in January, 1969. The percentage returned was 82.5. The usable return of test instruments was 135 of 200 (67.5 per cent).

A follow-up to determine out-mobiles from the sample was begun May 2, 1969. A check sheet to designate out-mobility or active status for the 1969-1970 academic year was returned by 172 of 197 (87.3 per cent).

Eight of ten out-mobile designates were interviewed by telephone. Categories of interview topics were based on the subcategories of the test instrument. Additional topics were (a) Why are you leaving the teaching profession? and (b) What is your intended occupation after teaching?

Attitudes of out-mobiles and active teachers, as measured by the test instrument, were compared, using a multivariate technique, Roa Approximate F. A univariate,



one-way analysis of variance, was computed for each of the subcategories of the test instrument.

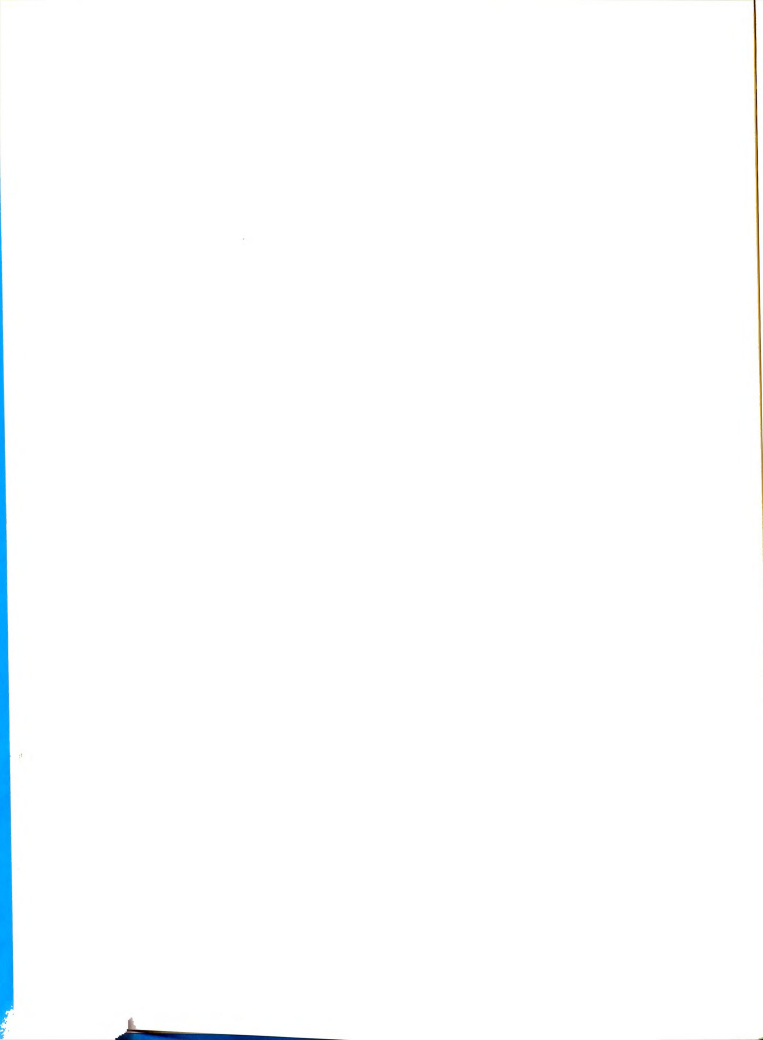
Variables examined for possible effect were these:

(1) size of the school in which the individual teaches, (2) number of years of teaching experience, (3) age of the teacher, (4) those having taught and left the profession and later returned, (5) number of moves in the profession, and (6) attitudes of industrial arts teachers as compared to vocational education teachers.

Major Findings

A. The percentage of out-mobiles and mobiles in industrial education in Michigan was computed from the information on the follow-up check sheet.

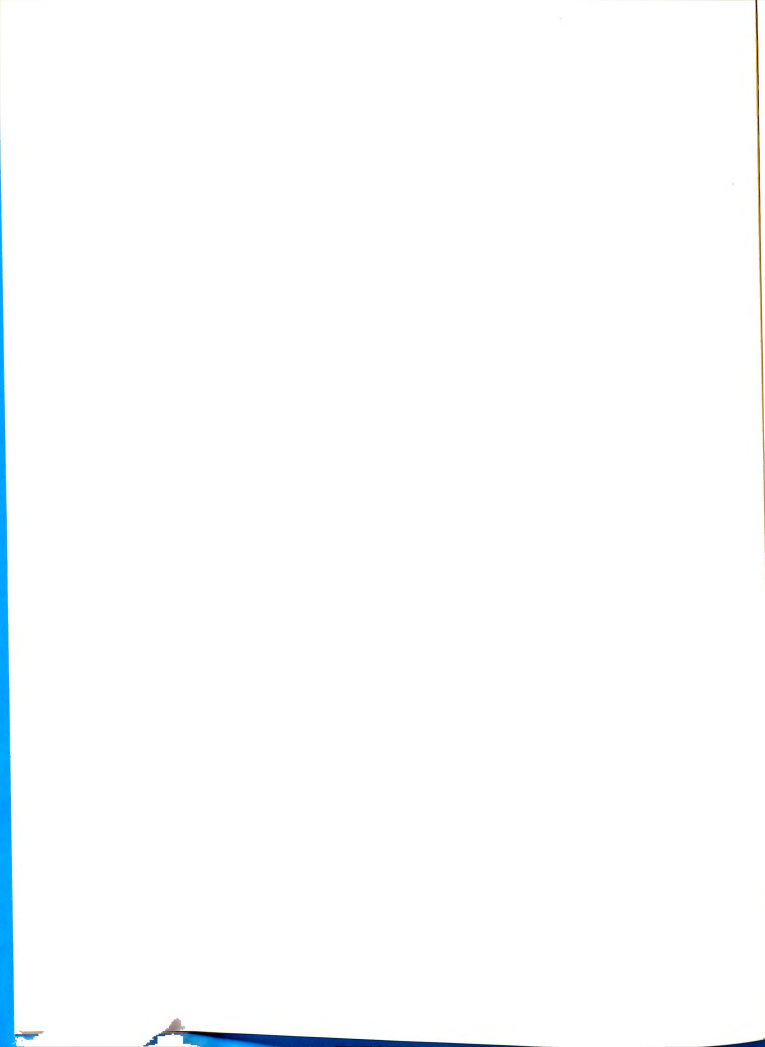
1. Five per cent of the sample of 200 active industrial education teachers during the 1968-1969 academic year designated themselves as becoming out-mobile for the coming year, 1969-1970.
2. Ten and one-half per cent of the sample of 200 active industrial education teachers during the 1968-1969 academic year designated themselves as not teaching industrial education courses the coming year but as remaining in education.
3. Fifteen and one-half per cent of the sample of 200 active industrial education teachers for



the 1968-1969 academic year will be either out-mobile or mobile.

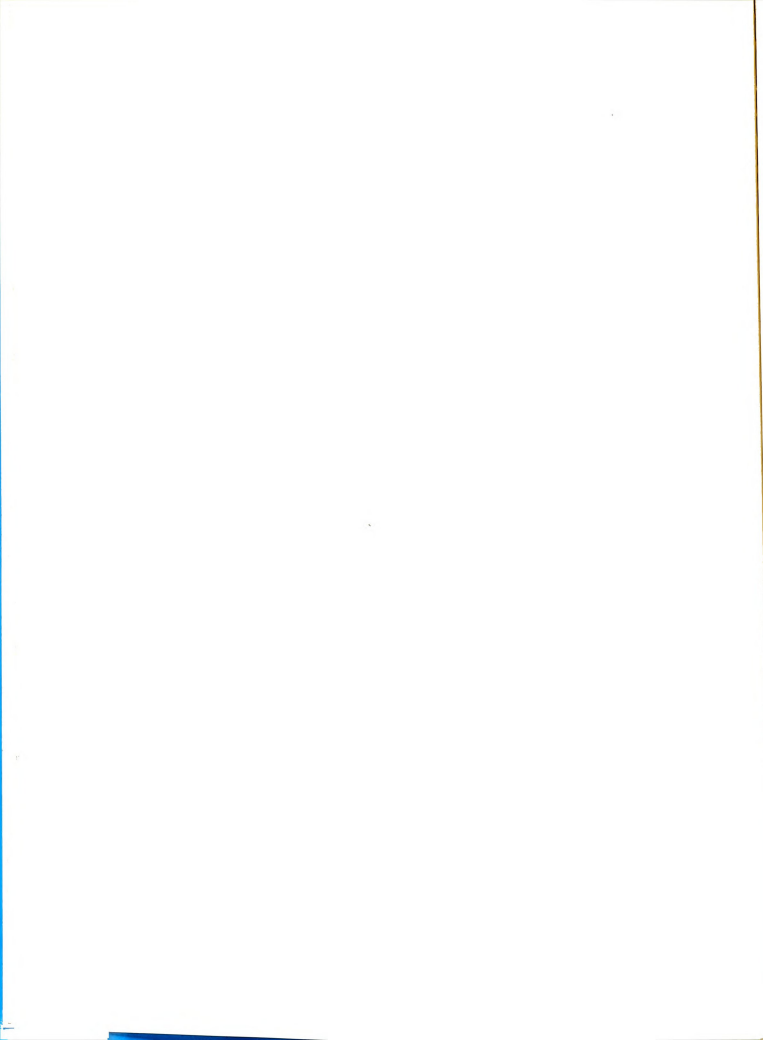
B. Statistical analysis of the data from the test instrument revealed significant conclusions.

1. Significant differences in attitudes of out-mobiles as compared to active teachers were measured by the test instrument.
2. Significant differences in attitudes of out-mobiles as compared to active teachers were identified in the subcategory, opportunity for professional advancement. This subcategory had significant interaction with the variable age. No direct inference is made for the subcategory.
3. Significant differences in attitudes of active teachers were measured when teachers were grouped by age. This was the only variable having significance.
4. Significant differences in attitudes of active teachers were measured in the subcategory of student relations when active teachers were grouped by age.
5. No significant interaction was present between the main effect and the variable age.

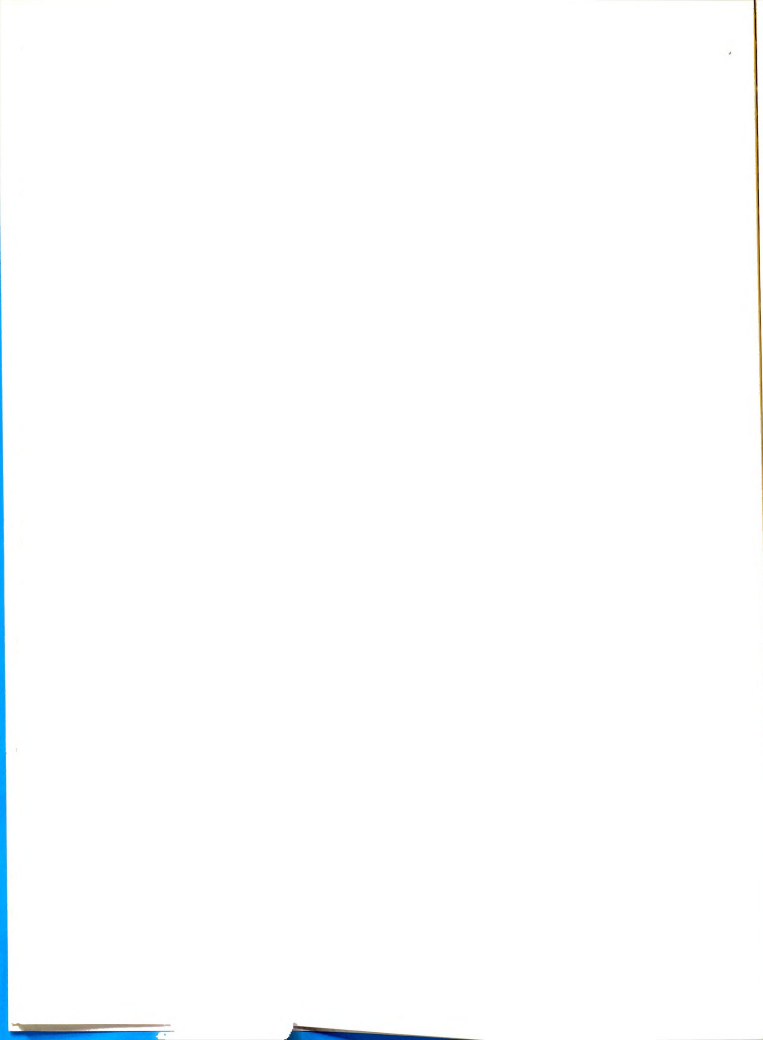


C. Out-mobiles expressed their attitudes towards the topics of the questionnaire during the interviews.

1. Out-mobiles generally enjoyed their role as a teacher. They assessed themselves as being better than average teachers.
2. Out-mobiles perceived the opportunity for professional advancement as non-existent. Advanced degrees did not appeal to out-mobiles as a means of upward mobility.
3. Out-mobiles generally felt they were accepted by other staff members.
4. Out-mobiles experienced ambiguous feelings about their administrators. Usually, they were viewed as not being helpful in the development of industrial education programs.
5. Out-mobiles felt their relations with students were good. They categorized industrial education students as having less than average ability. They felt disharmony between their assessment of the value of industrial education courses as compared to student assessment.
6. Out-mobiles could not define their role in the community with specificity.
7. Out-mobiles generally agreed that the work required of them was not excessive.



8. Out-mobiles thought the salary paid them was less than desirable.
9. Out-mobiles gave these reasons for leaving the profession: (a) salary, (b) inadequate commitment, (c) falseness of the school situation, and (d) insecurity of employment.
10. Out-mobiles indicated selection of occupations in sales, real estate, construction, and personal business as their future plans.



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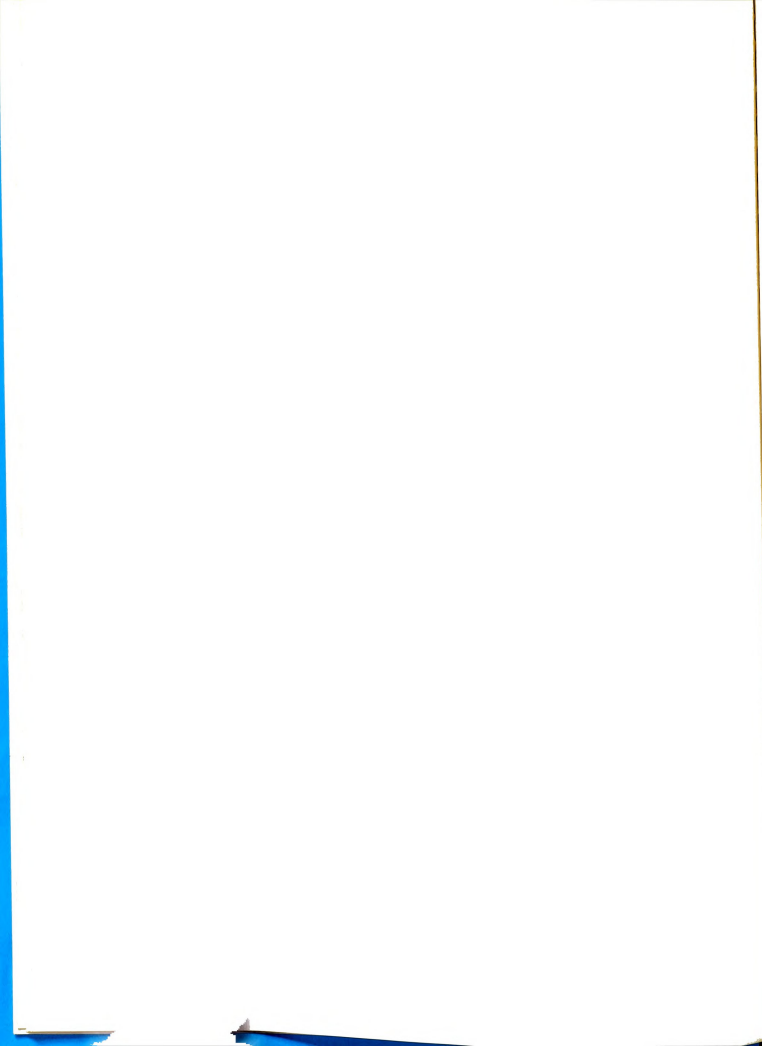
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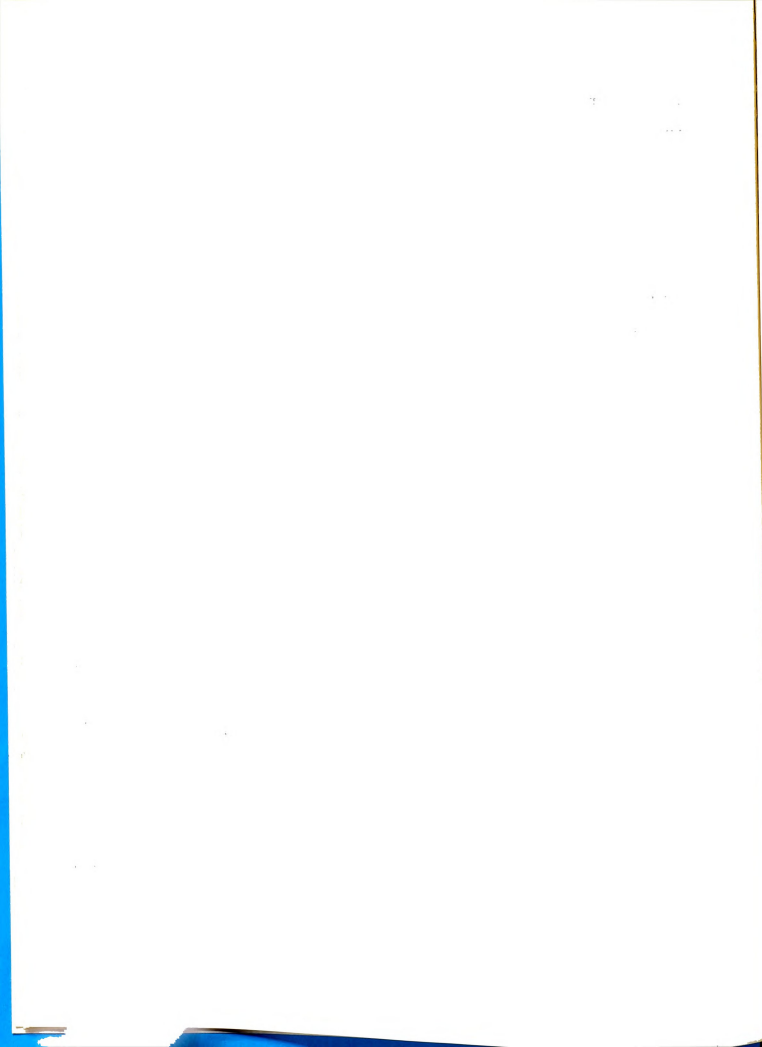
A sincere thanks is extended to Dr. George Ferns chairman of the committee. His direction and assistance in development of the dissertation and program is greatly appreciated. The only assistance I was able to give him was some insight into the naming of his sailboat.

Dr. John Fuzak gave willingly of his time and support in the completion of the degree. The opportunity to become acquainted with him has been a rewarding experience. His approach towards me and fellow students is indeed an attribute worthy of recognition.

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Credit for much of the preliminary study design is given to Dr. Jacob Stern. He was most insightful



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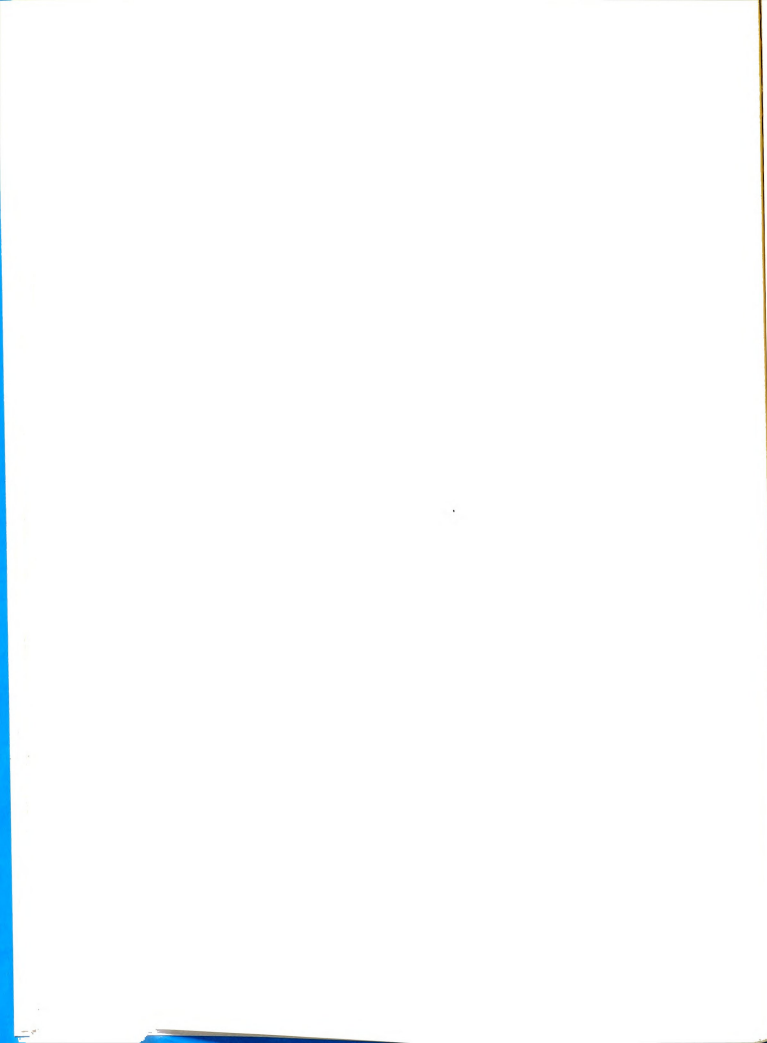
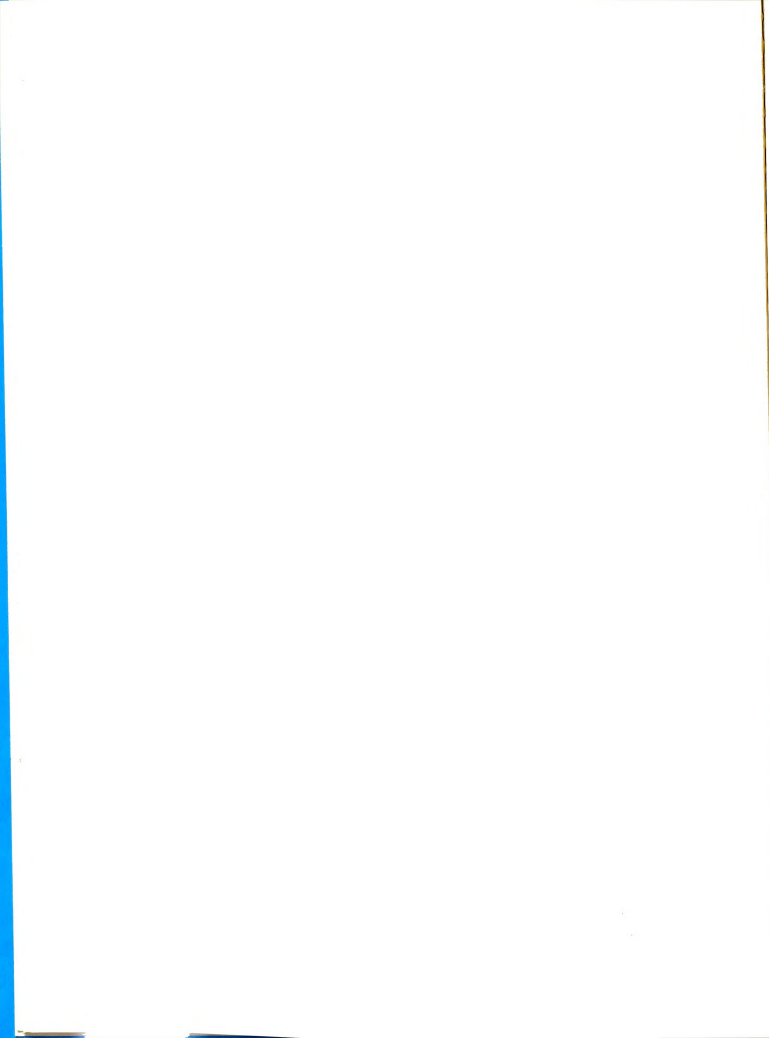
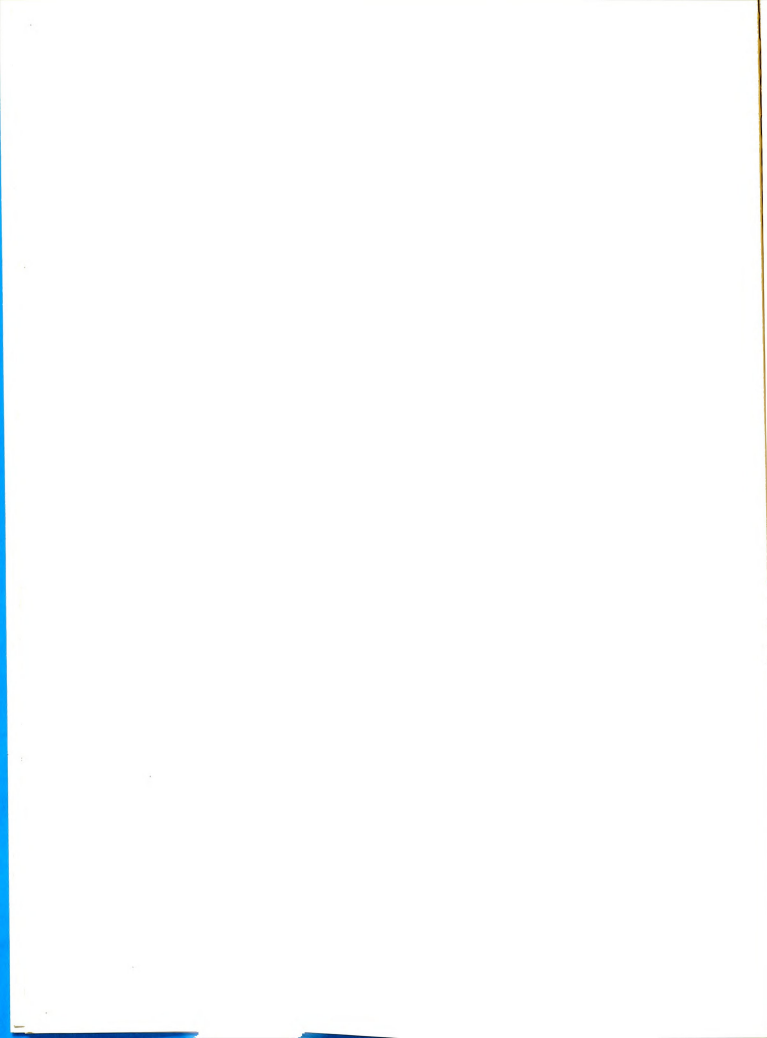


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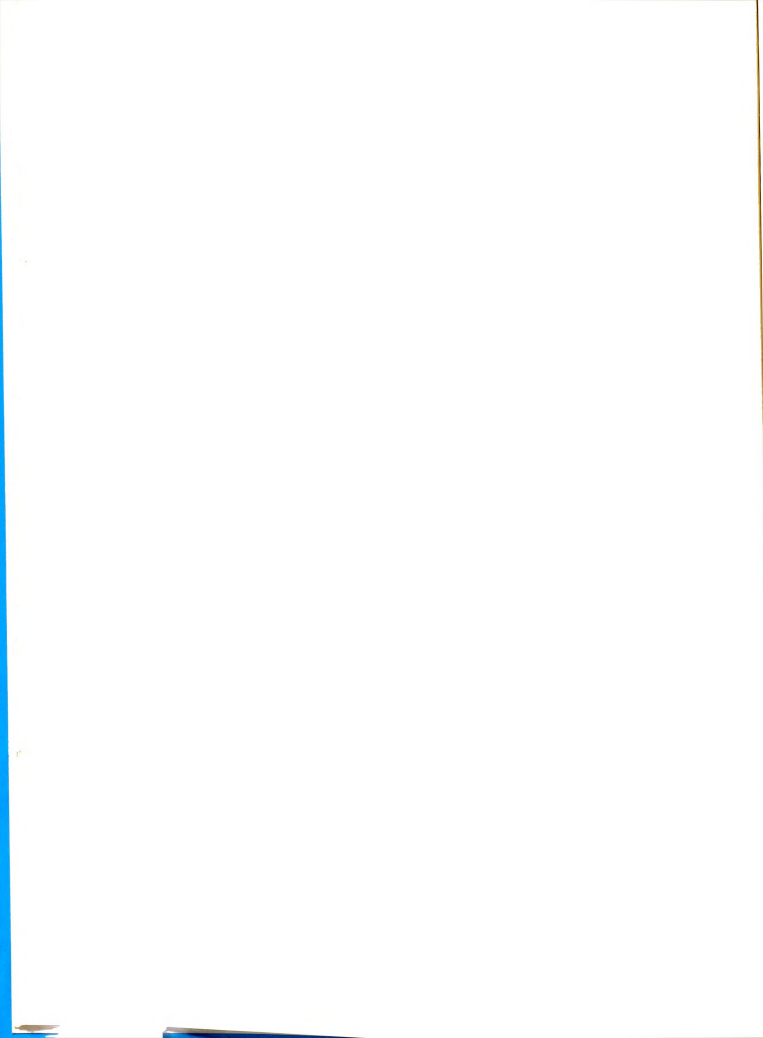
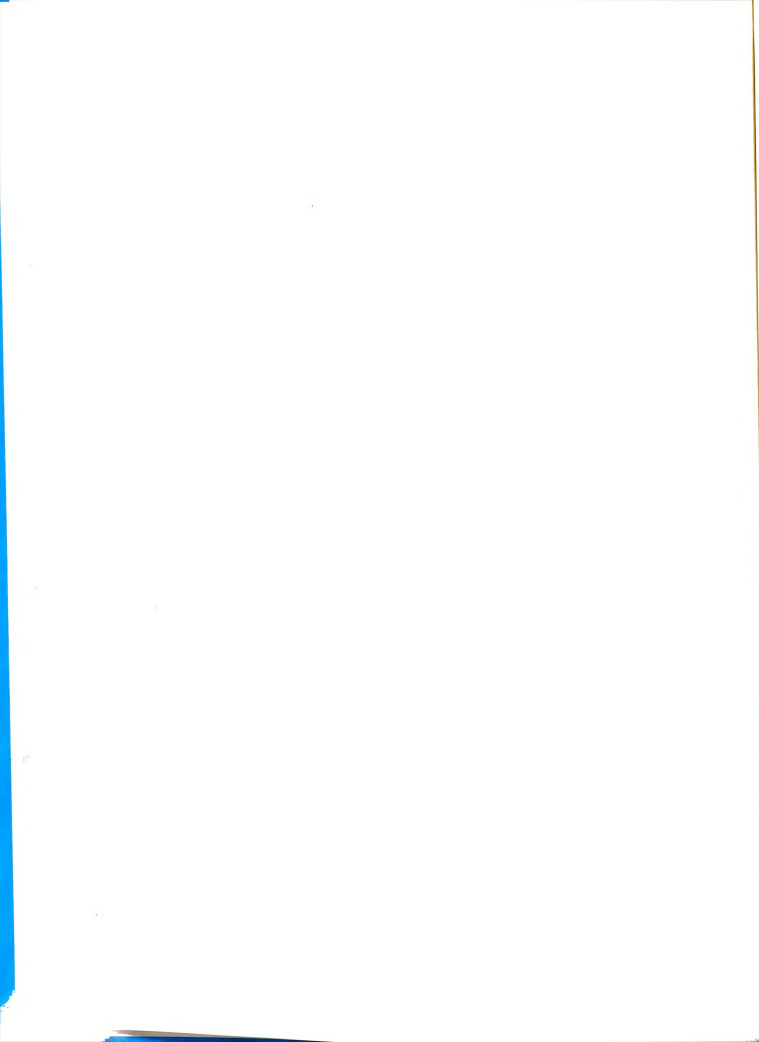
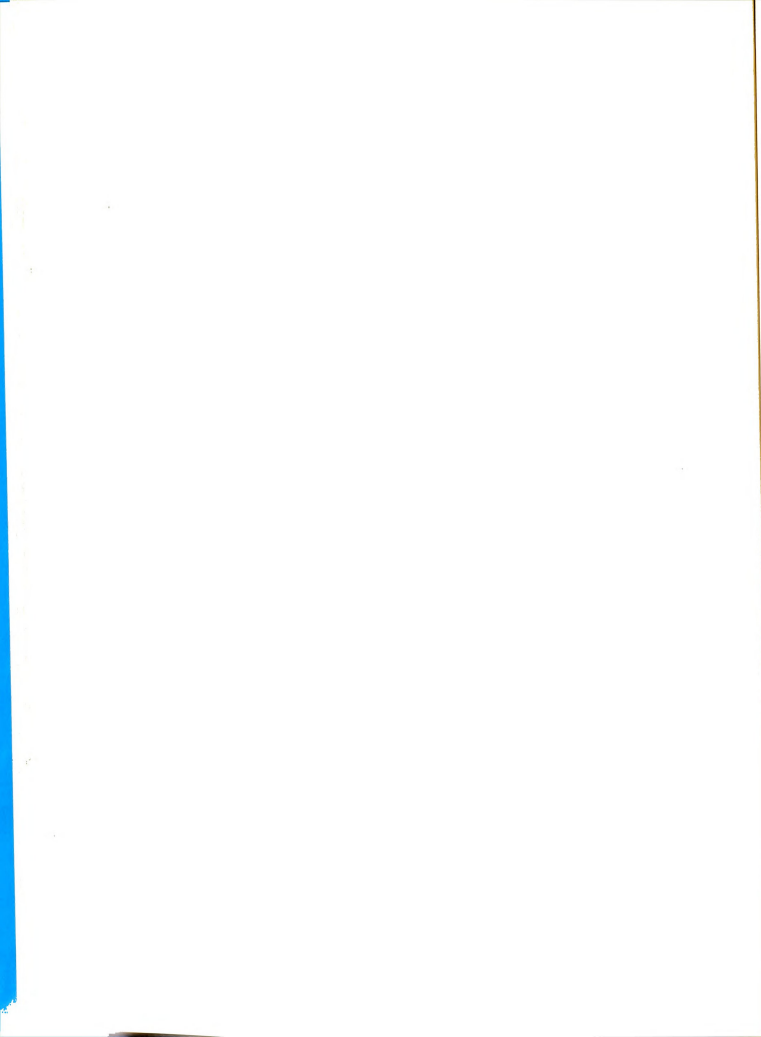


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CHAPTER I

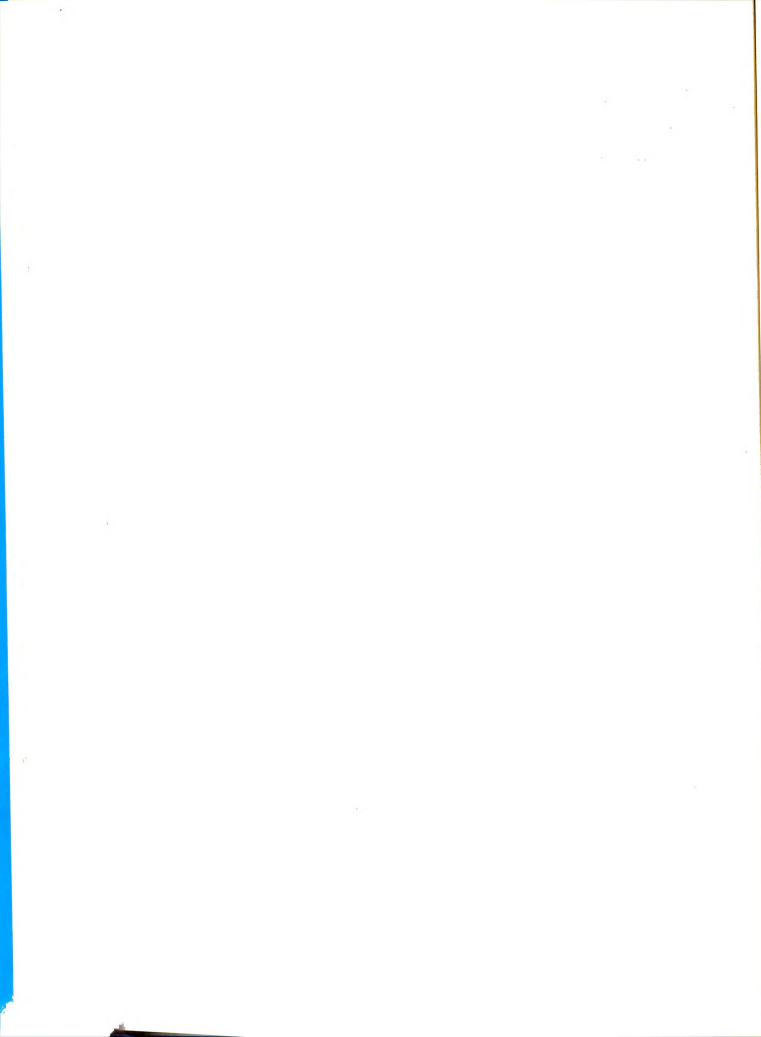
THE PROBLEM, DEFINITIONS, HYPOTHESES AND IMPORTANCE OF THE STUDY

In many geographic regions of the country, a shortage of qualified teachers is becoming a primary concern of people involved in educational programs. Industrial education teachers are in short supply. Recruitment of additional personnel into preparatory programs is frequently proposed as a solution to the problem.

Vocational educators are indicating that the short supply of trained personnel for teaching and administration may be their most critical problem. This problem includes two variables: the lack of an adequate number of educated individuals and the increased demand due to expanded programs initiated under the Vocational Education Act of 1963.¹

Filling leadership positions in vocational education poses a major challenge for the individuals in that field.

¹W. W. Stevenson, "Vacancies at the Top: Report of A Study," American Vocational Journal, 42:30-1, May, 1967.



A study by the Oklahoma Research Coordinating Unit² reported for 1966 that the number of graduates above the baccalaureate would supply only about fifty per cent of the demand for qualified leadership personnel at the state and local level.

A similar demand exists for industrial arts teachers. A study of teacher demand through 1965 ranked, by index number, industrial arts as ninth of twenty-one subject fields in teacher demand.³ An admitted limitation of the study was that local conditions varied considerably from national norms. An example of this limitation was reported by the Industrial Arts Department at Northern Illinois University. They felt, because of the tremendous departmental demand, the index for industrial arts should be at or near the top for secondary school subject areas.⁴ A listing of 200 vacancies was given in Illinois for the fall of 1966.⁵

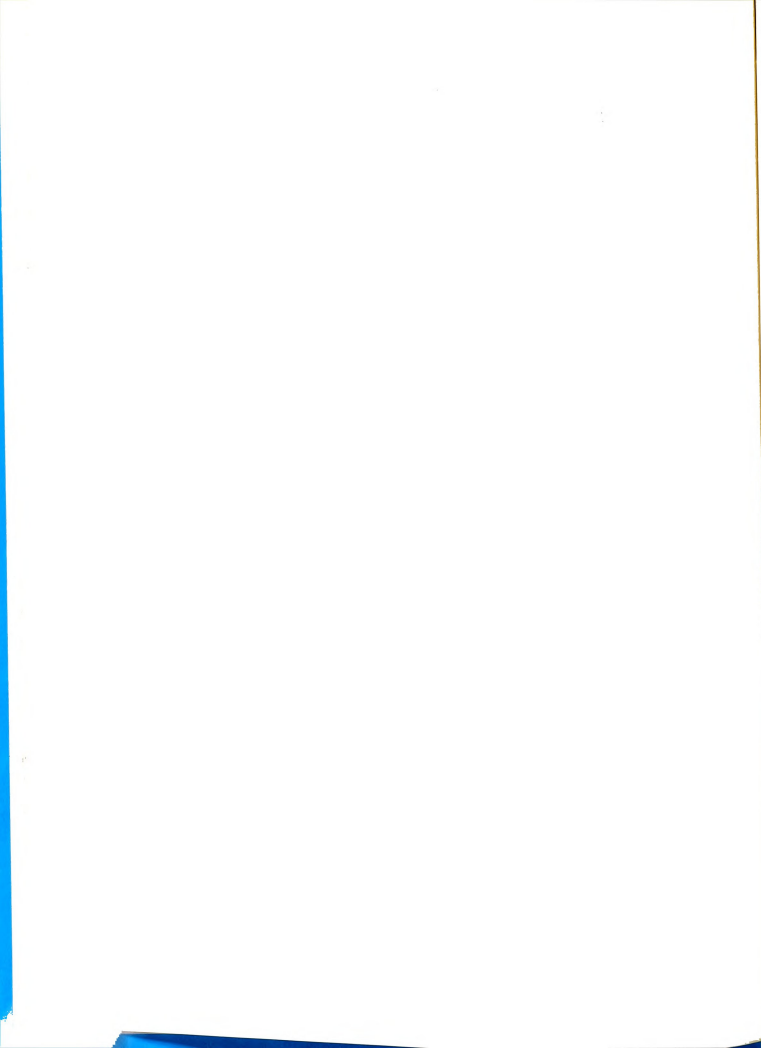
²Ibid., pp. 30-1.

The Oklahoma Research Coordinating Unit Study included twenty-nine state departments of Vocational education (54 per cent of all state departments) and 179 teacher training departments (36 per cent of all colleges and universities training vocational educators). No attempt was made to infer this to be a national study, although universities, colleges and state vocational departments appear to be drawn randomly from total groupings.

³N.H. Bartels, "Index of Teacher Demand Through 1965," Education Forum, 31:441-5, May, 1967.

⁴Ibid., p. 442.

⁵Ibid.



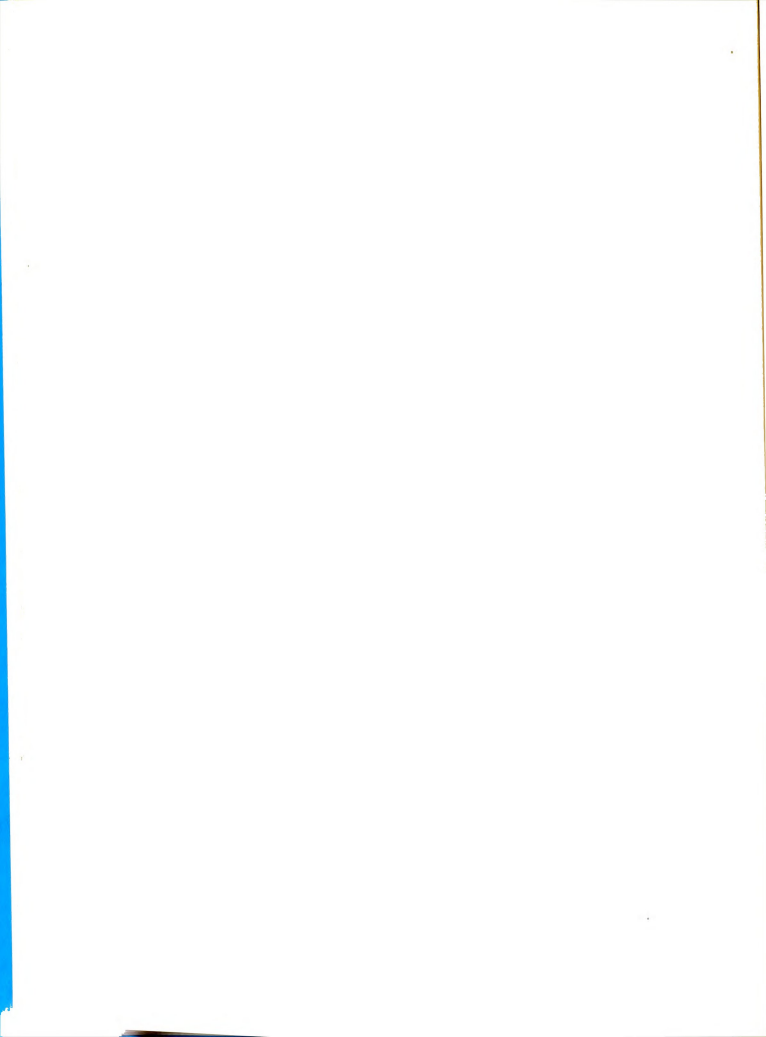
The demand for industrial education personnel has become critical in the State of Michigan. A study reporting on 397 (75 per cent) Michigan School Districts, grades 7-12, included 76 per cent of the total number of secondary teachers.⁶ When subject areas were listed by rank order of teacher shortage, ". . . the subject areas of industrial arts, English, and mathematics were those where the need for teachers was the most critical in the State of Michigan."⁷

The number of teachers leaving the profession per annum may aggravate the supply-demand situation. The contribution of this factor to the teacher shortage problem probably deserves as much attention as recruitment. Dr. Spence, Chairman at Kansas State College, said, "I believe I would not be too far off in saying there are plenty of qualified industrial arts teachers in the country. They simply taught and quit or never taught in the first place."⁸ The additional facet of the problem is to retain a greater percentage of those persons prepared for teaching.

⁶Rex E. Ray, "A Study of the Supply and Demand for Secondary Teachers in Michigan Public Schools--1964-1965" East Lansing: Michigan State University, 1966), p. 10. (mimeographed.)

⁷Ibid., p. 10.

⁸William Spence, "Recruitment Methods Industrial Arts Uses," Industrial Arts and Vocational Education, 49, June, 1967.



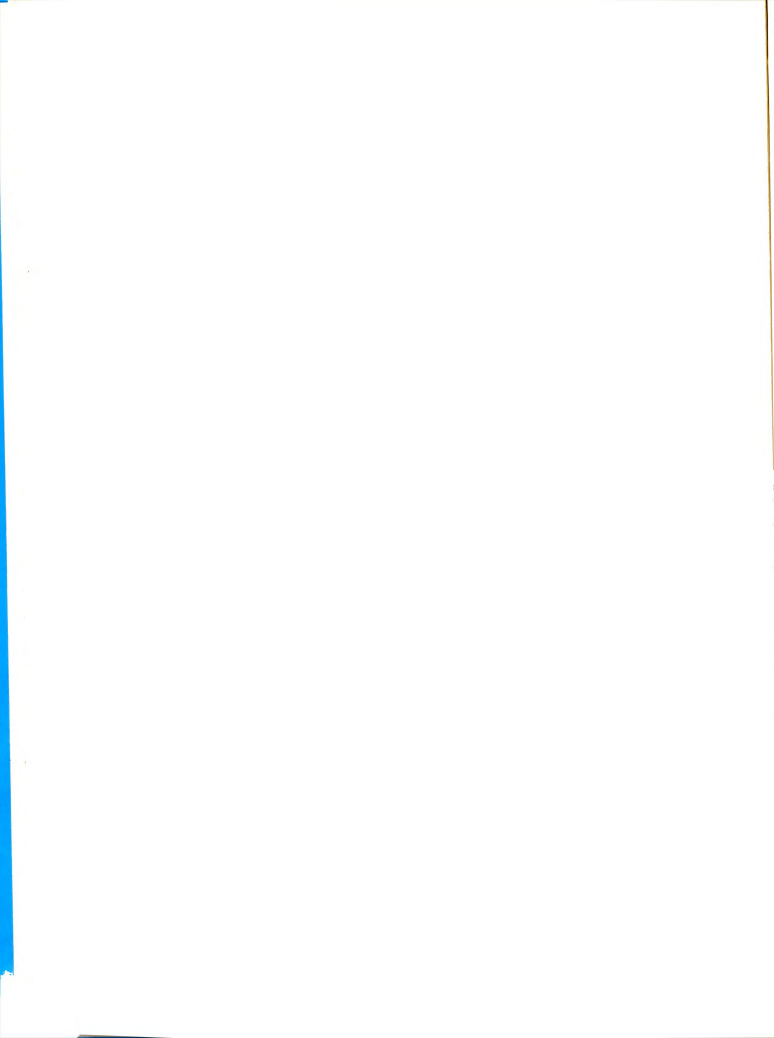
One of the most critical aspects of this teacher shortage, then, is the qualified teacher who chooses to leave his teaching career. This decision to leave teaching is made by the individual teacher, yet the basis of this decision and the percentage of industrial education teachers leaving per annum appears not to have been researched in the State of Michigan.

The Problem

Statement of the Problem

The purpose of this study was to determine (1) the percentage of the sample of secondary industrial education teachers in Michigan who leave the profession in a given year, and (2) to determine differences in pretested professional attitudes between active teachers and teachers who leave the profession. The test instrument was given to measure attitudes of industrial education teachers prior to the time they chose to leave the profession. The hypothesis was that the attitudes of those teachers who remain in the profession differ from those who leave. Areas of attitudes examined were about the individual's role as a teacher and his relations with administrators, colleagues and the community.

Six variables were examined as possibly interacting with the main effect. These were: (1) size of the school in which the individual teaches, (2) number of years of teaching experience, (3) age of the teacher, (4) those

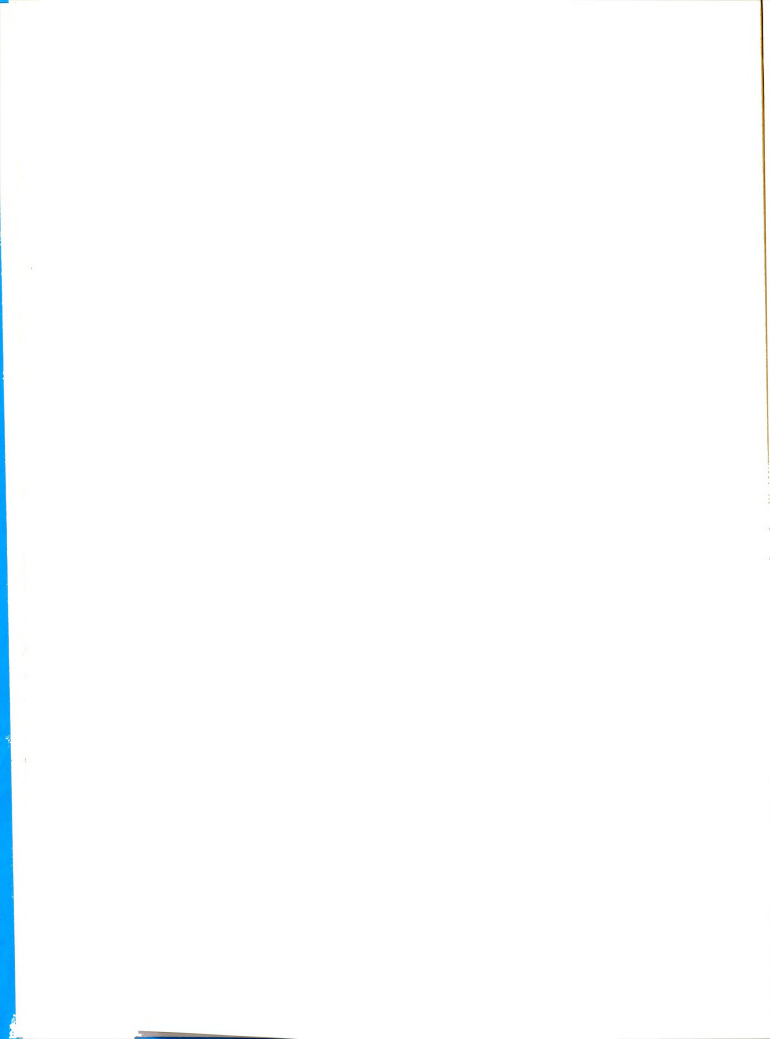


having taught and left the profession but later returned, (5) number of moves in the profession, and (6) attitudes of industrial arts teachers as compared to vocational education teachers. These variables were analyzed in the eight subcategories of the test instrument: (1) economic worth and wages paid, (2) work requirements, (3) community role, (4) relations with administrators, (5) relations with students, (6) opportunity for professional advancement, (7) capabilities as a teacher, and (8) personal satisfaction in the profession.

Importance of the Study

A high incidence of departing teachers may be an indicator of the vitality of a profession or professional group. Confirmation of a high attrition rate would necessitate an answer to the question, "Why do teachers leave?" Logically, the search for the answer would begin by asking those who have left about their decision-making process. Based on accumulated data, present methods of teacher preparation could be evaluated or the position of the secondary school as an influencing factor in teacher mobility may be routinized.

A positive return (few teachers leaving the profession) may be ample evidence that the present practices in education and preparation of teachers are quite adequate. However, studies done on teacher mobility and loss to the profession tend to indicate that rates of mobility are higher than may be desired.

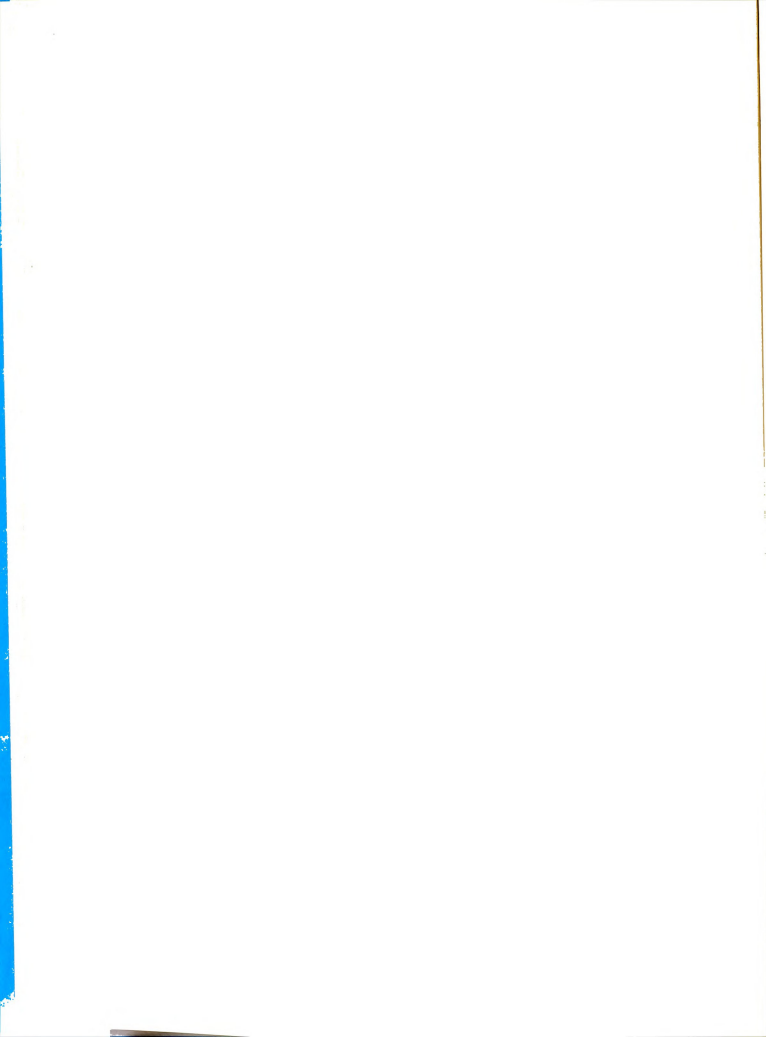


Projected estimates of mobility for 1968 by the United States Office of Education (USOE) were that of 1,892,000 full-time public-school teachers, 135,000 (9.8 per cent) will move to different buildings or school systems. An additional 110,000 (5.8 per cent) will quit the profession.⁹ Ralph C. Bohn, past president of the American Industrial Arts Association, indicated that approximately seventy-five per cent of all industrial arts graduates enter the profession.¹⁰ The study, Teacher Supply and Demand in Public Schools, 1967, served as the basis for this statement.¹¹ Sixteen secondary school subject areas were included in this national study. It reported the percentage of 1966 graduates of teacher preparatory programs who entered the profession. The percentage of graduates who entered ranged from a high of 78.1 per cent for woman's physical education, to a low of 42.0 per cent for trade, industrial, vocational and technical education. Industrial arts ranked second of sixteen subject areas; 72.8 per cent of all graduates entered the profession. Mobility

⁹ National Education Association Research Division, "Teacher Mobility and Loss: Summary of Teacher Mobility and Turnover, 1965-1966 to 1966-1967," National Education Research Bulletin, 46:118-126, December, 1968.

¹⁰ Ralph C. Bohn, "Trends in Industrial Arts Education," (presented at Michigan State University Media Institute, East Lansing, Michigan, January 13, 1968).

¹¹ National Education Association, Research Division Teacher Supply and Demand in Public Schools, 1967 (Research Report 1967-R18. Washington, D. C.: The National Education Association, 1967), pp. 53-55.



of secondary and elementary teachers entails a large expenditure of time and money in the public schools. Its impact is apparent in recruitment, faculty stability, continuous curriculum upheaval and orientation problems.

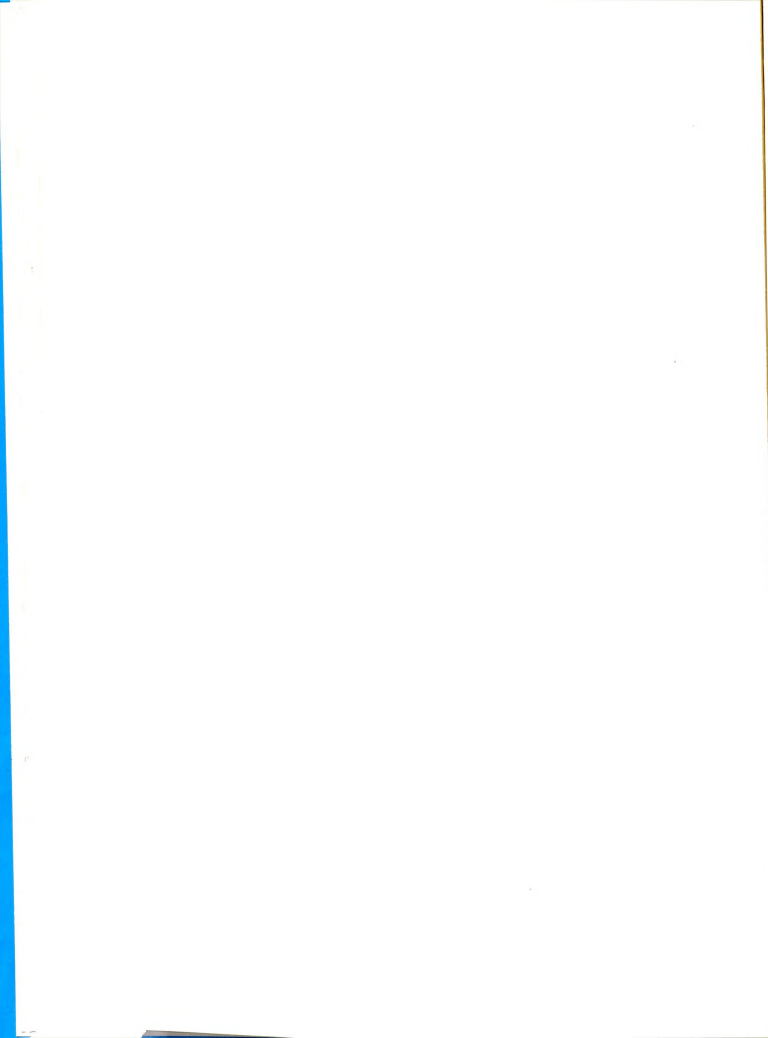
Teacher competencies as a criteria of determining good teachers from poor teachers has been extensively researched, " . . . but research on competencies has been unable to isolate any common trait or practice of good teachers."¹² The perceptualists use this as evidence that, "a good teacher is first and foremost a person, (italics in the original) and this fact is the most important and determining thing about him."¹³ This does not negate content in the teacher preparation program but, " . . . programs should be designed to promote personal adequacy as well as content adequacy."¹⁴

Combs portrays the "self" as a part of a truly adequate and self-actualizing person. A good understanding of one's self is highly desirable for all men but of an essential nature for a teacher. "The perceptual psychologist views learning as a personal discovery of meaning by the student, a highly personal matter involving the way he sees

¹² Arthur Combs, The Professional Education of Teachers (Boston: Allyn and Bacon, Inc., 1965), p. 6.

¹³ Ibid., p. 6.

¹⁴ Arthur W. Combs, (Chairman), Perceiving, Behaving, Becoming: A New Focus for Education, (Washington: Association for Supervision and Curriculum Development, 1962), p. 81.



himself and his experience."¹⁵ The failure to develop attitudes conducive to a good self-concept could be a factor in the decision to leave. If research indicates that self-perceptions are influential in the stability in the profession, then the perceptualists' viewpoints may well be considered in preparation of teachers.

Delimitations of the Study

A randomly drawn sample of industrial education teachers in the state of Michigan was surveyed. Participants in the study were under contract to teach in the secondary school for the 1968-1969 academic year.

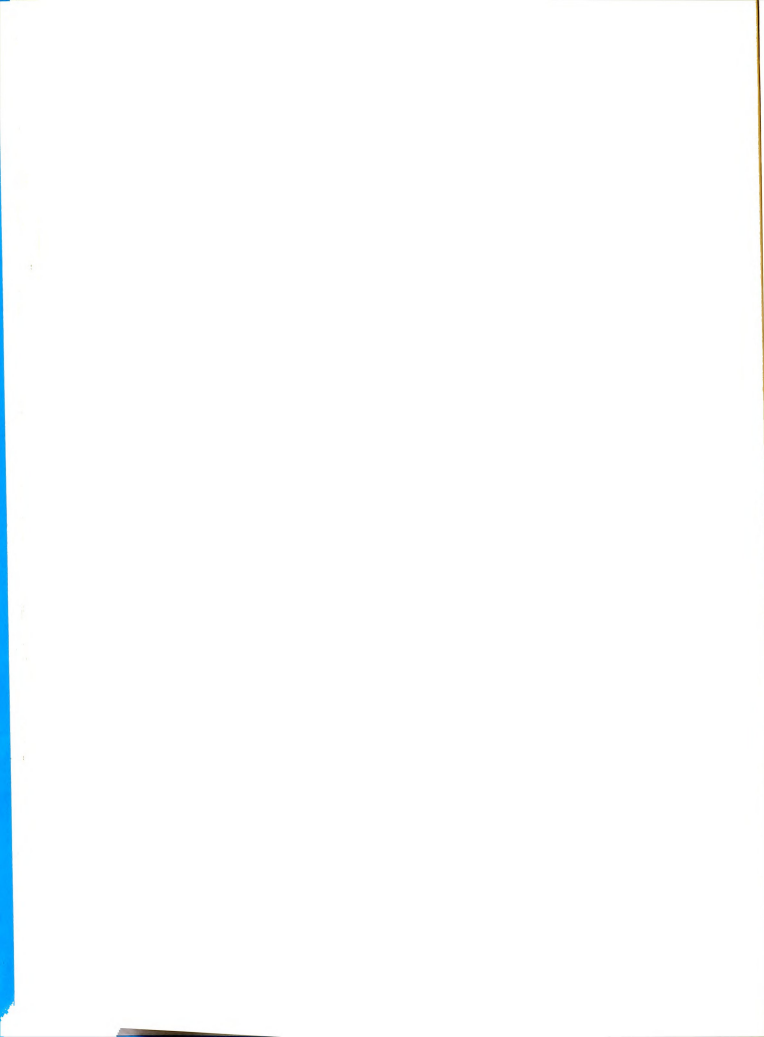
Individuals in the profession devoting fifty per cent or more of their working time to duties other than teaching industrial education were excluded. This exclusion applied to administrators, supervisors, counselors, coordinators and teachers in other academic areas.

Data was obtained during the 1968-1969 academic year. Administration of the test instrument was during January and February of 1969. A follow-up letter to determine those teachers leaving was made during May.

The test instrument was designed to examine areas of teacher attitude relative to areas of teacher dissatisfaction identified by Thorndike and Hagen, 1955.¹⁶ The intent of the

¹⁵Combs, *op. cit.*, p. 27.

¹⁶Robert Thorndike and Elizabeth Hagen, *Characteristics of Men Who Remained In and Left Teaching*, Cooperative Research Project No. 574, SAE8189, United States Office of Education, Department of Health, Education, and Welfare (New York: Teachers College, Columbia University, 1955), pp. 1 ff.



instrument was to measure attitudes of teachers in various professional roles. A previously developed test instrument which would measure specific attitudes was not located.

Basic Assumptions

In performance of his work role, the teacher's attitudes are a factor in his obtaining job satisfaction. Differences between attitudes about an ideal work role and the actual work role in which the individual functions may cause incompatibilities and dissatisfaction. Failure to develop a harmonious relationship between these attitudes may be a deciding factor in decisions of occupational mobility.

The decision of the teacher to leave a chosen profession, after an extensive preparatory period, appears to be due to two limitations: (1) the lack of evidence during the preparatory period for evaluating the compatability between the ideal work role held by the individual and the actual work role he will experience, and (2) a failure to provide opportunities for the development of necessary attitudes for teacher performance.

Measurement of attitudes concerning the degree of harmonious relationship between the ideal and actual work role can be made by a survey test instrument. Areas of disharmony will occur in relation with perceptions held by the individual on himself, administrators, associates and community.



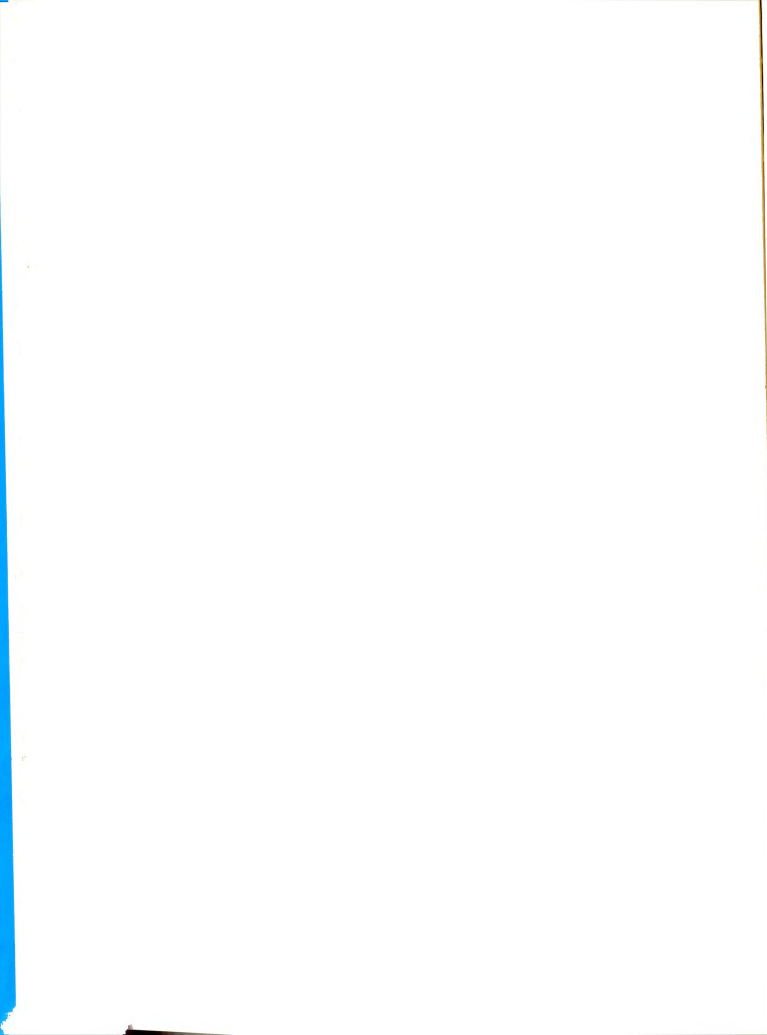
Survey data is representative of the actual attitudes held by the teacher. Opinions and feelings are studied. The desire to respond "openly" and "honestly" to a test instrument without prior lowering of feelings of insecurity, anxiety and hostility towards a questionnaire is possible.

In a given year a percentage of teachers will decide to leave the profession. Data to validate this assumption for industrial education teachers in Michigan was unavailable. In September, 1968, a preliminary telephone survey of five school systems was conducted by the author. The approximate percentage leaving the profession per annum was 15 per cent. This percentage would be higher than national norms for teacher loss. Reasons for teachers leaving industrial education and validation of this assumption are critical to this study.

Definition of Terms Used

Industrial Education Teacher

An industrial education teacher shall be defined as an individual who is employed to teach industrial arts, industrial-vocational education or industrial-technical education. Preparation for certification to perform in this capacity usually requires completion of a baccalaureate degree. Requirements for a degree in industrial education include competencies in general studies, professional education and technical education.



Industrial Arts Teacher

An industrial arts teacher is a person employed to teach courses deriving content from an industrial base and transmitting the skills, knowledge, and attitudes from this base as general education. Industrial arts is that phase of general education dealing with tools, materials and processes of industry derived from the industrial and technological nature of society.¹⁷

Industrial-Vocational Teacher

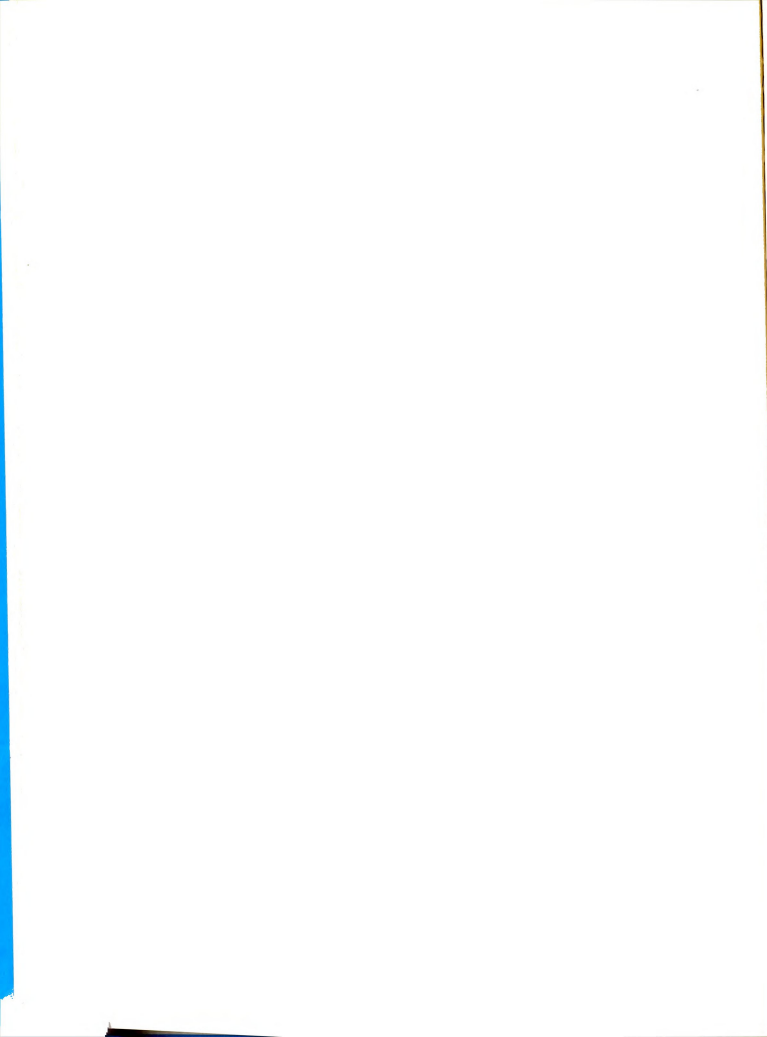
An industrial-vocational teacher is a person employed to teach industrial-vocational courses. Industrial-vocational course work is that portion of education which assists the individual in development of skills necessary for job entry. This portion of education is concerned with the training of tradesmen or craftsmen.

Vocational teachers surveyed in this study were employed as teachers in the secondary school.

Industrial-Technical Teacher

An industrial-technical teacher is a person employed to teach courses designed to prepare an individual with specific skills and knowledge for an occupation in industry. Programs are usually available in community colleges for post-high school personnel. Emphasis of the program is the

¹⁷Gordon O. Wilber, Industrial Arts in General Education (Scranton: International Textbook Company, 1948), p. 2.



astery of a body of essential and related technical information to a manipulative specialization used in the performance of a job. This portion of education is concerned with the training of technicians.

Industrial-technical teachers were surveyed only if they were teaching in the public school in a program for the secondary school level. Placement of technical teachers for analysis was in the vocational education category.

Mobility

Mobility is the transition of an individual, created or modified by human activity, from one social position to another social position. Directions of mobility may be vertical or horizontal relative to social strata.¹⁸

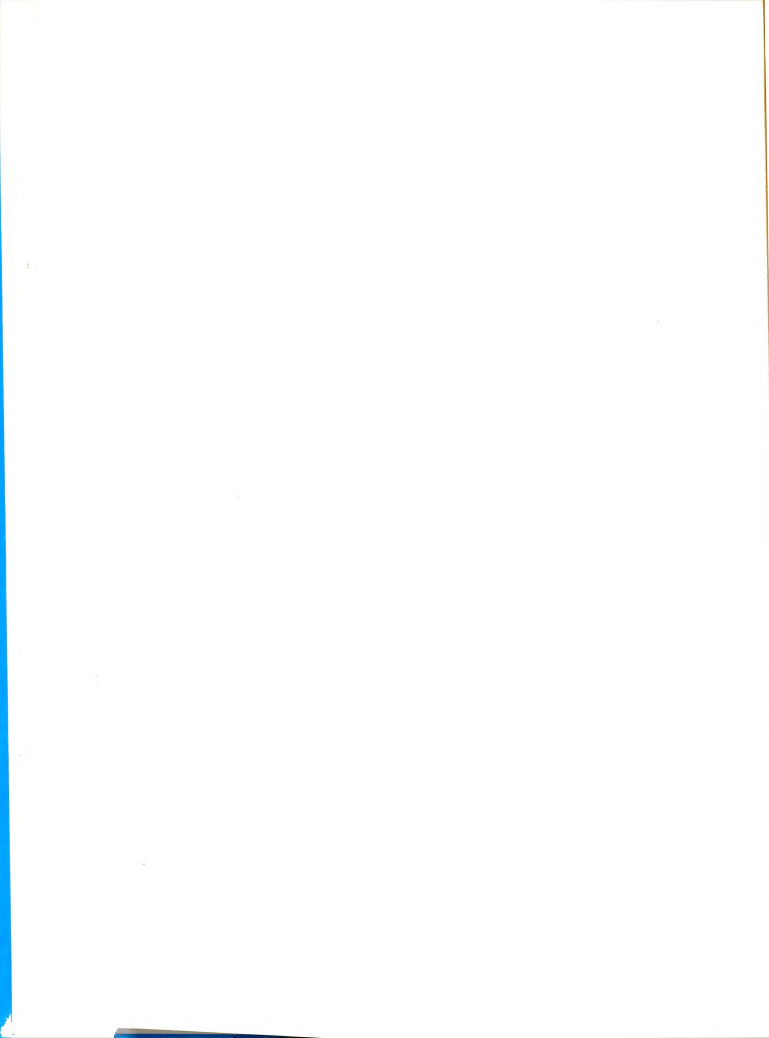
Active Teacher

An active teacher is a person employed by a school system to teach industrial education courses at the secondary level.

Out-Mobiles

Out-mobiles are teachers who have been actively involved in teaching secondary school industrial education, but have chosen to leave the profession. Individuals employed after leaving the public schools by an industrial company as teachers of its employees shall be designated out-mobile.

¹⁸Pitirim Sorokin, Social Mobility (New York: Harper and Brothers, 1927), p. 4.



Teaching Population Center

Teaching population center shall mean a school system in which the teacher is employed to perform his professional duties. Student enrollment was used as the criterion for stratum placement of the school system.

Attitude

A feeling of an individual towards or about some aspect of himself or his environment. The feelings of like or dislike toward one's job is an attitude. Attitudes may be positive, neutral or negative.¹⁹

The Research Hypotheses

The intent of this study was to compare the professional attitudes of industrial education teachers who remain active in the profession to those who become out-mobile.

Hypotheses examined in the study were:

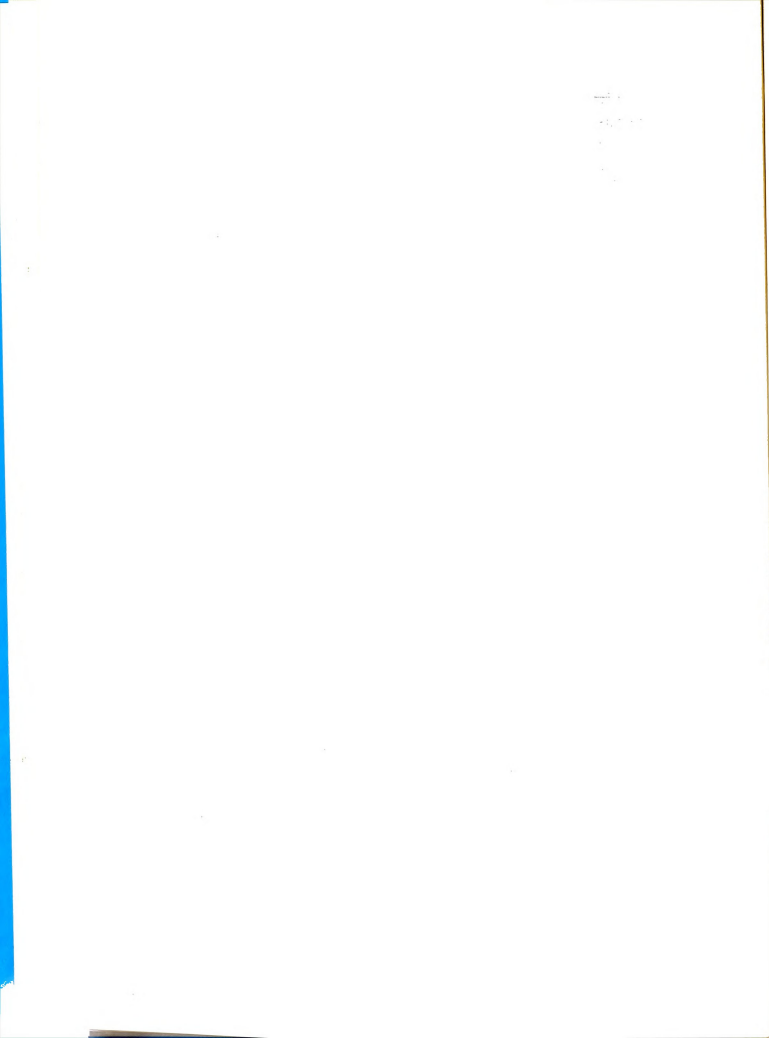
Multivariate Test for Main Effect

Hypothesis for main effect. There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers as measured by the attitude test instrument.

Multivariate Tests of Subcategories

Hypothesis I.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward economic worth and wages paid.

¹⁹ Allen L. Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century-Crofts, Inc., 1957), p. 2.



Hypothesis II.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward the work requirements of teaching.

Hypothesis III.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their community role.

Hypothesis IV.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward relations with administrators.

Hypothesis V.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their relations with students.

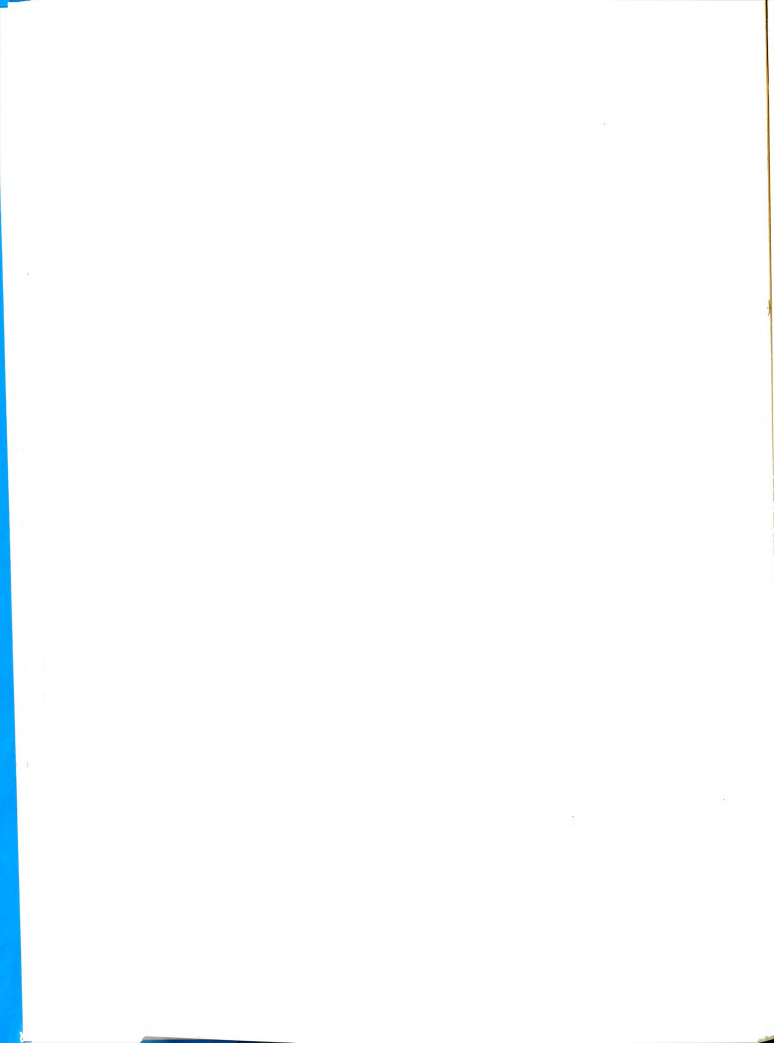
Hypothesis VI.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their opportunity for professional advancement.

Hypothesis VII.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their capabilities as a teacher.

Hypothesis VIII.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their professional satisfaction.

Variables Examined

Six variables were examined for possible interaction with the main effect: (1) size of the school in which the individual teaches, (2) number of years of teaching experience, (3) age of the teacher, (4) those having taught and left the profession but later returned, (5) number of moves in the profession, and (6) attitudes of industrial arts teachers as compared to vocational education teachers.



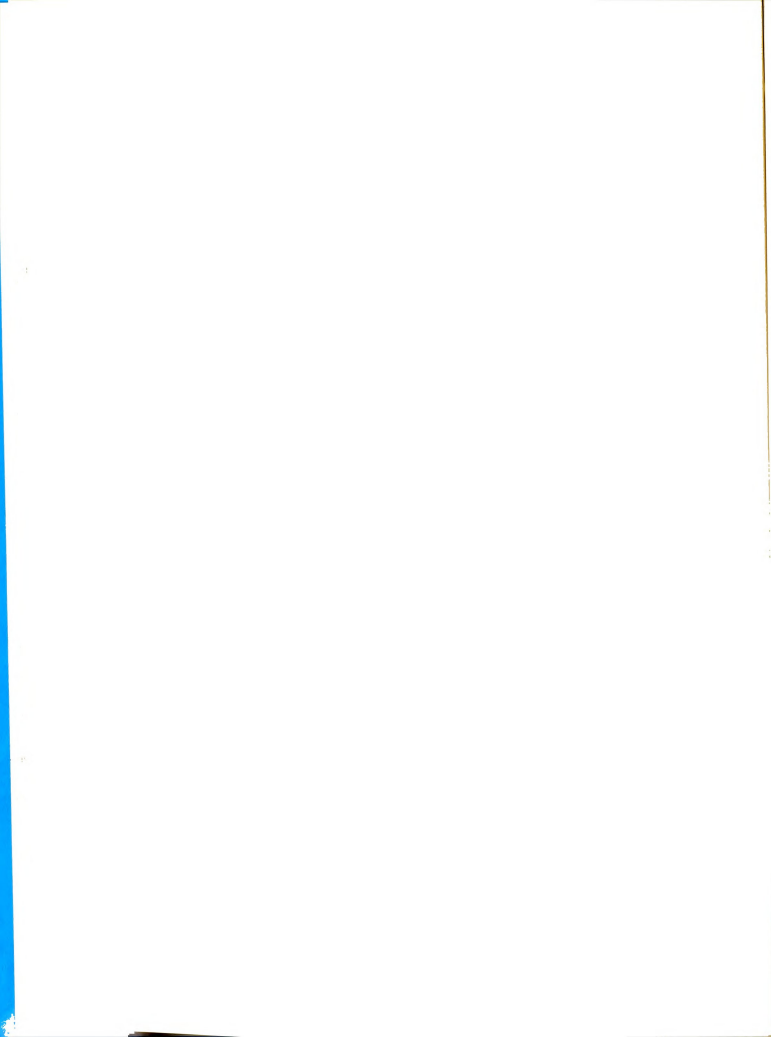
The relationship for every variable in each of these subcategories was examined: (1) economic worth and wages paid, (2) work requirements, (3) community role, (4) relations with administrators, (5) relations with students, (6) opportunity for professional advancement, (7) capabilities as a teacher, and (8) personal satisfaction in the profession.

Overview of the Study

This thesis includes the chapters: (a) review of selected literature, (b) research framework, hypotheses and statistical model used in the study, (c) the test instrument, (d) analysis of the data, (e) characteristics and interview of out-mobiles and (f) summary, conclusions, recommendations and implications of the study.

Chapter II is a review of selected literature. Theories and studies in social stratification, social mobility, mobility concepts for education, and consequences of mobility are summarized. The problems of teacher turnover and loss to the profession are discussed.

The research design, presented in Chapter III, is graphically displayed through the use of a PERT chart. The method of multi-stage stratified sampling is developed. Percentage returns obtained during this study are presented. Hypotheses in null and alternative format are given. Models utilized in analysis of data accumulated by the test instrument are elaborated. The format used in interviews of out-mobile individuals is described.



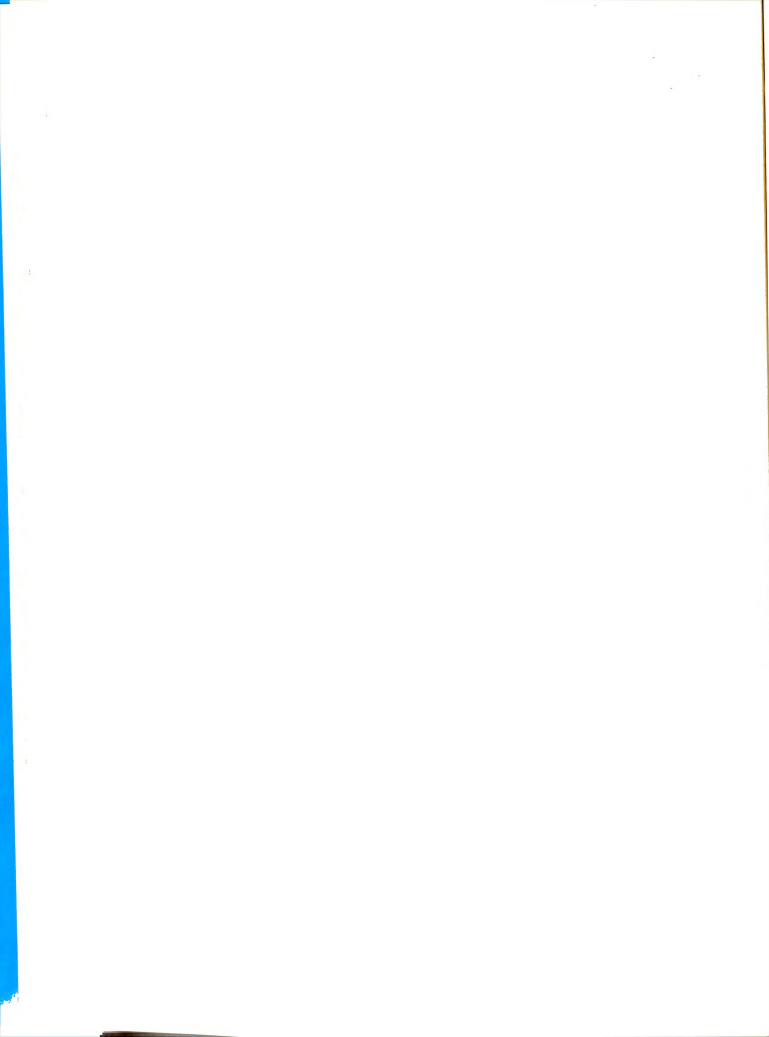
In Chapter IV, the test instrument is presented in four stages of development. A matrix format, four-by-eight model, was developed to examine possible aspects of differences between out-mobile and active teachers which could be used in the instrument. A Kuder-Richardson reliability index for pretest and posttest were calculated. The t-summated method was used for selection of the statements which composed the test instrument.

Analysis of the data is in Chapter V. Included are the statements of hypotheses, a probability statement and a statement of acceptance or rejection of the null hypotheses. Source tables are located in the appendix.

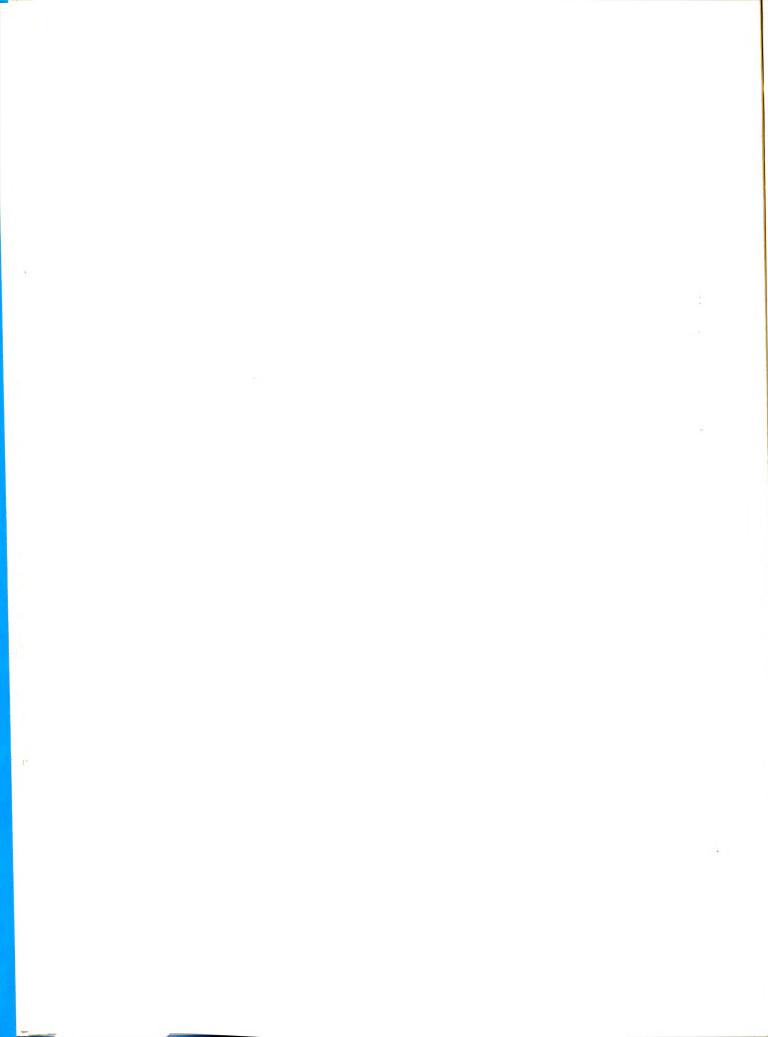
Interviews of out-mobiles are presented in Chapter VI. The bases of the interviews were the eight subcategories of the test instrument. Additional questions considered reasons for leaving the profession and the out-mobiles' projected employment. Characteristics of age, moves and experience are compared for out-mobiles to active teachers and secondary men teachers in the State of Michigan.

Summations, conclusions, recommendations, discussion and implications are in Chapter VII.

The review of literature, Chapter II, is intended to define and enlarge upon various aspects of mobility. Special emphasis is made on teacher mobility. The base of mobility theory is found in both sociology and psychology.



This presentation only considers the sociological aspects of mobility. Mobility in education is presented for both special subject areas and national overview studies.



CHAPTER II

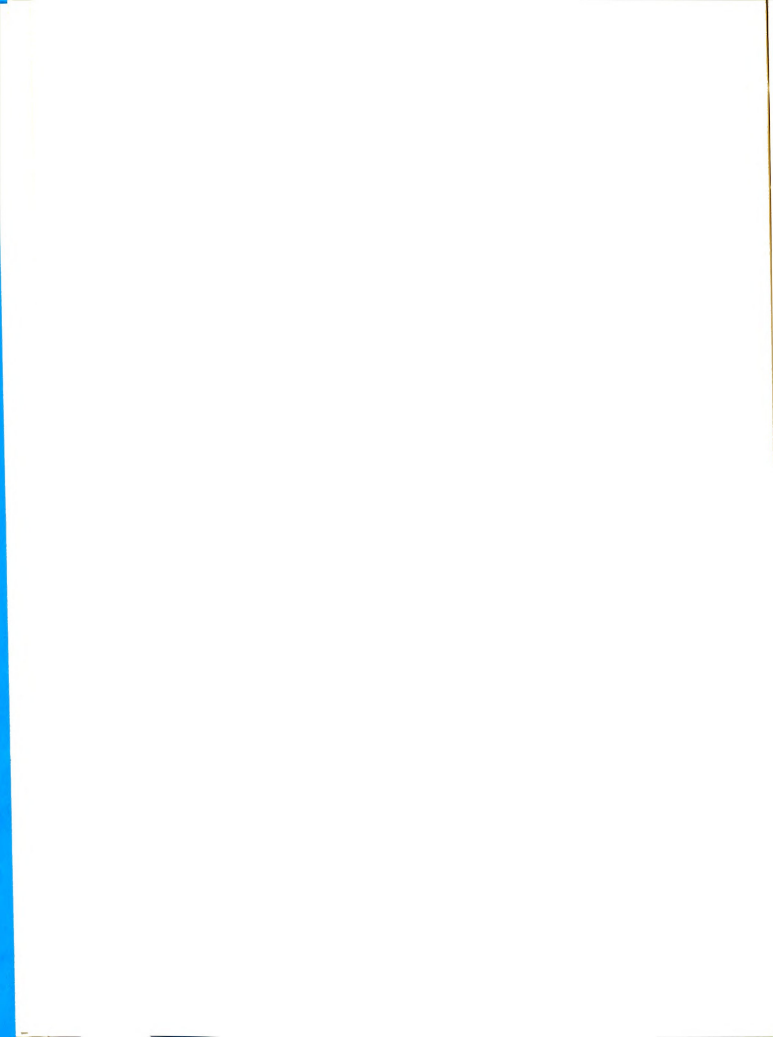
REVIEW OF SELECTED LITERATURE

A review of selected literature including concepts of mobility by sociologists and studies of teacher mobility and loss is presented in this chapter. Mobility of the individual or groups has been studied by sociologists. Consequences, motivational forces and degree of mobility are questions frequently posed in these studies.

Teachers, as a group, appear to be quite mobile. Studies which best define the degree of mobility in the profession are presented. Some researchers have examined the extent and consequences of mobility by subject area.

Part one includes a review of the following mobility concepts:

- A. Social stratification.
- B. Social mobility.
- C. Ranking categories.
- D. Measurement of social movement.
- E. Factors affecting mobility.
- F. Channels of vertical mobility.
- G. Education as a channel of mobility.

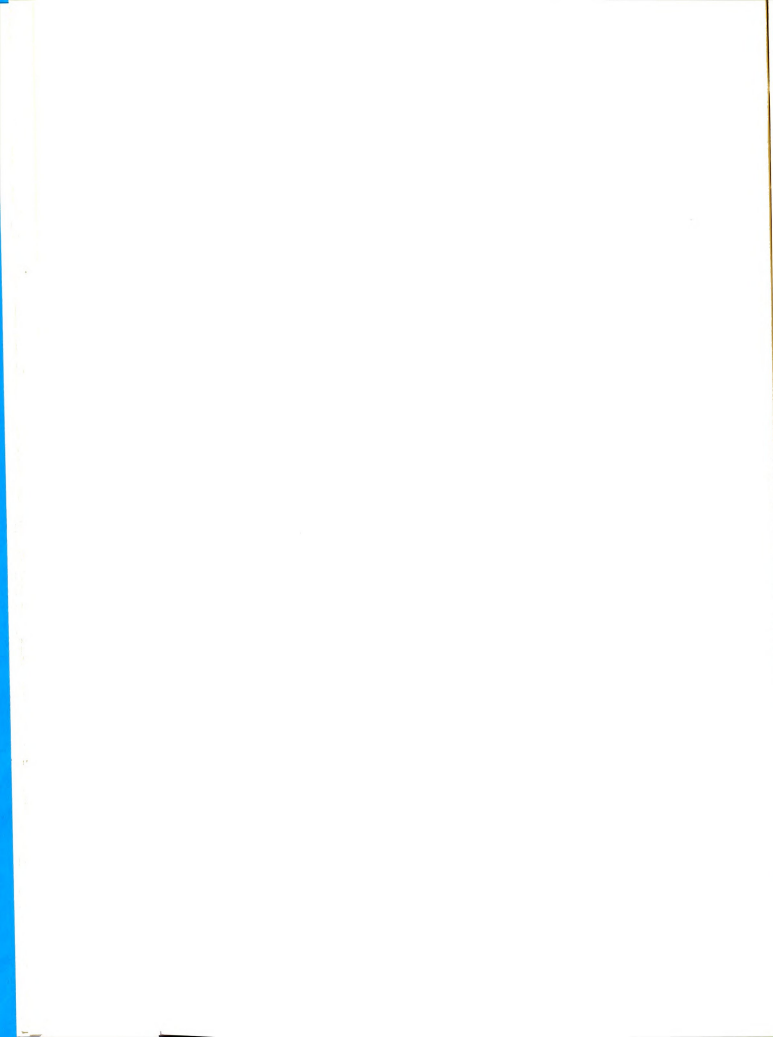


- H. Models and support of individual mobility.
- I. Academic ability and mobility.
- J. Education and upward mobility for people of lower classes.
- K. Consequences of mobility to the structure.
- L. Consequences of mobility to the individual.
- M. Mobility and job satisfaction.

Literature from studies in sociology are used to exemplify the above topics and concepts.

In part two, teacher mobility has been examined by researchers. This has been done for some subject areas in some geographic locales. The Research Division of the National Education Association has examined teacher mobility on a national scale. A review of research in teacher mobility with attention to implications of mobility rates for the profession is included as a second section of this chapter. It is organized around these topics.

- A. NEA study of teacher mobility and loss, 1967.
- B. Comparison study of men who "left" and "remained" in teaching.
- C. Turnover of beginning teachers.
- D. Turnover of teachers in ghetto schools.
- E. Vocational agriculture studies of mobility and loss.



F. Background characteristics of special education teachers and their decisions to leave.

G. Industrial education teacher follow-up studies.

A synopsis of these concepts of mobility and teacher mobility studies is presented in the summation.

Theoretical and Practical Concepts of Mobility

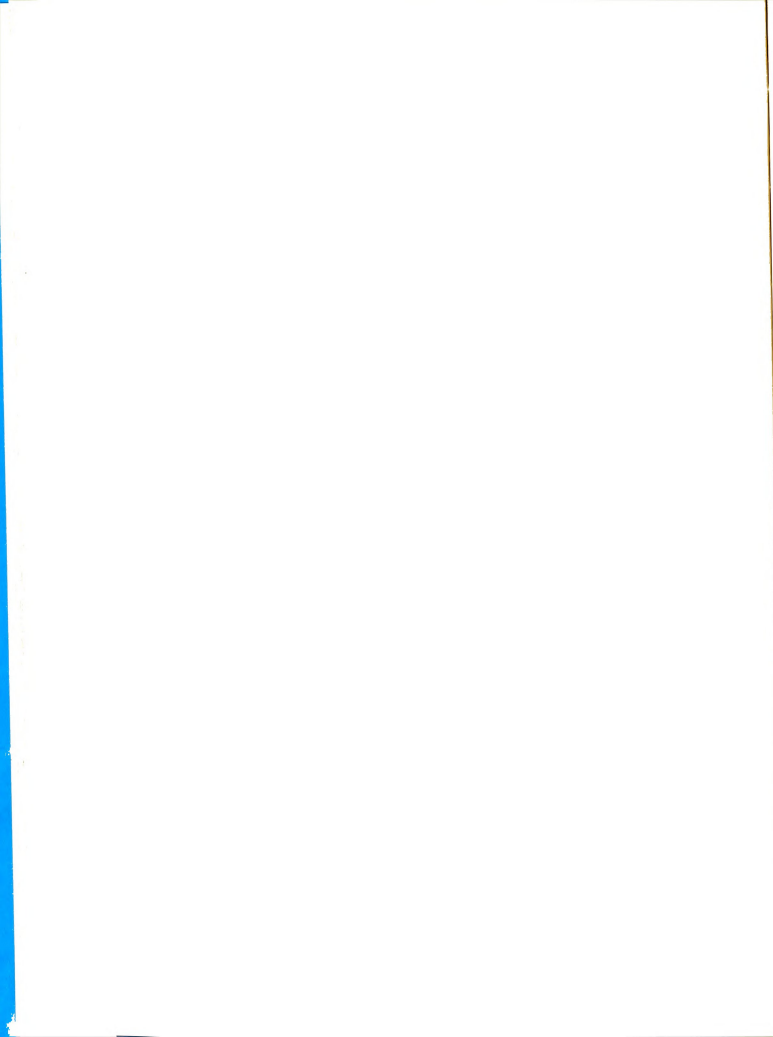
Social Stratification

Inherent to the study of social mobility is the concept of social stratification. Social stratification is defined as a "persistent system of ranking of social positions,"¹ with individuals at various locations in each ranking. This rank, defined as a social space, is the area in which the individual must function in his environment. Identifying these positions means ". . . to define his or its relations to other men or other social phenomena chosen as the 'points of reference.'"² This entails defining, ". . . (1) the indications of a man's relations to specific groups, (2) the relation of these groups to each other within a population, and (3) the relation of this population to other populations included in the human universe."³

¹James M. Beshers, Urban Social Structure (New York: Free Press of Glencoe, 1962), pp. 127-58.

²Pitirim Sorokin, Social Mobility (New York: Harpers and Brothers, 1927), p. 4.

³Ibid., p. 5.



The concept of social stratification relates first to an absolute ranking of position within society; second, to the capability of defining these positions through referent groups and points. Critical to the study of mobility are both "ranking" and "measuring".

Social Mobility

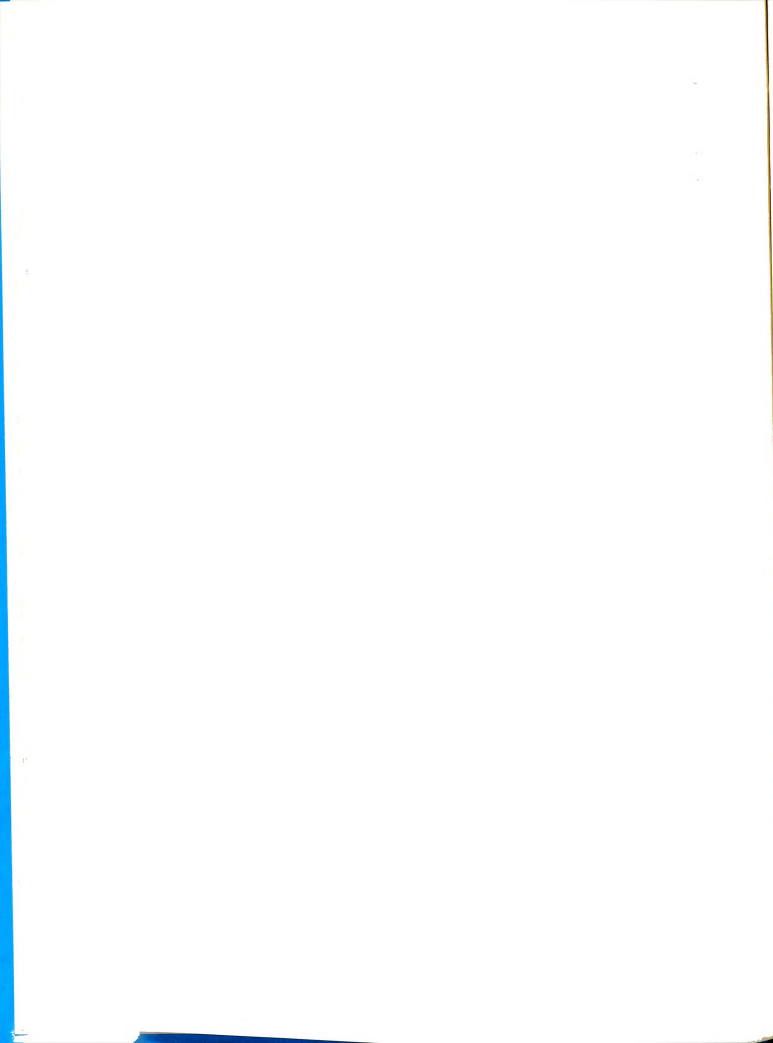
"By social mobility is understood any transition of an individual or social object or value from one social position to another."⁴ The concept connotes "movement" which from a societal viewpoint, " . . . is a process; a 'moving equilibrium' may be maintained by patterned reshuffling of individuals. From the individuals' point of view, mobility is change; his end state differs from his previous condition."⁵

Mobility is identified in directions of either horizontal or vertical. "Vertical social mobility is the relations involved in a transition of an individual (or a social object) from one social stratum to another."⁶ The direction of vertical mobility may be either descending or ascending, viewed as "sinking" or "climbing". By

⁴Ibid., p. 133

⁵R. F. Curtis, "Conceptual Problems in Social Mobility Research," Sociology and Social Research, 45:387, July, 1961

⁶Sorokin, op. cit. p. 312



horizontal social mobility or shifting, is meant the transition of an individual or social object from one social group to another situated on the same level."⁷

A study of mobility usually involves the measurement and direction of movement of the individual within the social strata.

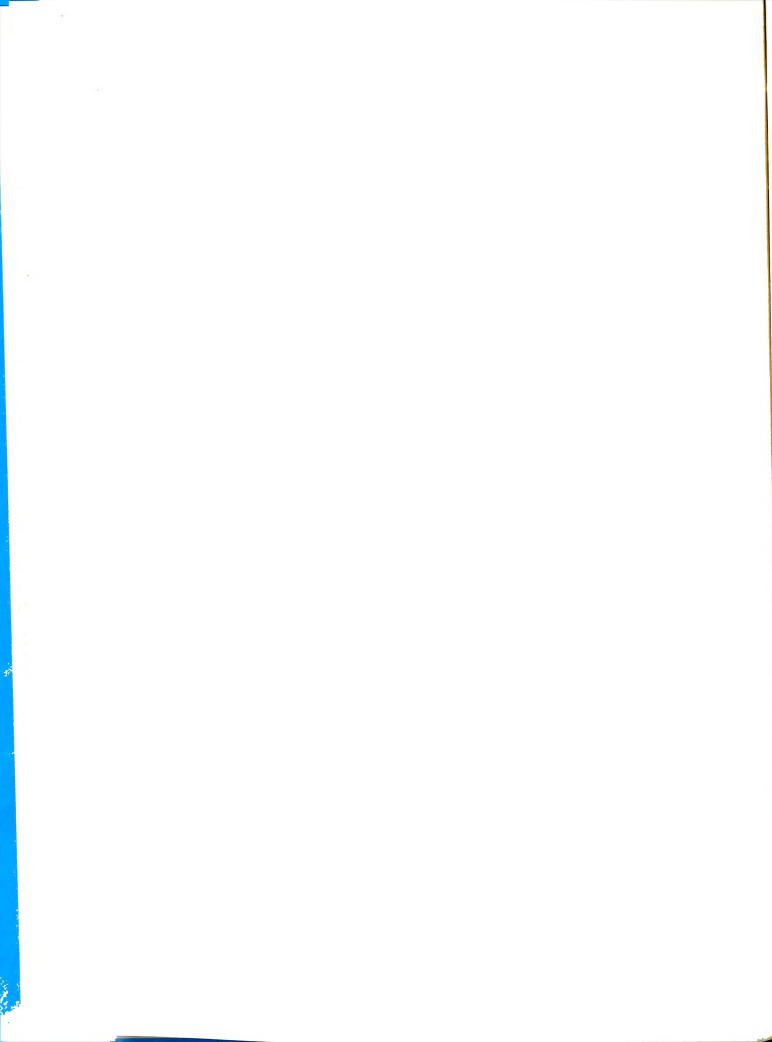
Mobility may also be considered from the aspects of "intergenerational mobility" or from "intragenerational mobility." The former refers to " . . . movement in the occupational and social hierarchies between generations," while the latter refers to " . . . movement in the occupational and social hierarchies during a person's adult life."⁸

General principles of social mobility were presented by Sorokin, 1927, in his theoretical work, Social Mobility. These are:

1. First proposition--There has scarcely been any society whose strata were absolutely closed, or in which vertical mobility in its three forms--economic, political, and occupational--was not present.
2. Second Proposition--There has never existed a society in which vertical social mobility has been absolutely free and the transition from one social stratum to another has had no resistance.

⁷Ibid., p. 133

⁸B. Stracy, "Some Psychological Consequences of Inter-generational Mobility," Human Relations, XX (February, 1967), 3.

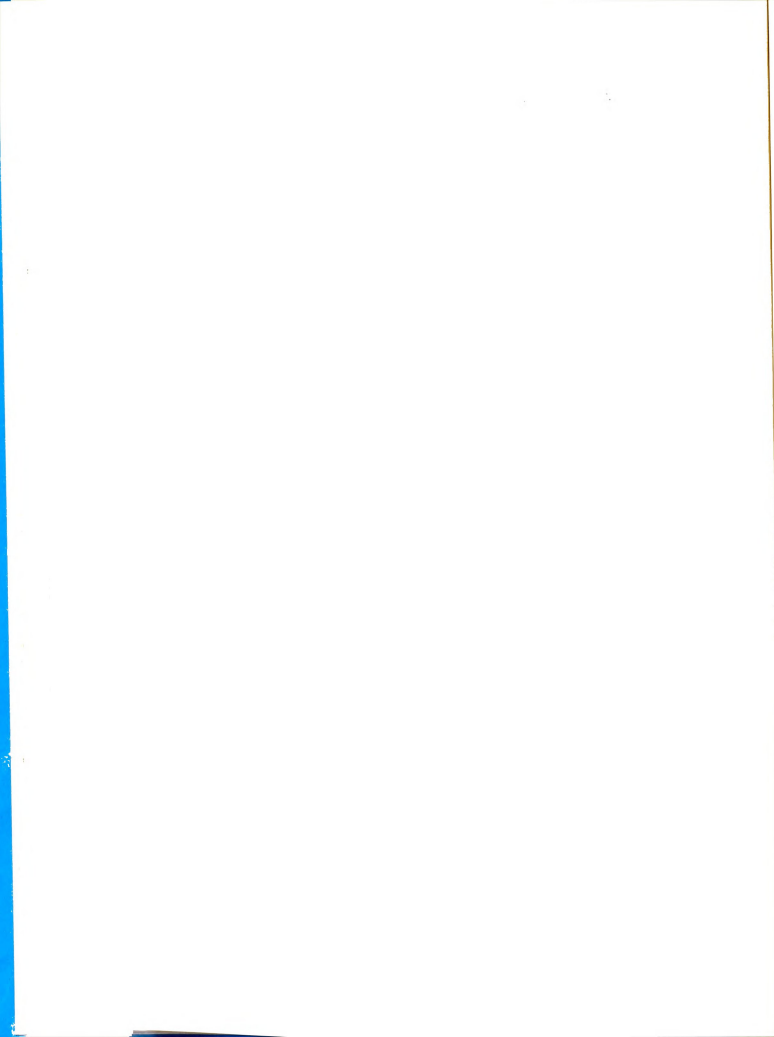


3. Third Proposition--The intensiveness, as well as the generality of the vertical social mobility, varies from society to society (fluctuation of mobility in space).
4. Fourth Proposition--The intensiveness and the generality of the vertical mobility--the economic, the political and the occupational--fluctuate in the same society at different times.
5. Fifth Proposition--As far as the corresponding historical and other materials permit seeing, in the field of vertical mobility, in its three fundamental forms, there seems to be no definite perpetual trend toward either an increase or a decrease of the intensiveness and generality of mobility. This is proposed as valid for the history of a country, for that of a large social body, and, finally, for history of mankind.⁹

The fifth proposition has been of major concern and equal frustration to the sociologist. An intra-occupational study of mobility concluded that " . . . evidence . . . indicates a possible trend toward rigidity in the American opportunity structure"¹⁰ Rigidity would decrease the rate of mobility. This conclusion was reached on the bases that: (1) introductory jobs are a result of satisfying some criterion, e.g., needs of industry, and, (2) the selection of promotion as based on upper and upper-middle

⁹Sorokin, op. cit., p. 133-160.

¹⁰R. Perrucci, "Significance of Intra-Occupational Mobility: Some Methodological and Theoretical Notes, Together with a Case Study of Engineers," American Sociological Review, 26:874-883, December, 1961.



family backgrounds would result in increased stratification-solidification of social levels.¹¹

The assumption of increased rigidity is more carefully surmised to be " . . . an open question whether these rates have changed significantly in the course of industrialization. Offhand one would think that mobility rates increased with the advance of industrialization, but it is impossible to subject this thesis to an empirical test" ¹²

A study on trends of mobility in the United States summarized that " . . . the 1962 matrices produced more 'upward' mobility--particularly into salaried professional and technical positions--and less 'downward' mobility--into lower blue-collar and farm occupations--than did 1952, 1942 or 1943 matrices." ¹³

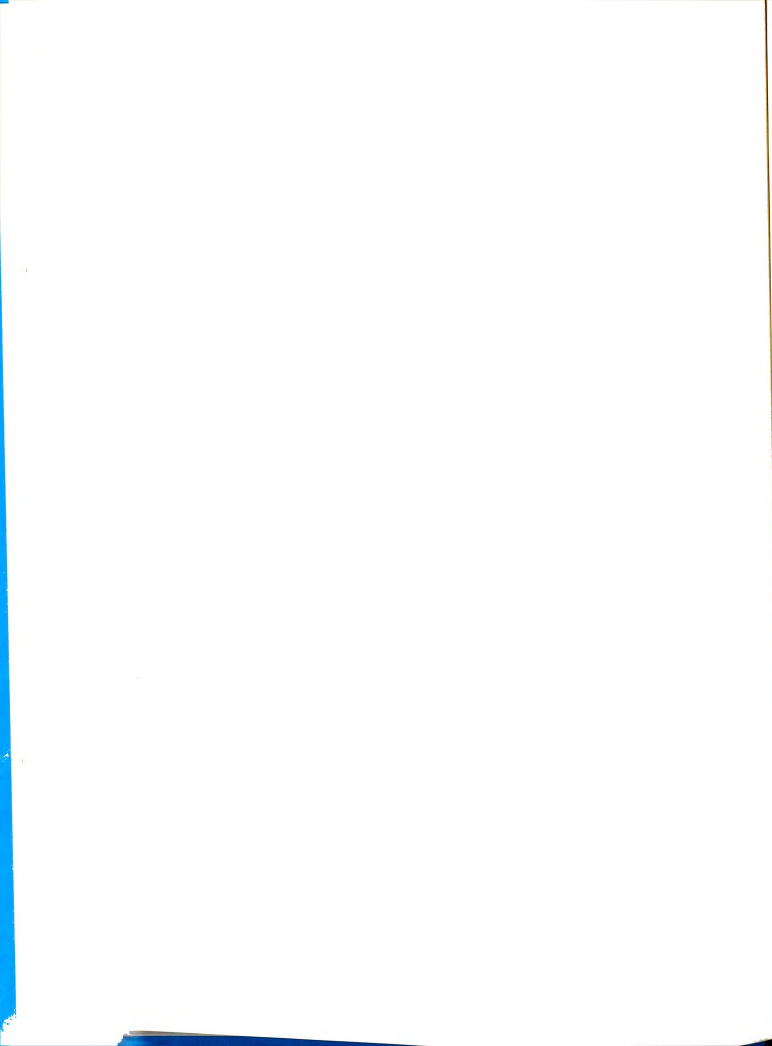
A recent study suggests that " . . . the occupational trends which have come about with industrialization will accelerate in a period of post-modernity, creating a new wave of opportunities in all western industrial societies, now becoming increasingly integrated." ¹⁴

¹¹Ibid., p. 881.

¹²S. M. Lipset and R. Bendix, Social Mobility in Industrial Society (Los Angeles: University of California Press, 1966), p. 112.

¹³O. D. Duncan, "The Trend of Occupational Mobility in the United States," American Sociological Review, 30: 498, August, 1965.

¹⁴J. Porter, "Future of Upward Mobility," American Sociological Review, 33:19, February, 1968.



Empirical evidence to refute the fifth proposition appears to warrant considerable study. Apparently, in the United States, since the end of World War II, a gradually increasing rate of mobility has been experienced.

Ranking Categories

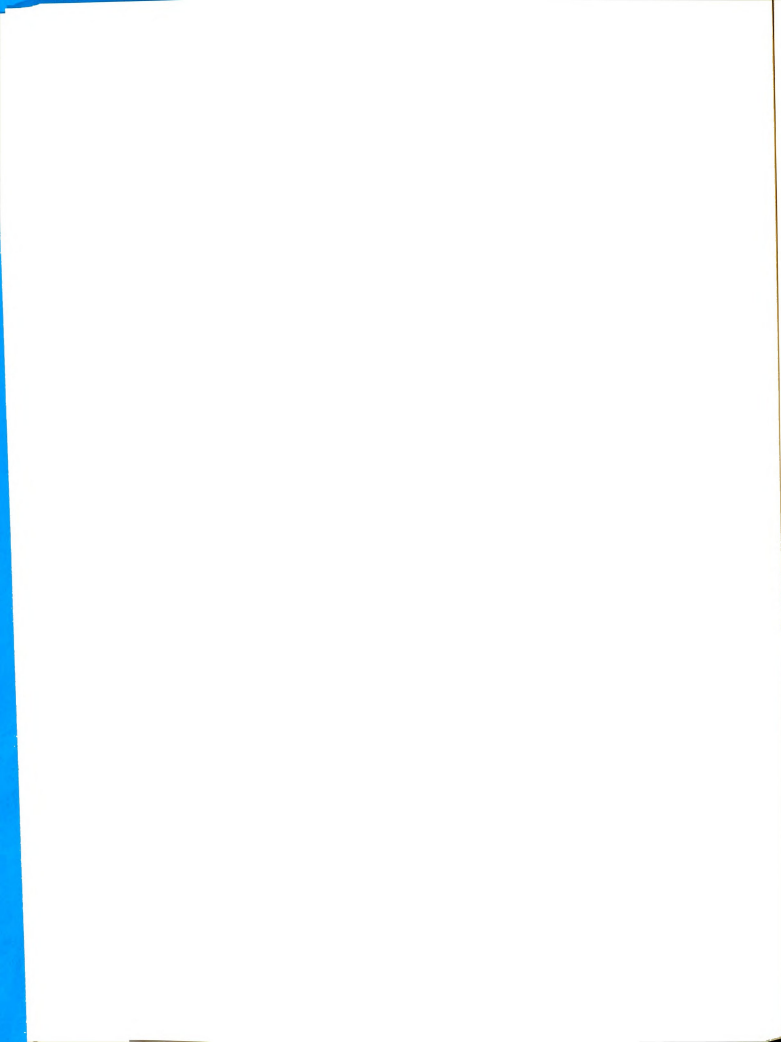
A critical element in the study of mobility is the capability of the investigator to rank individuals or groups relative to the total social structure. Ranking criteria require that individuals can be placed into groups. Common categories are by occupation, consumption, social class and power.¹⁵

Occupations are the most common indicator of social stratification. They are warranted different levels of esteem: rank of esteem appears quite consistent throughout cultures. Occupations of approximately the same rank form the basis of an occupational class.

Consumption ranking is based on the logic of ranking the producer by production indices and the consumer by consumption. Total earnings are not a valid indicator of consumption, but: "The best operational index to consumption class is . . . amount of income spent on prestigious or cultural pursuits."¹⁶

¹⁵R. Bendix and S. M. Lipset, Class, Status and Power (New York: The Free Press, 1966), p. 563 ff.

¹⁶Ibid., p. 563.



Social class is the development of strata in society based on intimate relations of groups of peoples who accept each other as equal and qualify for intimate association. Studies of this type usually are involved in inter-generational patterns of mobility: father-son, family-total blood relationship.

Power rankings are involved in the role of super-ordinate versus subordinates in relation to each other. Studies of this type usually are made on ethnic groups, labor unions or political organizations.

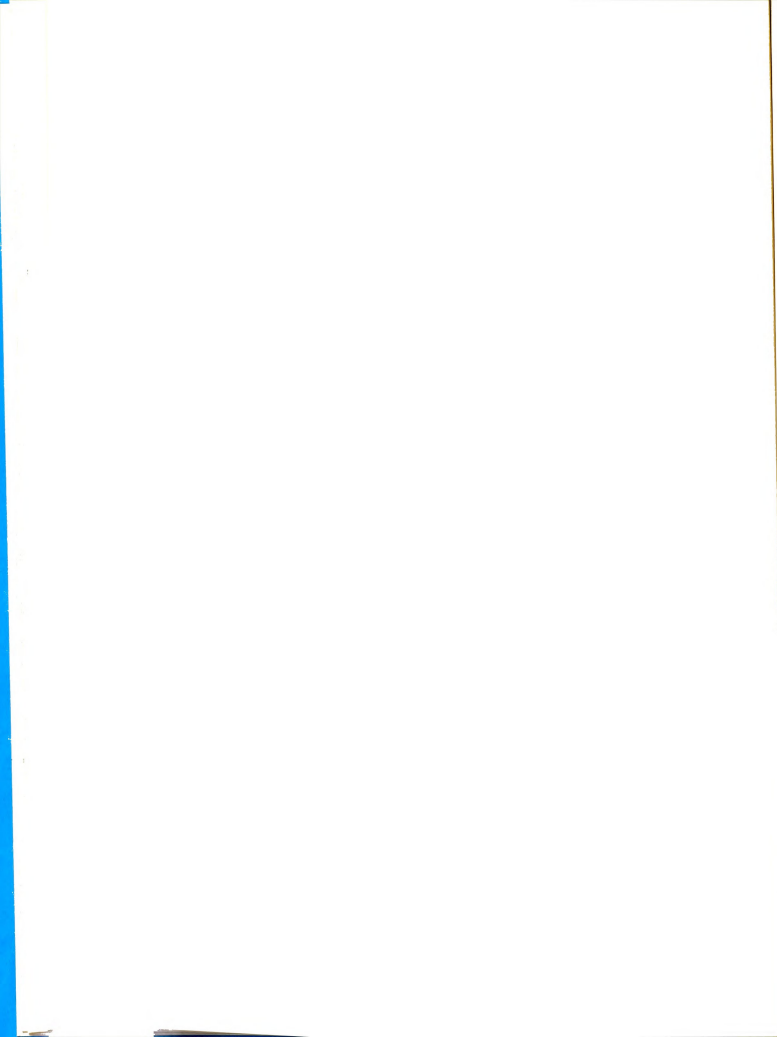
The preceding methods of ranking for study (occupations, consumption, social class, and power) all lack an explicit starting point, constructs of incrementation and terminating point for accurate measurement of mobility.¹⁷

Measurement of Social Movement

Identifying problems in conceptualization of "movement" reaffirms the complexity of the two prime elements of mobility studies. These are ranking and measurement of movement of individuals or groups. These two elements are essential to accurate descriptive and predictive work in mobility.¹⁸

¹⁷Ibid., pp. 561-564.

¹⁸C. F. Westoff, Bressler, and Sogi, "Concept of Social Mobility: An Empirical Inquiry," American Sociological Review, XXV (June, 1968), p. 378.



Elements in measurement of movement are identification of social rank, direction of movement, unit of measurement, distance and visibility of movement. Ranking categories are dependent upon social class of the individual, the family or the community. The direction of mobility, vertical or horizontal, is measured relative to a "reference point."¹⁹ Determination of the departure point and the arrival location are essential. The unit of measurement in movement requires the distinction between "amount" and "distance". "Amount involved the proportion of individuals who are upwardly or downwardly mobile within some stratification system."²⁰ "Distance" . . . is a measure of the number of 'steps' of upward or downward movement traversed by an individual or group."²¹ Actual visibility of movement may be evaluated subjectively--measurement of disposition, attitudes and values--or, objectively--visible evidence of change.

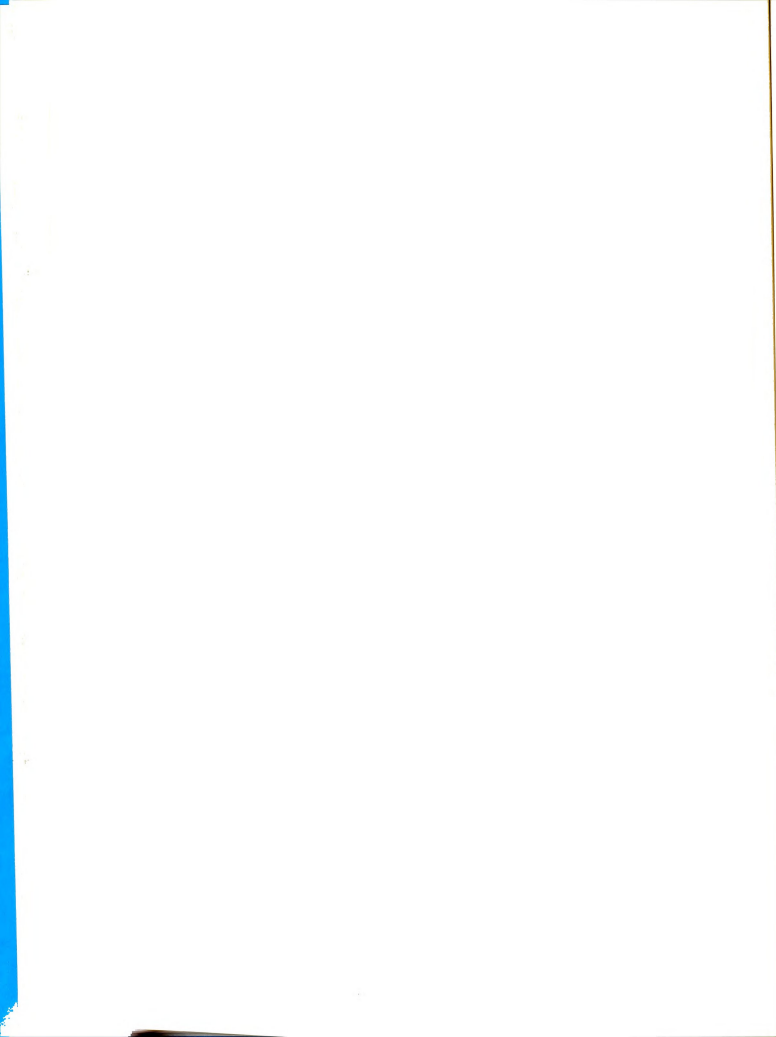
Factors Affecting Mobility

Mobility within a social structure is dependent on the degree of "openness" or "closeness" of the social

¹⁹P. Sorokin, op. cit., p. 133-160.

²⁰C. F. Westoff et al., op. cit., p. 378.

²¹Perruci, op. cit., p. 875.



structure. These refer ". . . to the variation that can exist within a gross occupational category (such as a profession) and the implications this variation has for estimating variation among occupation categories."²²

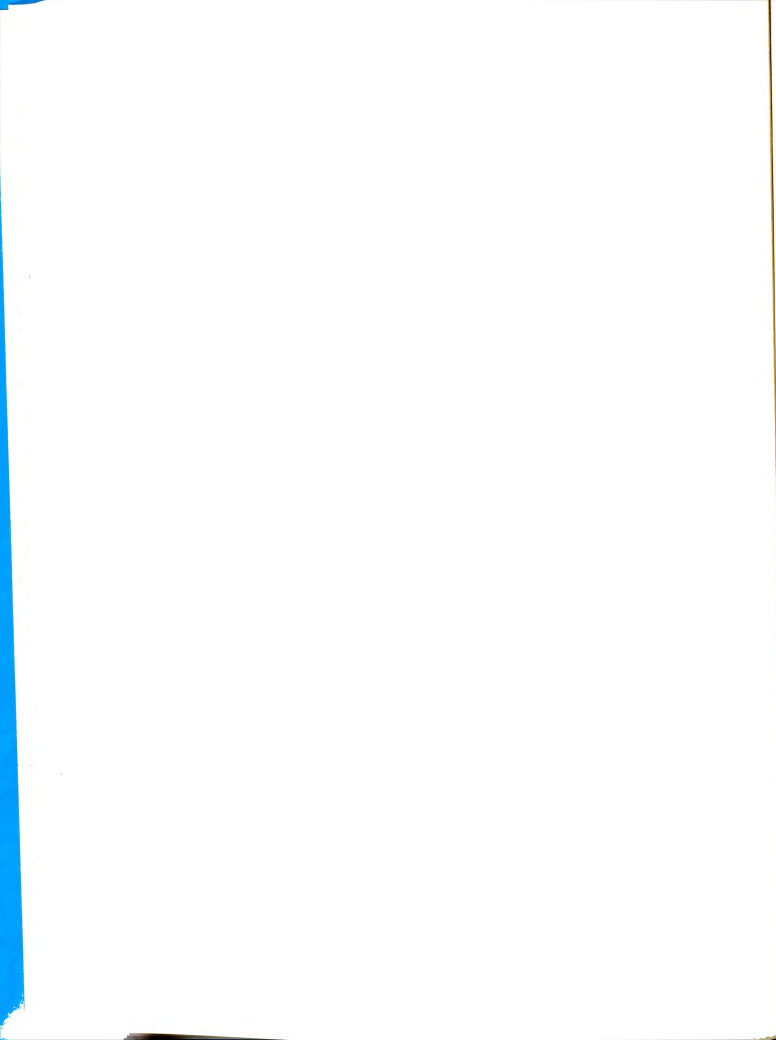
Openness of social strata is dependent upon two factors: (1) the supply of vacant status positions, and (2) the interchange of ranks.²³ The supply of vacant positions ". . . in a given stratum is not always or even usually constant."²⁴ If the expansion of one stratum occurs, mobility will then occur between these two strata. If this mobility is from a lower stratum to an upper stratum, it is designated as vertical upward mobility.

Interchange is dependent upon size-stabilization of the stratum recipient to mobile actors. If this occurs, no more positions in a stratum exist, but incoming mobile actors force existing actors in that stratum to go to another stratum. The incoming actor replaces the vacated

²²S. M. Lipset and L. Zelterberg, "A Theory of Social Mobility," Class Status and Power, R. Bendix and S. M. Lipset, (ed.) (New York: The Free Press, 1966), p. 561 ff.

²³Ibid., p. 565.

²⁴Ibid., p. 565.



status position while the displaced returns to the other vacated position; thus, the interchange concept.

Both concepts (vacant status positions and interchange) are based on openness of strata to mobile actors; one increases in size to accommodate actors; the other remains constant, forcing incoming actors to displace other actors to other strata.

Motivation of the individual to become mobile, change his social status, is implied in a statement by Veblen. He says:

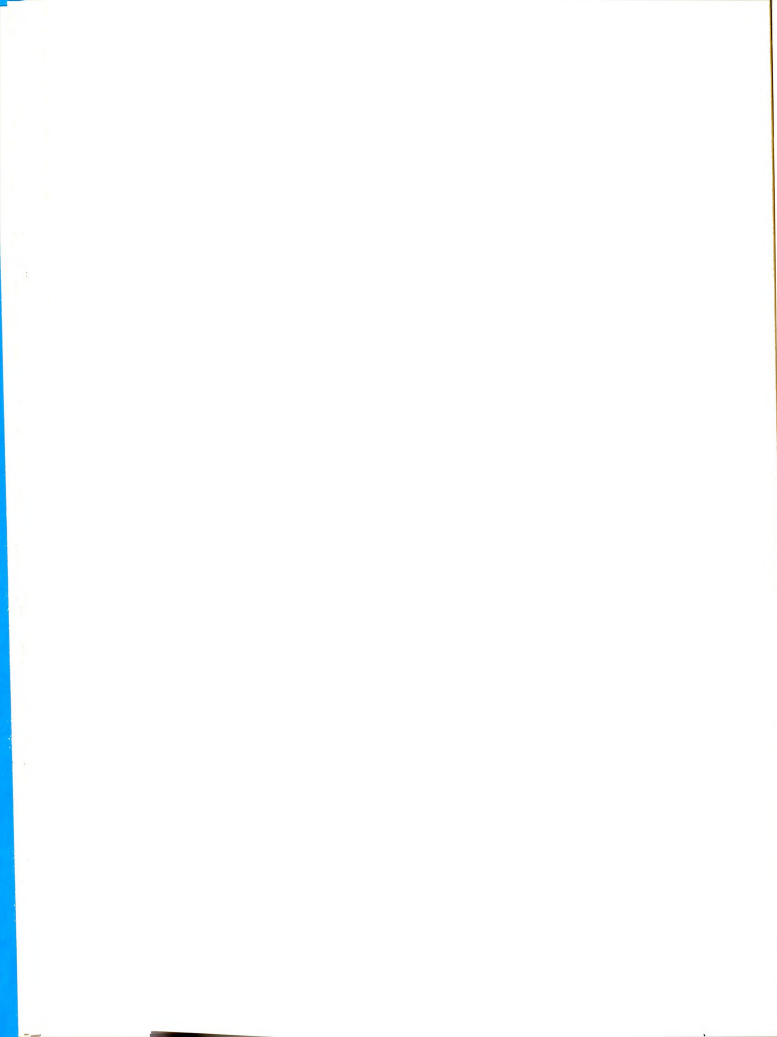
Those members of the community who fall short of a somewhat indefinite normal degree of prowess or of property suffer in the esteem of their fellowmen; and, consequently, they suffer also in their own esteem since the usual basis for self-respect is the respect accorded by one's neighbors. Only individuals with an aberrant temperament can in the long run retain their self-esteem in the face of the disesteem of their fellows.²⁵

Analysis of this statement presents two hypotheses:

(1) "the evaluation (rank, class) a person is given in his society determines in large measure his evaluation of himself," and (2) "a persons's actions are guided, in part, by an insatiable desire to improve even a favorable self-evaluation."²⁶ This theory suggests that motivation is

²⁵T. Veblen, The Theory of the Leisure Class (New York: The Modern Library, 1934), pp. 30-32.

²⁶S. M. Lipset and R. Bendix, Social Mobility in Industrial Society (Los Angeles: University of California Press, 1966). p. 61.



an effort by the individual to resist and improve himself from the lower strata of society. Seemingly, the stigma of loss of self-esteem by being in a lower strata is a universal and potent force.

Channels of Vertical Mobility

Vertical mobility, a universal feature in a stratified society, elicits means, avenues or channels for actors to move from one stratum to another. Social institutions which perform this function include the military, church, school, political, economic and professional organizations.²⁷

The complexity of mobility within any one of these social institutions warrants additional investigation. Further discussion will spotlight one of these channels of mobility--education.

Education as a Channel for Mobility

Opportunities for mobility are dependent upon the behavior and belief systems of the people in society.

" . . . an examination of education, which has become the principal channel for upward mobility in most industrialized nations,"²⁸ gives insight into the beliefs and values of the social system. In speaking about the significance

²⁷Sorokin, op. cit., pp. 164 ff.

²⁸Lipset and Bendix, op. cit., p. 91.

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of education, " . . . evidence points both to a constant increase of educational opportunities and the belief of equal opportunity."²⁹ "The impressive growth of opportunities for higher education cannot by itself be regarded as an index of upward social mobility."³⁰ Adequate evidence is unavailable to determine whether the number of high school and college graduates has increased more rapidly than the positions for which educational requirements are a prerequisite.

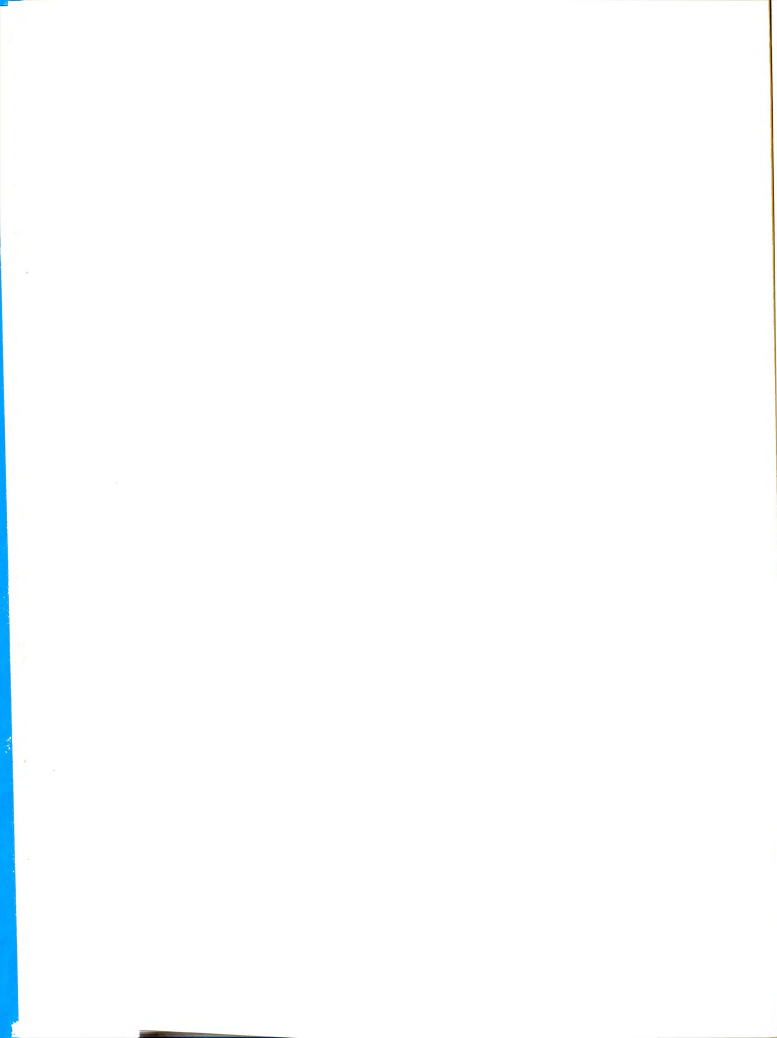
Upward mobility through educational attainment, strongly reinforced by societal values, tends to shape and mold school systems through direct and indirect methods. Models of modified school systems by potent folk norms are evident in a comparative study of the English and United States systems.³¹

The English educational system, defined as "sponsored mobility" system, in which " . . . mobility elite recruits are chosen by the established elite or their agents, and elite status is given on the basis of some criterion of supposed merit and cannot be taken by any amount of effort or strategy."³² The United States system

²⁹Ibid., p. 92. ³⁰Ibid., p. 93.

³¹R. H. Turner, "Sponsored and Contest Mobility and the School System," American Sociological Review, XXV (December, 1969), 855.

³²Ibid., p. 856.



is defined as "contest mobility" in which " . . . elite status is the prize in an open contest and is taken by the aspirant's own efforts. The contest is governed by some rules of fair play. Contestants have wide latitude in selection of strategies which they may employ. Since the "prize" of successful upward mobility is not in the hands of an established elite to give out, the latter cannot determine who shall attain it and who shall not."³³

The objectives of the school systems are different in the two models, " . . . contest mobility is to give elite status to those who earn it, while the goal of sponsored mobility is to make the best use of the talents in society by sorting persons into their proper niches."³⁴ The operations of the two systems are different as characterized by secondary education in the United States. In this system, an attempt is made to keep all "contestants" in the running at least through secondary education. The introduction of the community college is a further attempt to keep students "in the game" during the introductory period of college work. In the English system an attempt is made " . . . to indoctrinate elite culture in only those presumably who will enter the elite."³⁵

³³Ibid., p. 856 ff.

³⁴Ibid., p. 857.

³⁵Ibid.

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Models and Support for Individual Mobility

Individuals embarking into the mobility process need emotional and societal support. The school teacher, often overlooked as a factor in mobility, is the chief source of outside help.³⁶ High school peers play a less direct role in the mobility process. Their prime function is to provide a middle class learning environment in which mobile individuals are exposed to norms and behavior traits essential to the actor desiring to be successfully mobile.³⁷

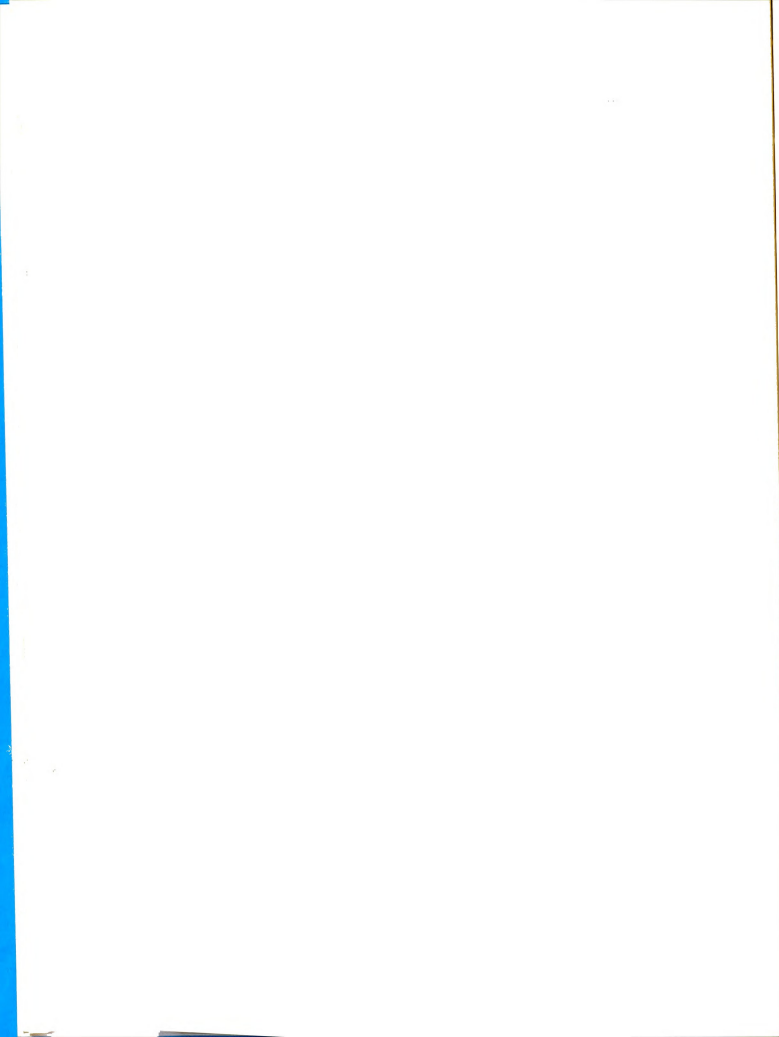
A social model which the upward mobile may emulate seems quite essential.³⁸ Upward mobiles use these models to formulate values and judgmental standards of the higher strata to which they aspire. "While the upward may depart significantly from modalities of behavior generally observed in the lower class, their prior learning experiences result in only a segmented assimilation of the varied norms and values that make up the middle class structure."³⁹

The father's position, relative to the eventual position of the son's occupational role, has been in a state

³⁶Ibid., p. 756. ³⁷Ibid., p. 756.

³⁸R. K. Merton, Social Theory and Social Structure (New York: The Free Press, 1957), p. 225 ff.

³⁹R. A. Ellis and W. C. Lane, "Social Mobility and Career Orientation," Sociology and Social Research, 50: 294, April, 1966.



of flux. Influencing factors are the rural-urban position of the family and the level of manual-nonmanual work done by the father. Results of one study are that " . . . education was becoming a more important determinant of occupational status, in terms of both its net influence apart from level of origin and its role as a visible intervening between origin and destination."⁴⁰ It concluded that the occupational status of the son was quite loosely related to that of the father. For white males, education was appreciably more important than father's occupation.

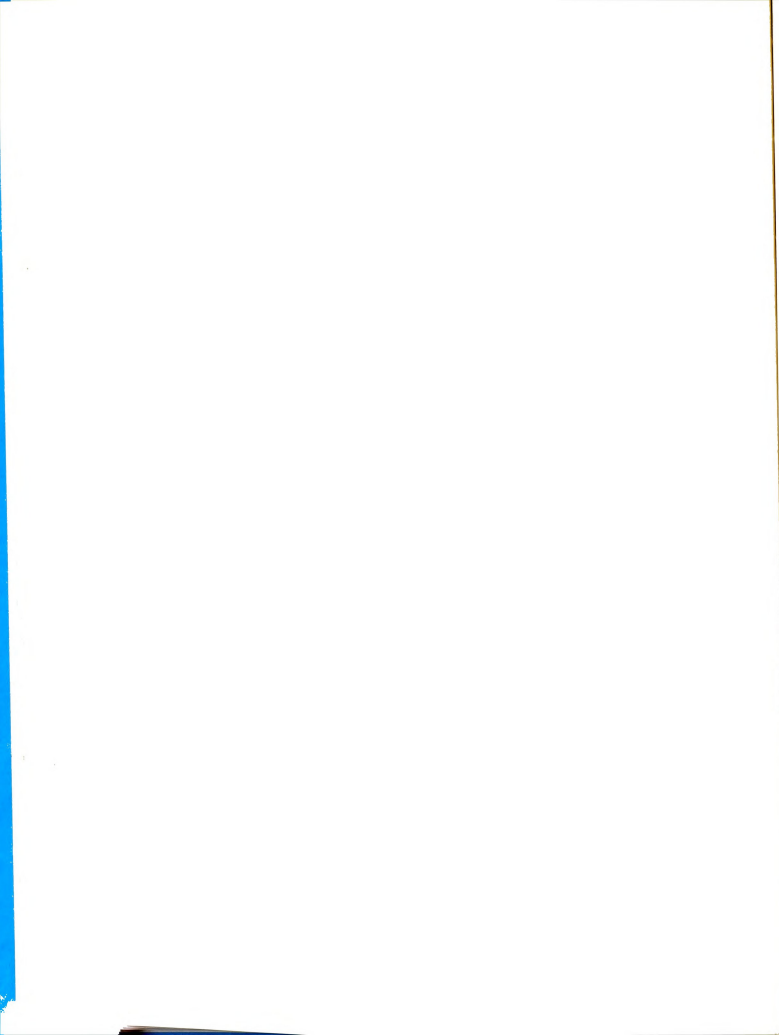
Academic Ability and Mobility.

A basic concept of vertical mobility is that the more capable individual will be allowed to pass upward to fill the more important position. The responsibility for this function is placed on education. "Education should serve as selector and sorter of talent for later assignment to occupational roles."⁴¹ But, as was found relative to occupations, "Location in class structure is an important determinant of achievement in the primary and secondary grades, and a particularly strong determinant of who goes to college."⁴²

⁴⁰O. D. Duncan and R. W. Hodge, "Education and Occupational Mobility: A Regression Analysis," American Journal of Sociology, 68:629, May, 1963.

⁴¹B. K. Eckland, "Academic Ability, Higher Education and Occupational Mobility," American Sociological Review, 30:735, October, 1965.

⁴²Ibid., p. 743.



Results of a study to determine correlations between class origin and academic ability, college graduation and occupational achievement were: (1) social class and high school rank, not positively correlated, (2) high school rank predicted college performance, and (3) college graduation and occupational achievement were highly correlated. High school rank had a strong influence on college graduation, but its effect on subsequent achievement of the student was less important.

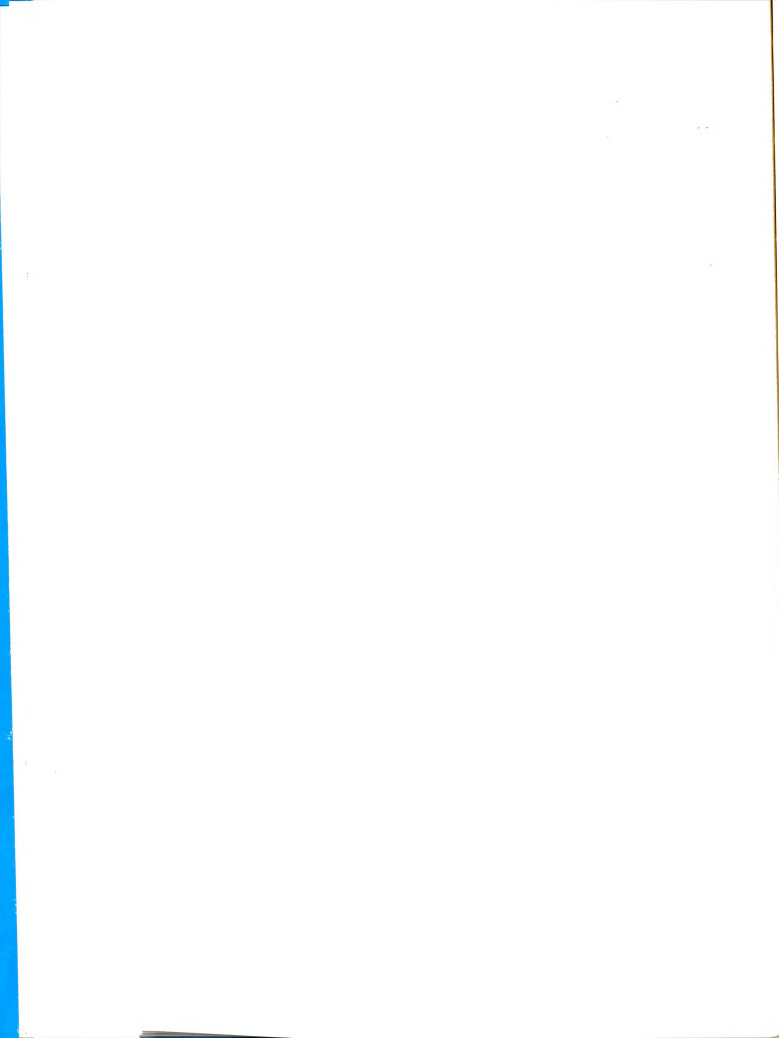
General conclusions were that achievements were not altered either by class origin or academic ability except to the extent of field of selection. Academic success apparently operates wholly within the school system, especially as a determinant of graduation. Its effect on occupational achievement apparently is very limited.⁴³

Education and Upward Mobility
for People of Lower Classes

The use of higher education as an upward mobile channel " . . . has spread much more slowly among young men with poorly educated fathers than among those with well educated fathers." ⁴⁴ Evidence indicates that " . . . the conditional probabilities of attending and completing

⁴³Ibid., p. 743 ff.

⁴⁴W. G. Spady, "Educational Mobility and Access: Growth and Paradoxes," American Journal of Sociology, 73:273, November, 1967.

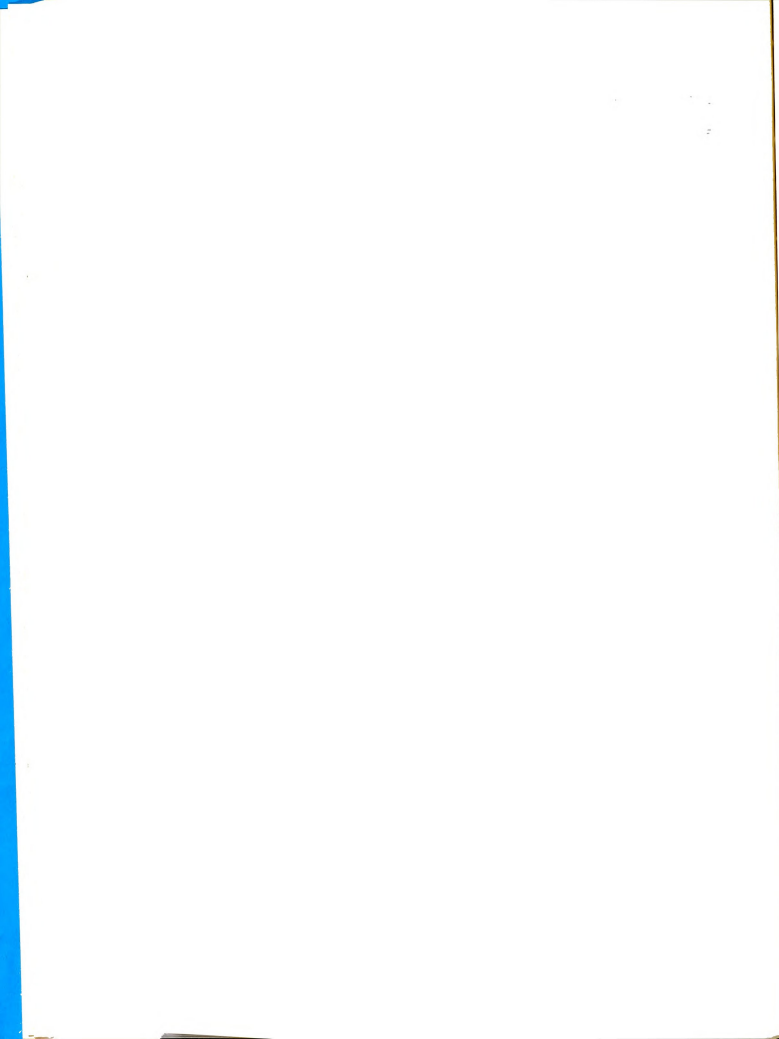


college (given that they completed high school and entered college respectively) have in fact decreased over time for the sons of poorly educated men," and that, " . . . the educational attainments of Negroes, however, is consistently lower than those of whites holding father's education constant."⁴⁵ What is occurring in society is that the son, in order to maintain the same occupational level as the father, must, in fact, attain a higher level of education. The conclusion was that, "Contrary to the assumption that the observed increases in high school and college graduation rates during this time have particularly benefited boys from lower social strata, we have found that the relative changes of such boys having reached and completed college compared with the sons of college-educated fathers have diminished over time."⁴⁶ The results, in effect, are that members of the lower class having completed high school and entered college have a lower probability of completing their program than sons of higher social class fathers.

Racial differences are involved because, "for nearly every status and age group both the objective and conditional probabilities of reaching given educational levels are higher for whites than for non-whites."⁴⁷ The

⁴⁵Ibid., p. 273. ⁴⁶Ibid., p. 273.

⁴⁷J. A. Davis, "Higher Education: Selection and Opportunity," School Review, 71:249, Autumn, 1963.



consequences of this situation in a highly industrialized society, such as the United States, presents a more serious dilemma than for lower class individuals in a developing country. We are reminded " . . . that occupational destinations and formal education appear to be more closely linked today than forty years ago."⁴⁸

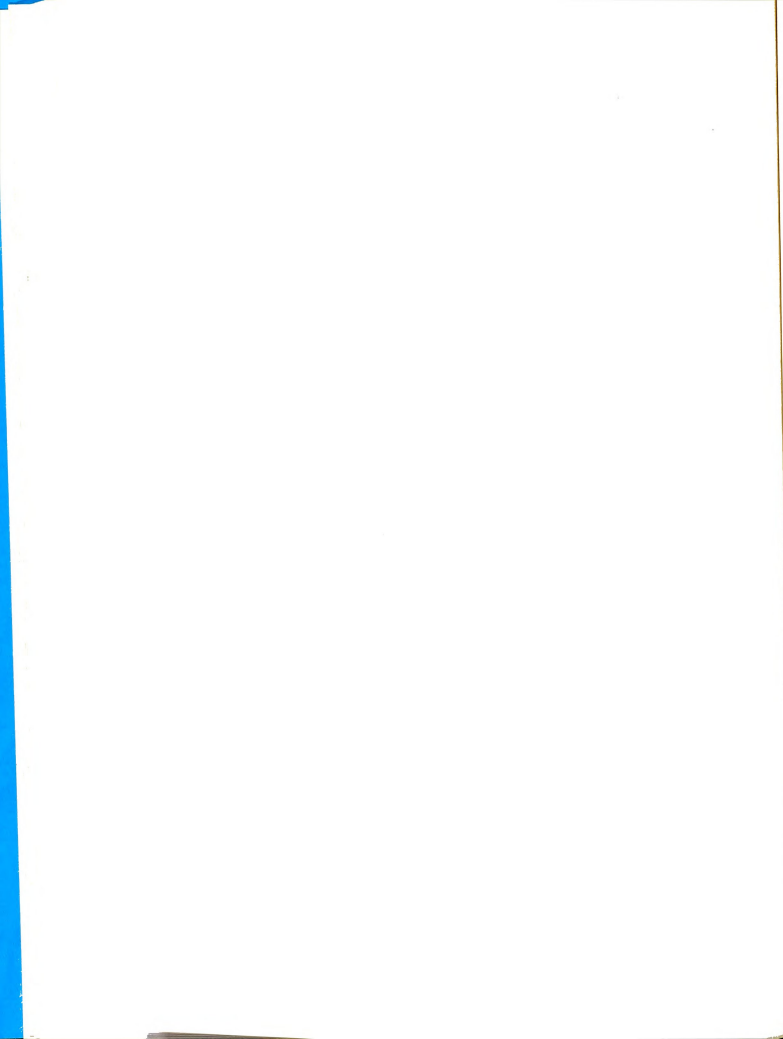
Consequences of Mobility to the Structure

Changes in the structure, because of mobility of actors, are caused by changes in attitudes, values and interests. Areas of change occur in political thought, family organization, intergroup relations and occupational satisfaction.⁴⁹

Political liberalism is more pronounced among individuals born into the middle class than those who have moved up into the class. Downward mobiles tend to be more conservative and appear to have lower self expectations. Children of professionals tend to be more liberal than those of managerial, clerical or sales occupations. Blue-collar born university students are more liberal towards civil liberties than children of managers, professional or clerical workers.

⁴⁸ Ibid., pp. 285-286.

⁴⁹ M. M. Tumin, Social Stratification: The Forms and Functions of Inequality (Englewood Cliffs: Prentice-Hall, Inc., 1967), p. 93 ff.



Families of lower classes having limited family connections with friends and neighbors tend to be least mobile. Upper class families having extended connections are more mobile than other groupings. Women having experienced rejection by both parents are overall more mobile than any other group.

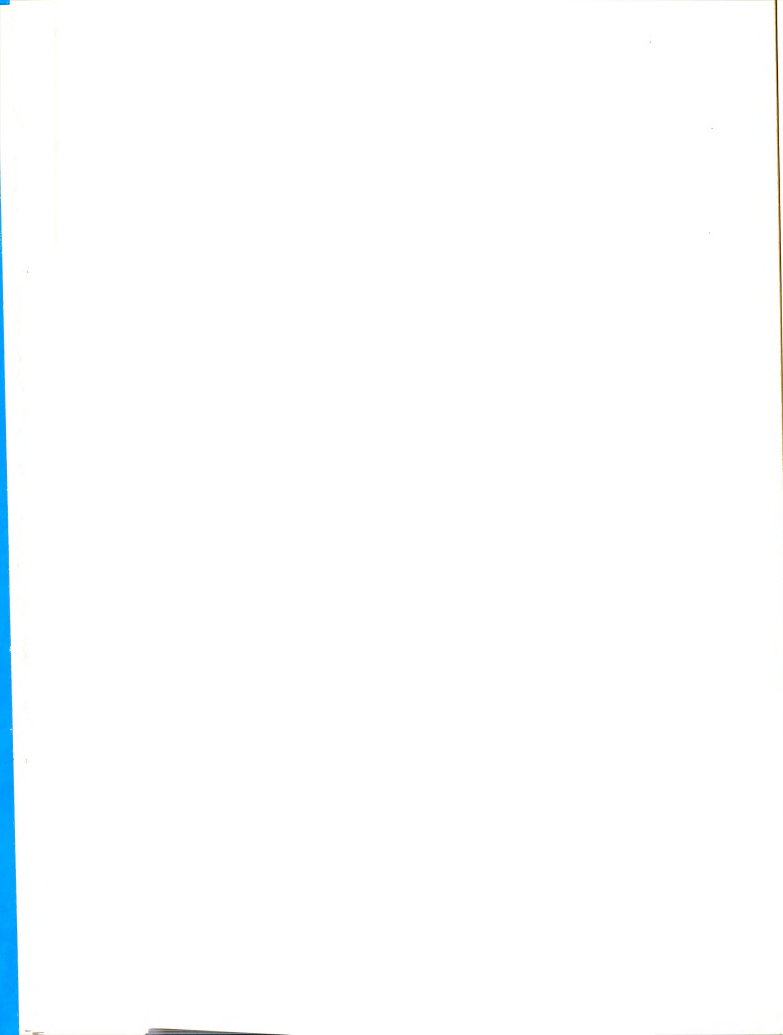
Intergroup prejudice is more distinct among groups experiencing downward mobility (sinking) than among upward mobiles. Sinkers display a tendency to have intense and outspoken attitudes towards Negroes and other minority groupings.

Occupational evaluation and satisfaction by upward mobiles of their new status is usually highly biased towards the new grouping. If the individual is not accepted by the new grouping, he tends to be highly prejudiced against the group.

Consequences of Mobility to the Individual

Individuals who are mobile experience different effects from non-mobile individuals. Influencing factors relative to consequences appear related to the individual being mobile of his own volition, in a positive direction, or forced mobility. Forced mobility tends to elicit negative reactions and effects from the individual.⁵⁰ Examples

⁵⁰ B. Stacy, "Some Psychological Consequences of Inter-generational Mobility," Human Relations, 20:8, February, 1967.



of these negative reactions are neurotic disorders, suicide, broken homes, divorces. The degree of consequences depends on the extent of mobility, amount of behavior change necessary, status inconsistencies, attitudes of the original group and the decisiveness of the break with the past.⁵¹ One of the positive consequences of mobility is a tendency to be healthier and more stable.

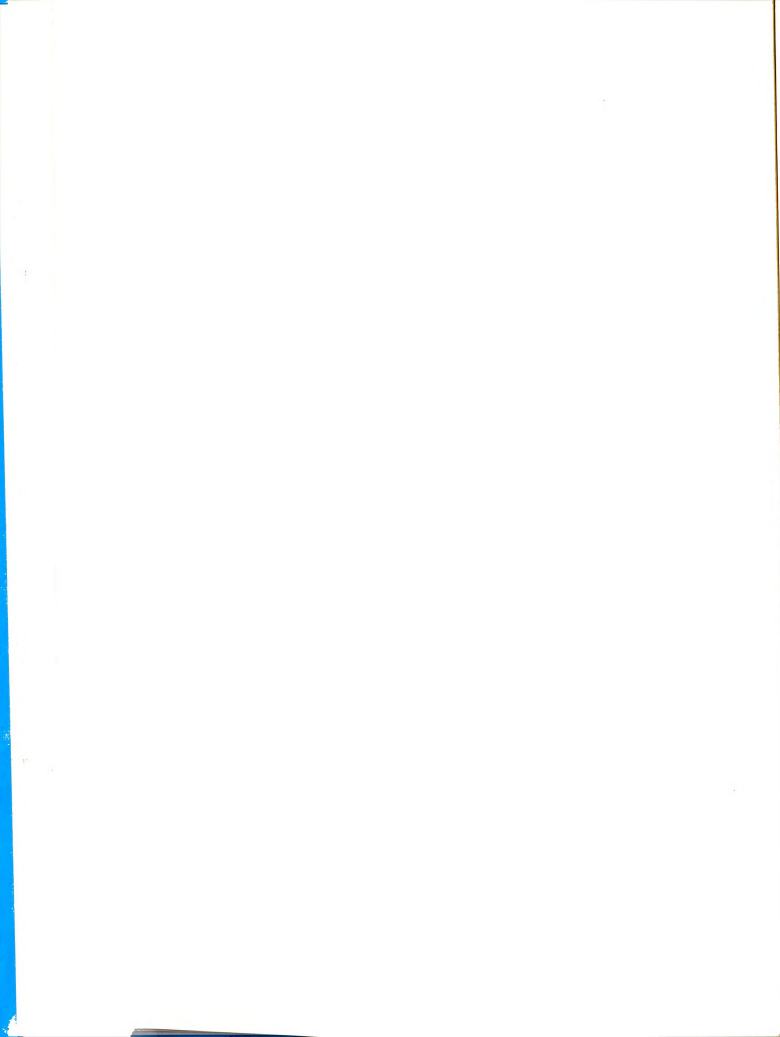
Mobility and Job Satisfaction

Feelings of satisfaction and dissatisfaction by workers towards their occupation are determined largely by the opportunities which they perceive for themselves. A study found " . . . that the relationships between occupational mobility and job satisfaction is mediated by the belief in opportunities or lack of opportunities for workers to rise in the occupational hierarchy."⁵² The degree of satisfaction which he will feel is dependent on the amount of distance which has separated him from his original social referents. The further he perceives himself from the referents, the greater will be his satisfaction. The converse of this position is that "when mobility is blocked, he will become increasingly dissatisfied with his present position."⁵³

⁵¹Ibid., p. 3.

⁵²W. H. Form and J. A. Geschwender, "Social Reference Basis of Job Satisfaction: The Case of the Manual Worker," American Sociological Review, 27:237, April, 1962.

⁵³Ibid., p. 237.



Teacher Mobility and Professional LossNEA Study of Teacher Mobility
and Loss, 1967

The National Education Association undertook a study to determine the degree of teacher turnover, separation, mobility and teacher loss in the public schools.⁵⁴ The percentage and characteristics of teachers identified in each of these categories were determined.

The sample consisted of 3,938 public-school teachers representing the national teacher situation. A return of 3,291 (86.5 per cent) of questionnaires was less than desirable for making estimates of teacher mobility and loss. The probability of teachers in subcategories of "mobility" and "loss" not returning the questionnaire could conceivably be higher than those remaining in teaching.

An estimate of teacher separation (teachers moving from an assignment in a specific school regardless of cause for leaving or destination of the teacher) was 18.9 per cent. Geographic mobility, including moves within the system, was estimated at 9.8 per cent; between systems in the same state, 3.4 per cent; and, interstate, 1.4 per cent. The rate of loss to the profession was 5.8 per cent.

⁵⁴ National Education Association, Research Division, Teacher Mobility and Loss (Study of teacher mobility and loss. Washington: National Education Research Bulletin, December, 1968), pp. 118-127.

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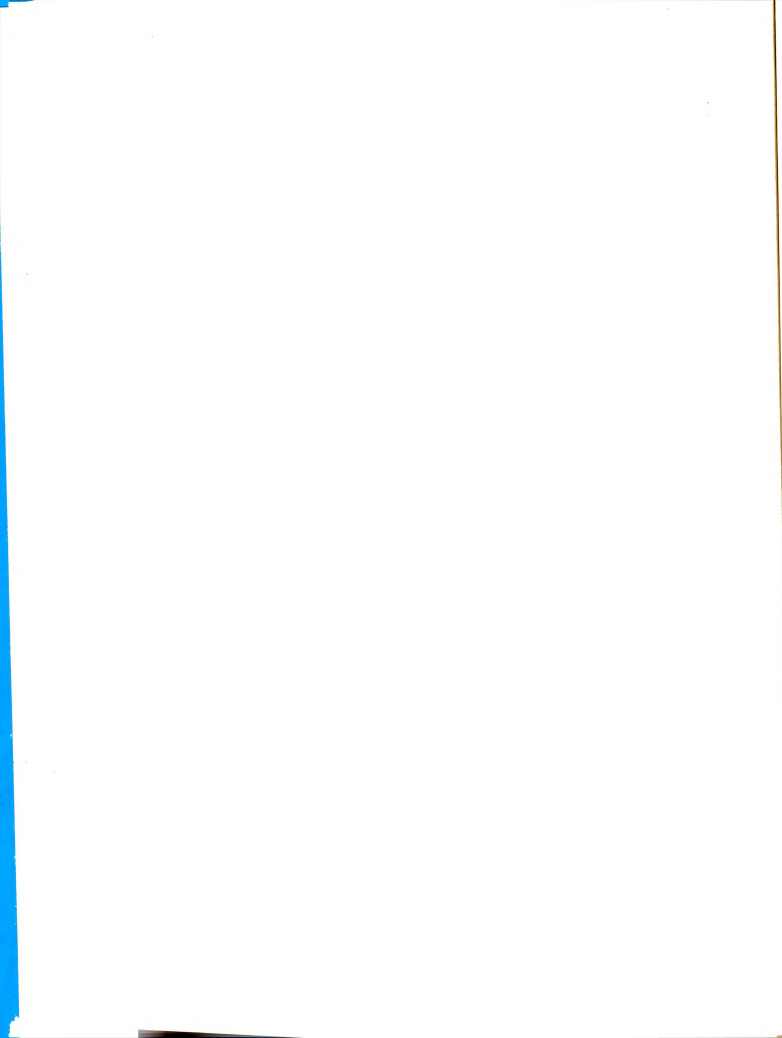
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If these figures are projected to United States Office of Education (USOE) estimates of the total number of full-time teachers (1,892,000) employed in 1968, the implication is that 185,000 (9.8 per cent) teachers will change buildings and 91,000 (4.8 per cent) will change school systems. The teacher loss to the profession will be 110,000 (5.8 per cent). This means that the total number of teachers who will move in the profession or be lost to the profession is 386,000 of the total 1,892,000 (20.4 per cent) teachers.

The reasons for leaving, as reported by 186 of 192 teachers not employed in the profession one year later, were these: (1) 30.9 per cent, leave of absence; (2) 20.4 per cent, retirement; (3) 13.1 per cent, started a family; (4) 10.5 per cent, return to school; (5) 5.8 per cent, to enter another occupation; (6) 5.8 per cent, illness; (7) 5.8 per cent, to improve economic benefits or advancement; (8) 2.6 per cent, death; and, (9) 5.2 per cent, other reasons.

Reduction of high rates of separation could result in reduced costs of recruitment and orientation of new staff. Increased continuity in the curriculum and improved staff stability may be attained. "The assumption that the rates of teacher separation and mobility are indicators of school system quality or teacher morale or satisfaction needs further investigation."⁵⁵

⁵⁵ Ibid., p. 126.



Comparative Study of Men Who
Left and Remained in Teaching

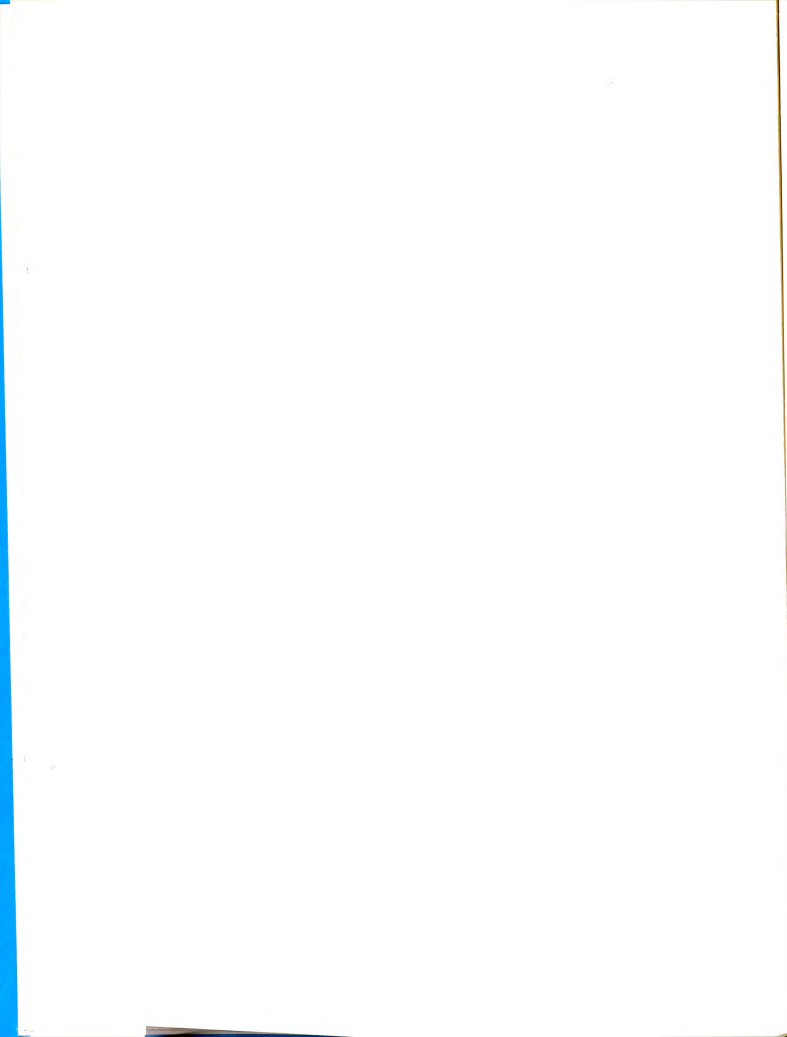
A comparative study of men who "remained" and "left" the profession was completed with men who had been in air crews during World War II.⁵⁶ The sample contained 658 men identified as teachers from a group of 17,000 servicemen. All had taken the Air Crew Aptitude Test Battery (ACATB) between 1942 and 1946.

The number of men from this sample who were employed in some phase of education was 658. Two-hundred and fifty were currently teaching in the elementary and secondary school. An additional 126 had become administrators. Eighty-two were college professors.

Teachers who had "left" totaled 200 of 658 (30.3 per cent). One hundred and seventy-two had left elementary or secondary school teaching. Twenty-eight had left college teaching.

In the study, 165 of the teachers who had left performed significantly better on the ACAT than did remaining teachers. Areas of measured performance were arithmetic reasoning, mathematics and reading comprehension. Teachers who had left, when compared as a group to active teachers,

⁵⁶Robert Thorndike and Elizabeth Hagen, Characteristics of Men Who Remained In and Left Teaching, Cooperative Research Project No. 574, (SAE8189), United States Office of Education, Department of Health, Education, and Welfare (New York: Teachers College, Columbia University, 1955), pp. 1 ff.



still were more capable on all three areas of the test instrument.

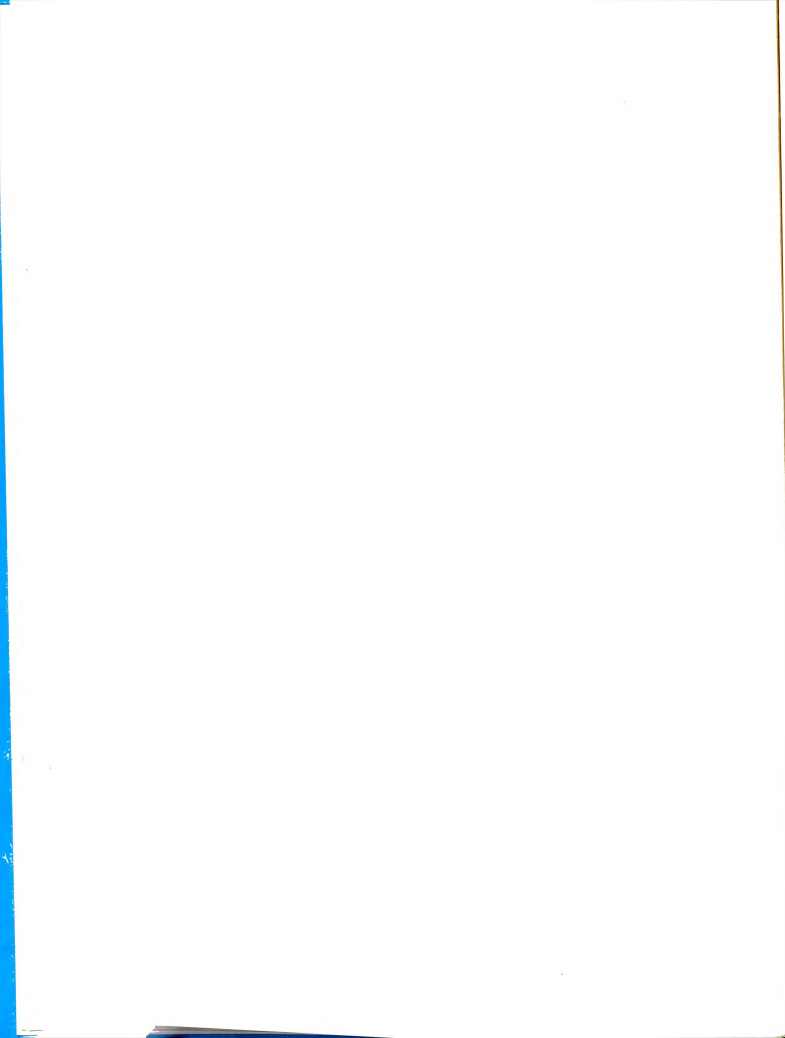
The project conclusions were that perhaps the most academically and intellectually capable group, as measured by the ACATB, dropped out of teaching; those who remained were the less intellectually able of the group. This also appeared to be true for the college group.

A listing of reasons for leaving the profession, (by rank order), were: salary too low, opportunity for a different job, no chance for promotion, too many duties other than teaching, lack of interest and discipline problems of students, didn't like to teach, wasn't a good teacher and found indoor work too confining.

Areas expressed by classroom teachers, ex-classroom teachers, professors and ex-professors as needing change in the school system were these: salary, work conditions, status, teacher education, benefits and better school personnel.

Salary was listed by 86.9 per cent of the classroom teachers who remained, while only 57.6 per cent of ex-teachers listed it as needing change. Among college teachers, salary was listed by 82.3 per cent of the group, while 53.6 per cent of ex-college teachers listed salary as needing change.

Changes in work conditions were given by 29.2 per cent of classroom teachers and only 1.7 per cent of



ex-classroom teachers. This is quite different in contrast to college teachers. Twenty-six point nine per cent of college teachers listed work conditions needing change as compared to 32.1 per cent of ex-college teachers. Work conditions were the second most frequent response to items needing change by all groups.

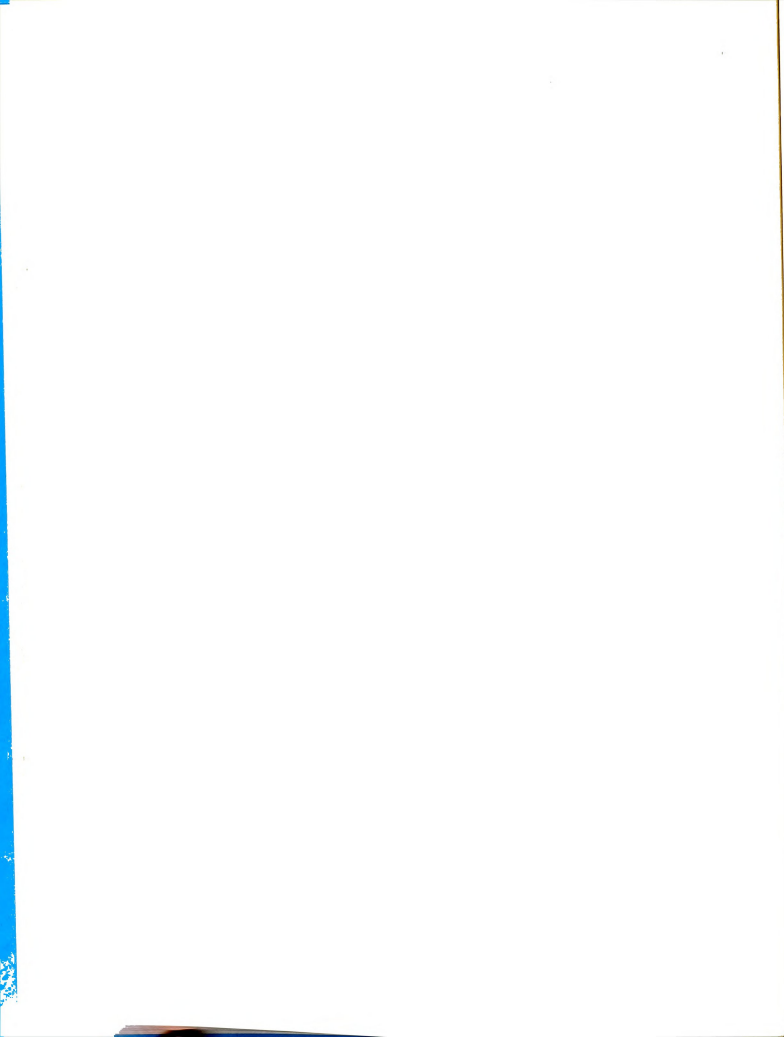
Status, teacher education and benefits were given as needing change by an average of 10 per cent of all groups. School personnel were listed by approximately 3.5 per cent of the members of all groups.

Turnover Among Beginning Teachers

A national study (USOE) of teachers having one to five years experience, 1956-1957, was made to determine percentages and new positions of teachers leaving the profession.⁵⁷ Teachers, while in the profession, were asked about their intended plans for the next year. Based on groupings of 100, eighty-eight indicated an intent to continue teaching while 12 indicated they would leave the profession.

A follow-up found that of every one hundred, fourteen actually had left the profession. Reasons for leaving were these: seven, to become homemakers; two, military service; three, other occupations; and, two, other reasons.

⁵⁷Scott Hunter, "Turnover Among Beginning Teachers: A Follow-Up," School Life, 44:22-24, April, 1962.



The statistic of greatest concern was that ". . . the percentage of those planning to leave teaching within five years was not substantially reduced in the second year, even after the fourteen per cent who taught only one year had departed"58

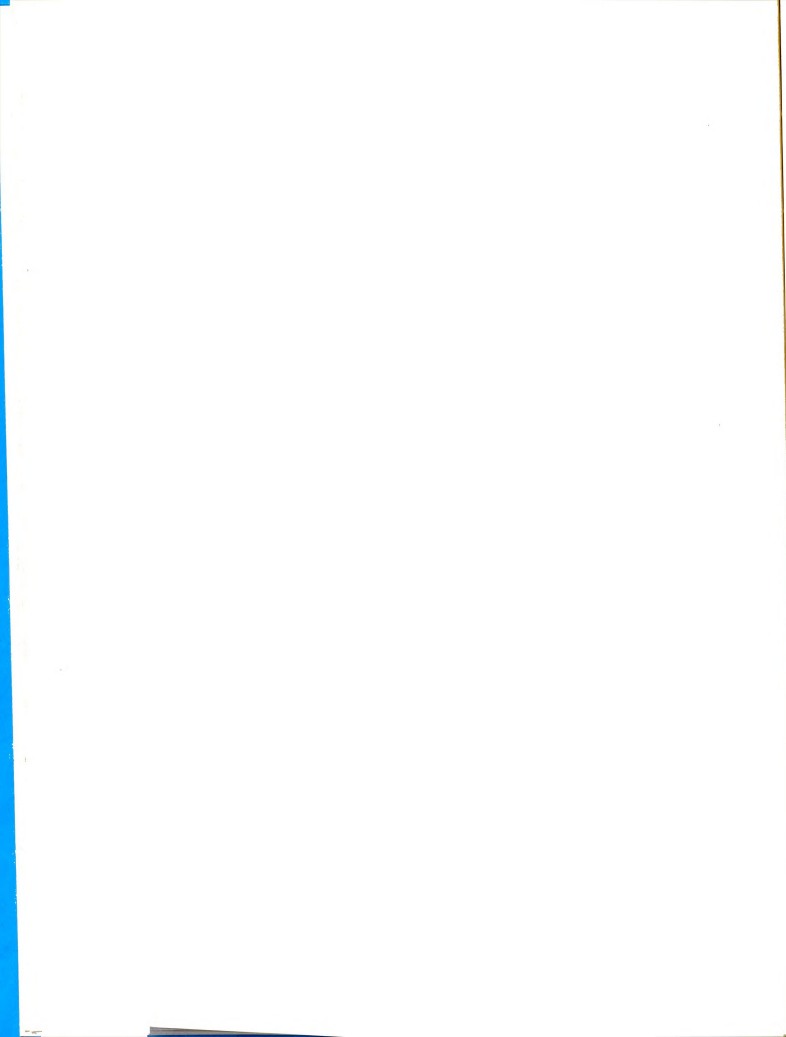
Occupation selection would appear to begin during the time the student is in college and continue into the first year on-the-job. The high turnover among first-year teachers represents a substantial costs to school systems.

Turnover of Teachers in Ghetto Schools

Studies of general mobility of teachers tend to disregard the "why" of the dynamics of turnover. Examination of reasons for teacher turnover included a study of sixteen elementary schools.⁵⁹ Three hundred and seventy-three teachers from these schools in socially deprived neighborhoods of a metropolitan California city were surveyed. Response to the test instrument was made by 294 of 373 (78.8 per cent) teachers. Subcategories were identified in each of the four categories of the study.

⁵⁸ Ibid., p. 24.

⁵⁹ Patrick J. Groff, "Teaching the CD Child: Teacher Turnover," California Journal of Educational Research, 18:91-95, March, 1967.



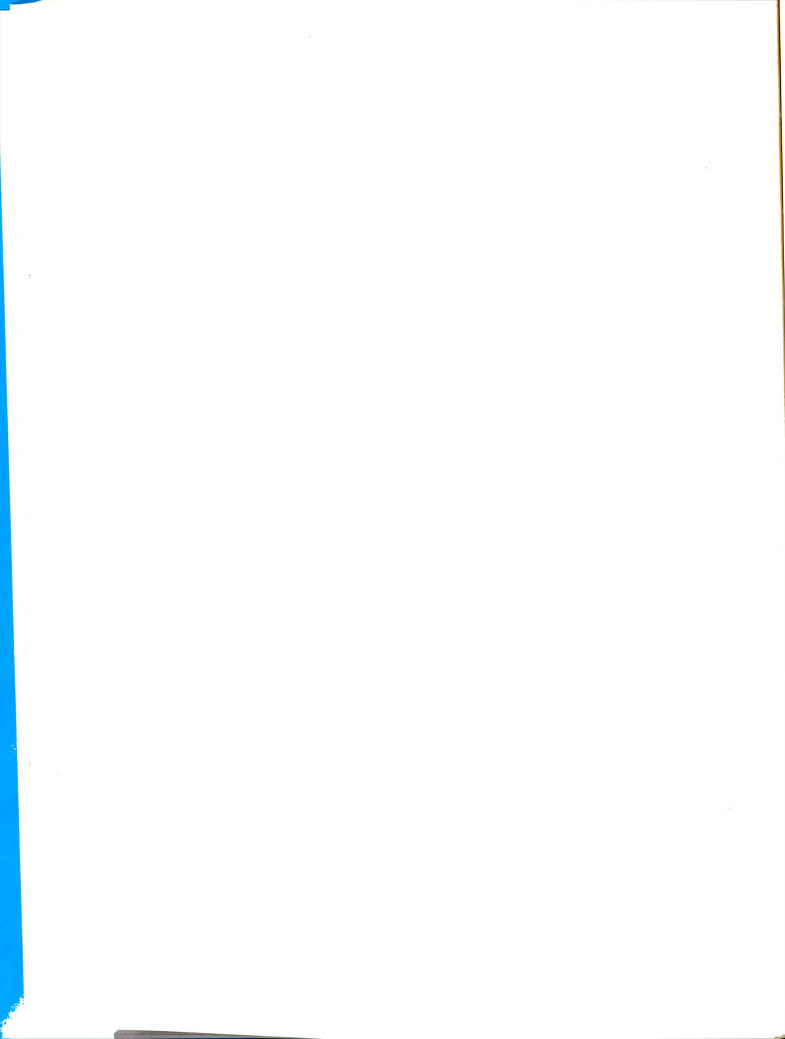
Teacher inadequacy was expressed 94 of the 424 times (24.4 per cent). The most frequent responses were in the category of misguided attitudes and expectations of children. Lack of understanding and acceptance, unsympathetic attitudes and value conflicts were given as secondary reasons. Only two respondents indicated emotional over-involvement with culturally deprived children.

School structure was mentioned 158 of 424 times (37.2 per cent). The most frequent reason for moving was lack of help or recognition from the administrator. Class size being too large was the second most frequent reason given in this category. Additional responses included these: inflexible standards and norms, poor placement of teachers and status due to placement.

The personality of the child was mentioned 172 of 424 times (40.2 per cent). Fifty per cent of all reasons given in this category were problems of discipline and teacher dissatisfaction. Teachers gave personal frustration because of limited observable growth by students as a reason for leaving.

Socio-economic factors as a causative reason for teachers leaving was hypothesized.⁶⁰ Teacher background were matched with the socio-economic background of the

⁶⁰D. White, "Soci-Economic Factors and the Mobility of Beginning Elementary Teachers," Teacher College Journal, 37:177, March, 1966.



school clientele. The sample used 143 elementary teachers from thirteen school systems in Indiana. Teachers had either one or two years of experience and had remained in the same school building during those years.

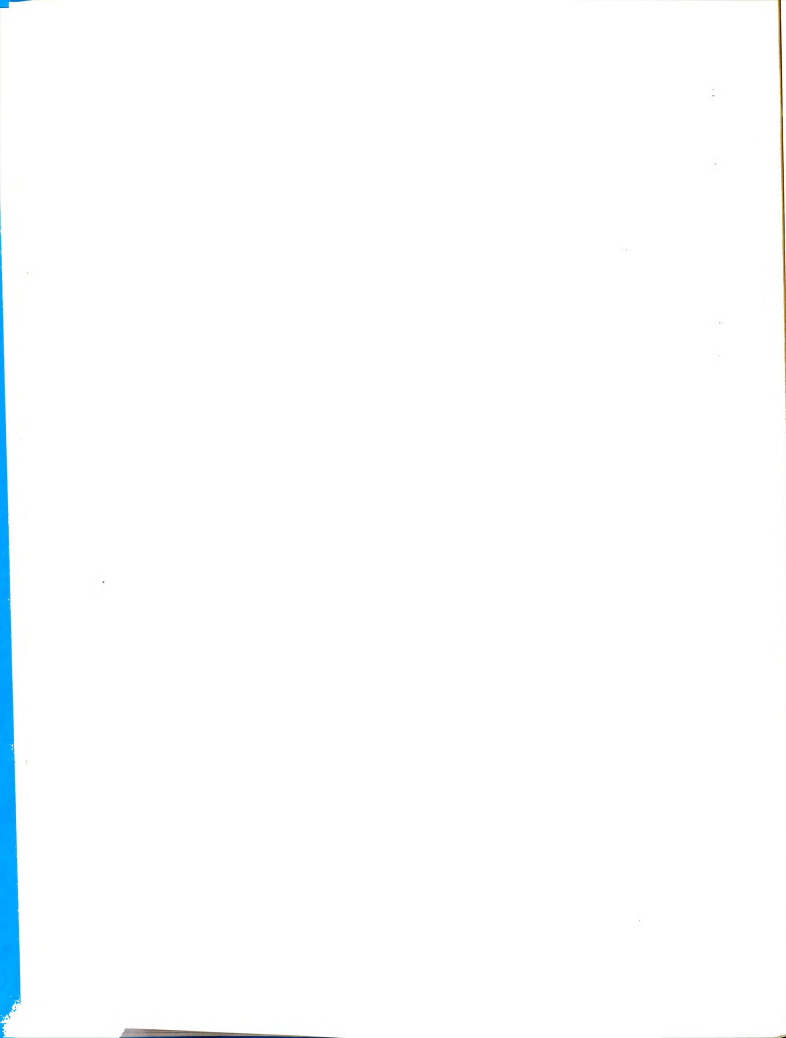
A follow-up, after assessment of socio-economic level of teacher and school, was made at the end of the school year. Thirty-eight of the 143 (27 per cent) teachers that were surveyed had left. It was concluded that " . . . teacher leaving is predominately related to socio-economic background of the students in the school."⁶¹ This was thought to be especially true in large metropolitan systems.

Vocational Agricultural Studies of Mobility

Vocational agriculture graduates of Michigan State University from the years 1952, 56, 60 and 1961 were surveyed in 1965 to determine those teachers who were not teaching.⁶² The sample included 206 graduates of which 129 teachers (62 per cent) began teaching immediately. Forty-seven of the 129 (36 per cent) were still teaching at the time of the study. Eleven (9 per cent) could not be located.

⁶¹Ibid., p. 178.

⁶²J. E. Thompson, "Look at Some Who Quit Teaching." Agriculture Education Magazine, 39:156-8, January, 1967. The article is a synopsis of a dissertation done for the Ph. D. degree at MSU, 1966.

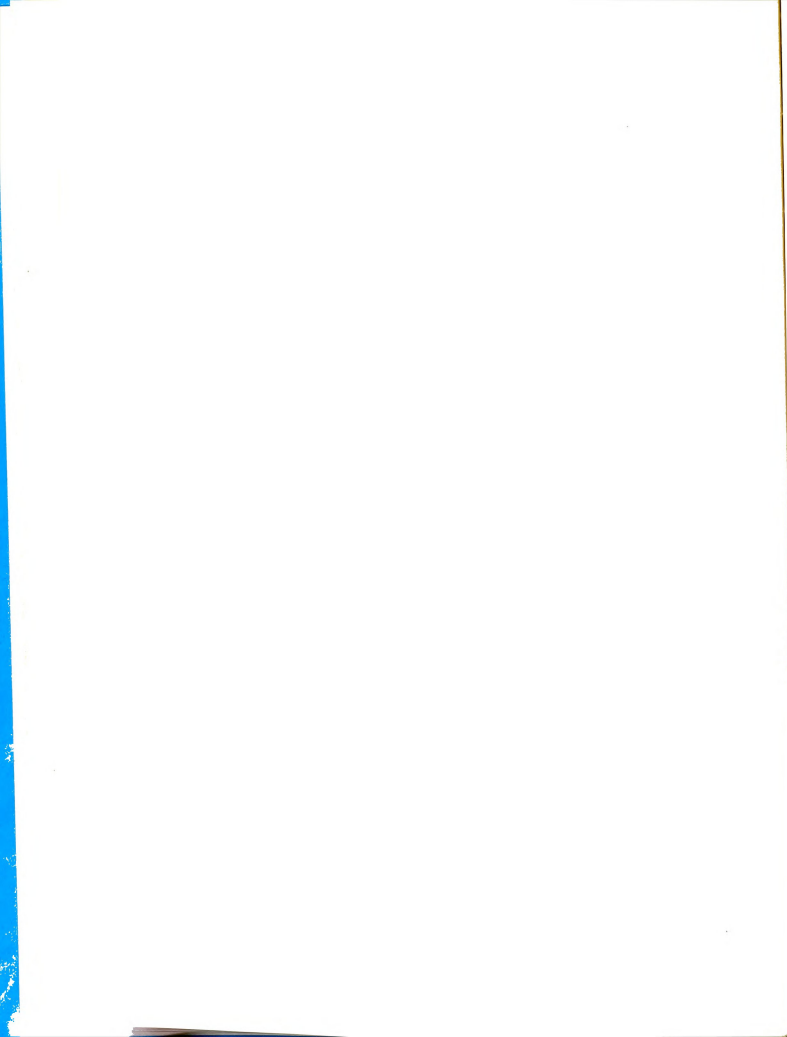


A questionnaire was sent to the seventy-one teachers who had entered the profession and left to determine bases for their decision.

Conclusions were that former vocational agriculture teachers had held three or less positions in the profession. Upon leaving, they were not attracted by a specific occupation. Categories of occupations selected were administration, business, professional agriculture jobs and non-vocational agriculture classroom teaching. The former teacher had held one to two jobs after leaving the classroom. He was born of a blue-collar rural family whose father had a high school or less education. The decision to teach was made after entering college. The value orientation of the former teacher was toward people and toward a high self-expression. He had received satisfactory reinforcement of these values in teaching.

A study of Iowa State University vocational agriculture graduates from January, 1940, to July, 1964, was made to determine reasons for entering and leaving the profession.⁶³ The sample included 823 agriculture education graduates, 70.8 per cent of all graduates of the department. Of this group, 355 (43.2 per cent) had never taught and only 11.4 per cent had taught more than five years.

⁶³L. H. Froehlich and C. E. Bundy, "Why Qualified Vocational Agriculture Teachers Don't Teach," Agriculture Education Magazine, 39:134-135, December, 1966.



Reasons given for entering the profession were these:

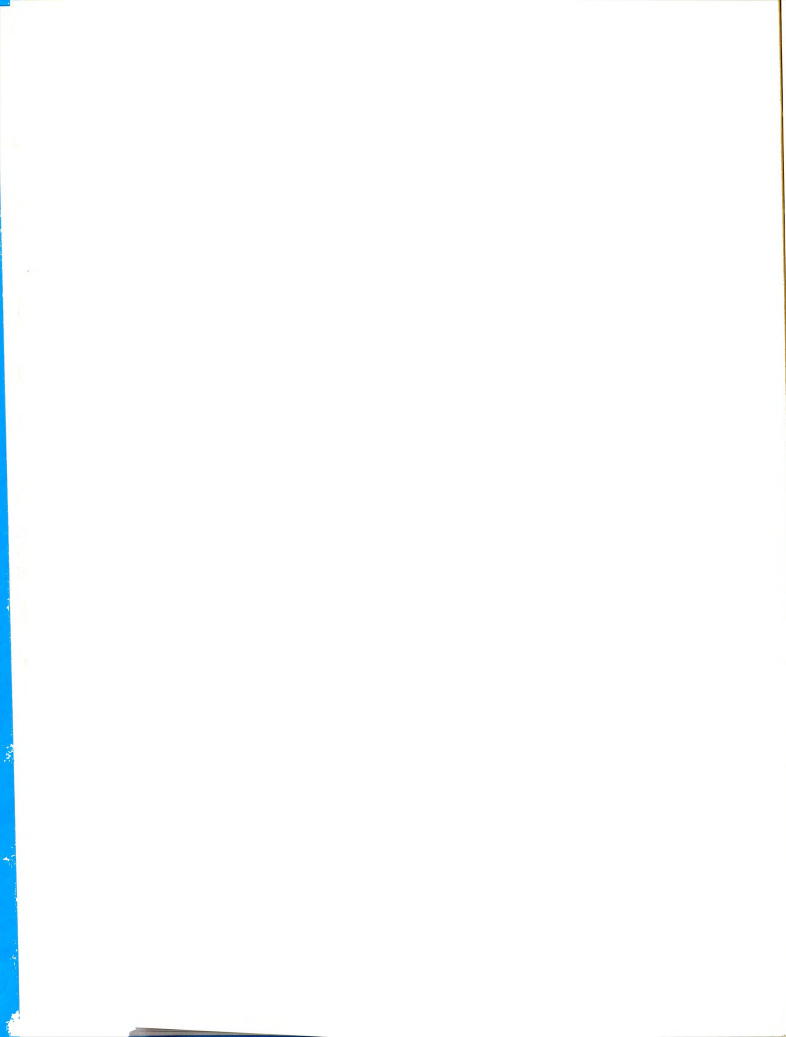
- (1) the individual felt it was the occupation for which he was best trained, (2) he enjoyed working with people, and (3) the salary was desirable.

Teachers leaving after one to five years gave the following reasons for their decision: lack of opportunity for advancement, salary, too many evening responsibilities, long hours and too many state reports. The individual leaving after five or more years based his decision on the same criteria as the earlier group. Additional reasons for leaving after five or more years experience were community attitudes towards vocational agriculture education and the lack of opportunities for specialization.

Background Characteristics of
Special Education Teachers and
Their Decisions to Leave

A study of special education teachers was done to discover factors influencing them to leave the profession.⁶⁴ Background characteristics of former teachers were examined as a possible criteria for leaving. Seventy-nine special education teachers from thirteen western states, indicating their intent to leave after the 1962-63 school year, were studied. They were compared to sixty-five teachers who were changing positions in special education the same year.

⁶⁴Harold Heller, "The Relationship Between Certain Background Characteristics of Special Education Teachers and Their Decisions to Leave Special Education." Teacher College Journal, 37:187-191, March, 1966.



Data was obtained by a questionnaire. Analysis was by Chi-Square values for the two groups. Significance was at the .05 level.

Results were that those who leave have had a limited amount of experience with exceptional children. Male teachers leaving had significantly fewer number of special education and education courses. Placement of teachers into positions about which they lack realistic and vital knowledge of the children with whom they would be working appeared to be a causative factor in mobility.

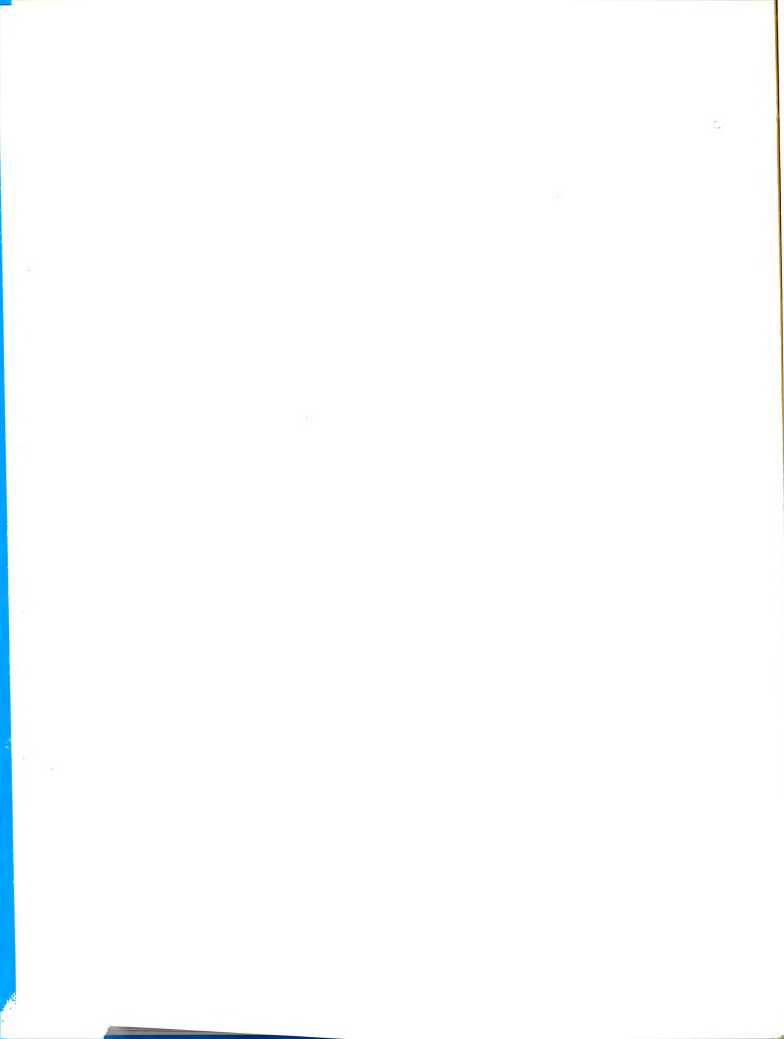
Reasons for leaving were listed (by rank order) as: (1) a lack of adequate administration and supervision, (2) undesirable working conditions, (3) lack of adequate college preparation for teaching special classes, and (4) non-acceptance by fellow colleagues in education. College preparation was criticized for being, " . . . highly theoretical with little practical application of theory in practicum situations."⁶⁵

Industrial Education Follow-Up Studies

A follow-up study of seventy-three graduates of the industrial arts teacher preparation program was done to determine their present occupations.⁶⁶ Forty-five of the

⁶⁵Ibid., p. 190.

⁶⁶Mike McGinley, "A Follow-up Study of Industrial Arts Graduates from Northwestern State College, Alva, Oklahoma" (Unpublished Master's thesis, Kansas State College of Pittsburg, Pittsburg, Kansas, 1964), p. 1 ff.



seventy-three responded (68.1 per cent) to the questionnaire.

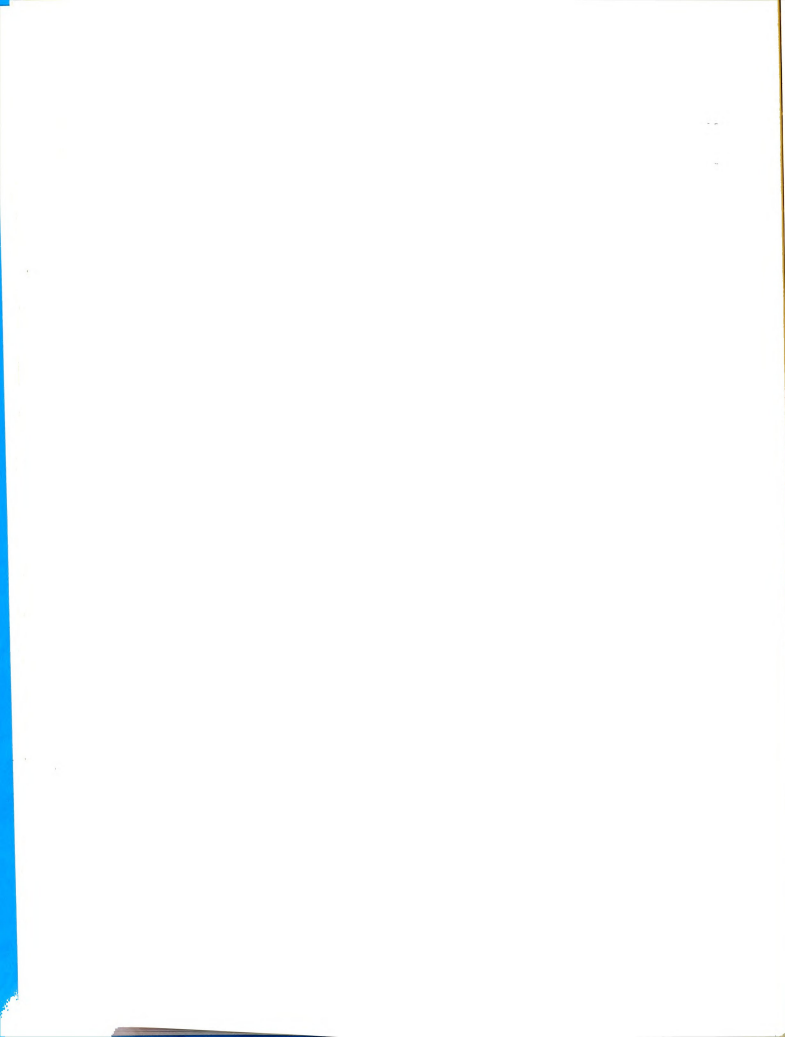
Seventy-five per cent of the respondents were employed in some form of work dealing with education. Twenty-five per cent were no longer associated with education. Thirty-eight per cent of the full-time teachers were also employed part-time in another job. Forty per cent of the respondents were teaching in some phase of industrial arts.

Reasons given for not entering or remaining in the teaching profession were: (1) their interests did not lie in teaching and (2) there was not enough money in teaching.

A follow-up study of graduates of industrial arts programs in applied arts and sciences was done to determine present employment.⁶⁷ Eighty-nine graduates (1948-1962), of whom 68 returned a questionnaire (76.4 per cent), were surveyed.

Graduates were listed as belonging to these categories of occupations: professionals, 27.9 per cent; managerial, 26.5 per cent; executive, 8.8 per cent; skilled labor, 23.5 per cent; clerical, 8.8 per cent and self-employed, 4.4 per cent.

⁶⁷Danny L. Crump, "A Follow-Up Study of Graduates of Northwestern State College With An Industrial Arts Major in Applied Arts and Sciences" (Unpublished Master's thesis, Northwestern State College, Natchitoches, Louisiana, 1964), pp. 1 ff.



The study failed to differentiate between graduates of industrial arts and technology programs. Results were apparently inconclusive for industrial arts graduates in teacher education programs.

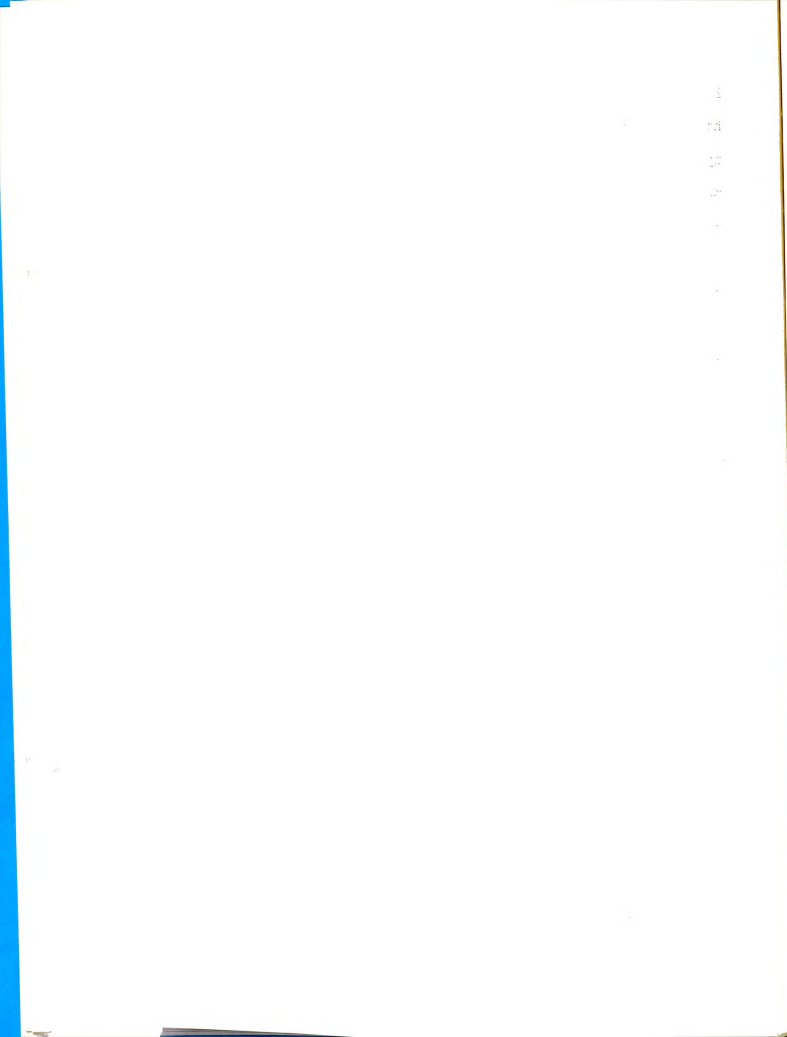
The percentage return for either of these two studies tended to weaken arguments for use of the findings.

Summation

Mobility is the transition of an individual or social object between or within social stratum. The directions of mobility commonly identified are horizontal and vertical. Vertical mobility, especially upward, receives considerable support in our society. Support for the upwardly mobile individuals and channels for their progression are representative of the value structure of the society.

The degree of openness for mobile individuals in society is an area of debate by sociological researchers. The desirability of openness is seemingly unquestioned. A closed society frustrates individuals desiring to achieve a new social stratum. Western industrializing countries would appear to offer greater opportunity for upward mobility. Minority groups within this society tend not to have equal opportunity with equal ability for upward mobility.

Education is one of a number of social institutions which offers individuals a channel for upward mobility.

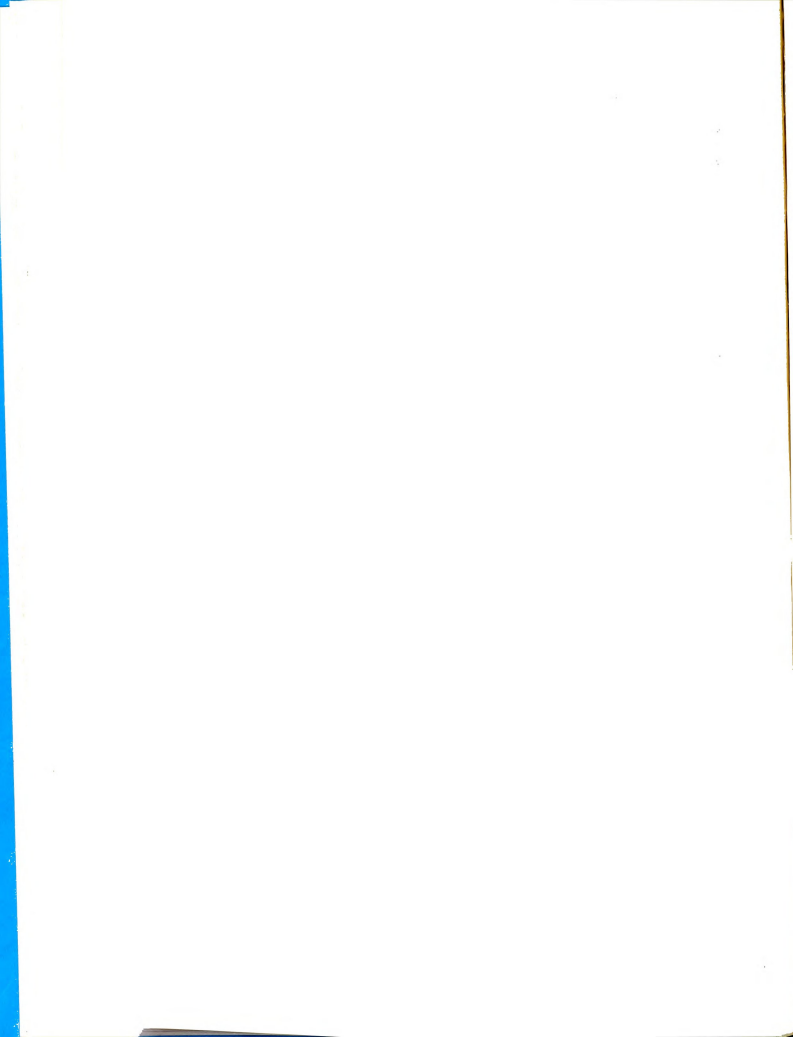


Evidence to support the degree of success which individuals have in use of this channel tends to be lacking. It would appear that individuals coming from a family having a medium or high level of education benefit more readily from education than do persons from a low family education level.

The function of education in society may be to assist and regulate persons into those positions for which they best qualify. If this is the function, then persons of differing economic and ethnic backgrounds must be assured equal opportunity to participate. Aspects of the present school structure do attempt to keep actors in the upward mobile race.

Motivation of the individuals to be upwardly mobile, according to Veblen, is an attempt to improve one's self-esteem. The self-esteem which one feels tends to be a function of the feelings one senses from associates. Occupations are a strong indicator of the social status and the level of esteem which one feels.

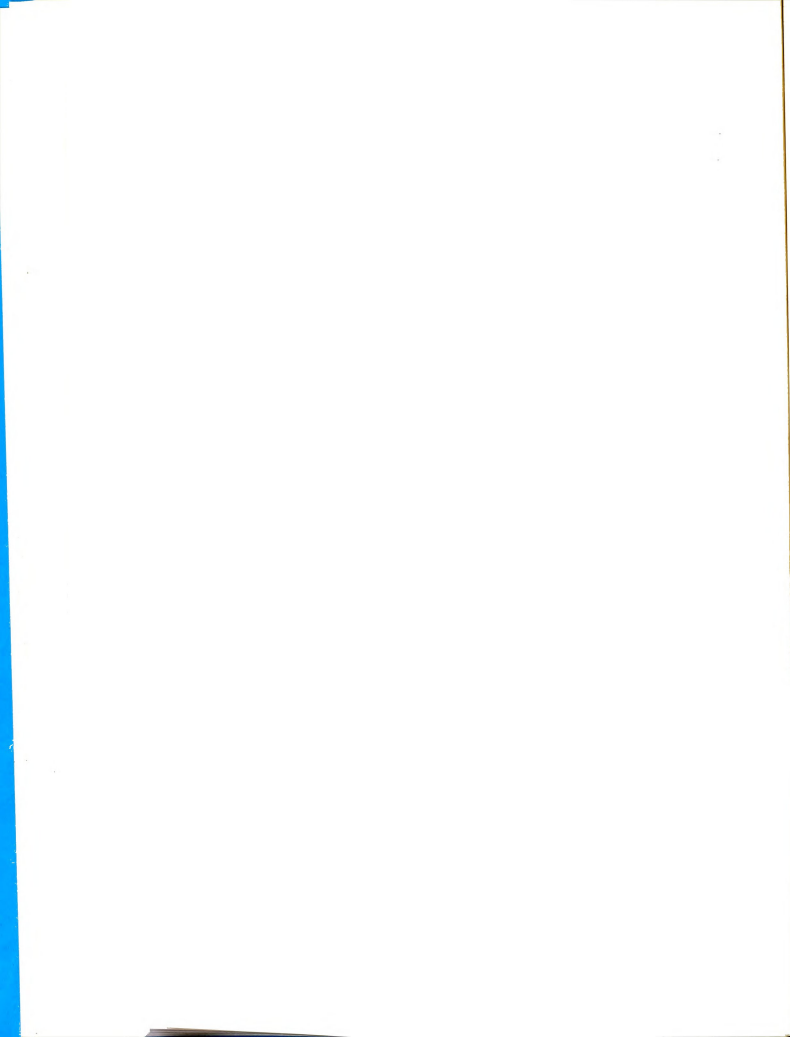
Satisfaction would appear to decrease the propensity for mobility. Both job and individual satisfaction depend on the perceived opportunities for class mobility held by the individual. Those individuals forced to be mobile, especially sinkers, tend to suffer greater mental and physical problems. Persons mobile by choice tend to be healthier in both aspects. Increased satisfaction and increased self-esteem would be strong factors in the motivation of individuals to be mobile.



Teacher mobility and teacher loss to the profession appears to be higher than some members of the profession would desire. Consequences of high mobility to the system are measured in cost of recruitment, stability of the structure and coherency of the curriculum. Consequences of mobility to the individual, either leaving the profession or moving within the profession, are not well known. Reasons for mobility of teachers have been researched in some subject areas.

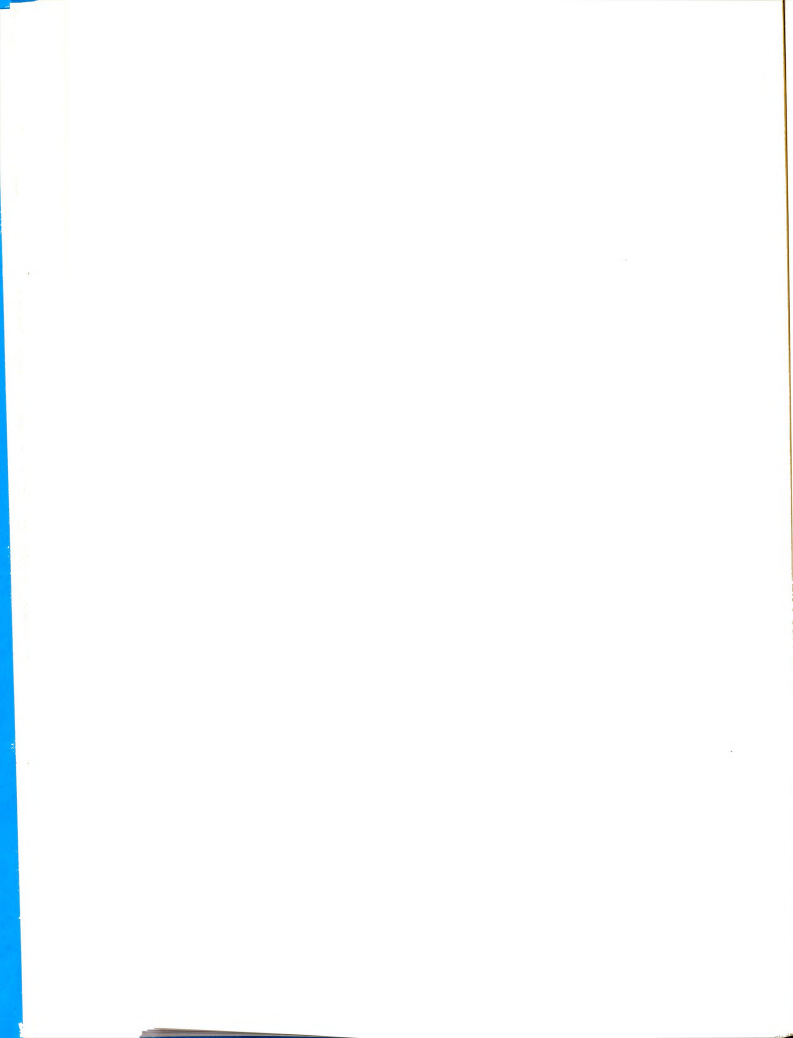
Agriculture and special education are subject areas in which members of the profession have been concerned and have done some preliminary investigation. In these areas, the teacher loss to the profession would appear to be higher than national norms. The reasons for teachers leaving the profession in these areas, aside from salary and general dissatisfaction, has not been well substantiated. Industrial educators are only recently beginning to examine the extent and reason for teacher loss and turnover in the subject area. Supply and demand would tend to be the impetus for these studies.

National studies on teacher mobility and loss indicate 9.8 per cent of all teachers will change buildings, 4.4 per cent will change school systems and 5.8 per cent will leave the profession. This means that of the total projected number of teachers for 1968 (1,892,000), 386,000 will move or be lost to the profession. This represents 20.4 per cent of all teachers in the country.



Reasons for mobility tend to fall into categories of salary, administration, prestige, socio-economic background and opportunity for advancement. Ghetto teachers indicated their lack of understanding of the culturally deprived child as a reason for leaving the school or the profession.

The desirability of mobility of teachers is difficult to ascertain. Total growth of the individual may not be accomplished within a particular structure. The structure could derive benefit from mobile members. Equating cost, stability of curriculum and school stability as detriments of mobility is open to question.



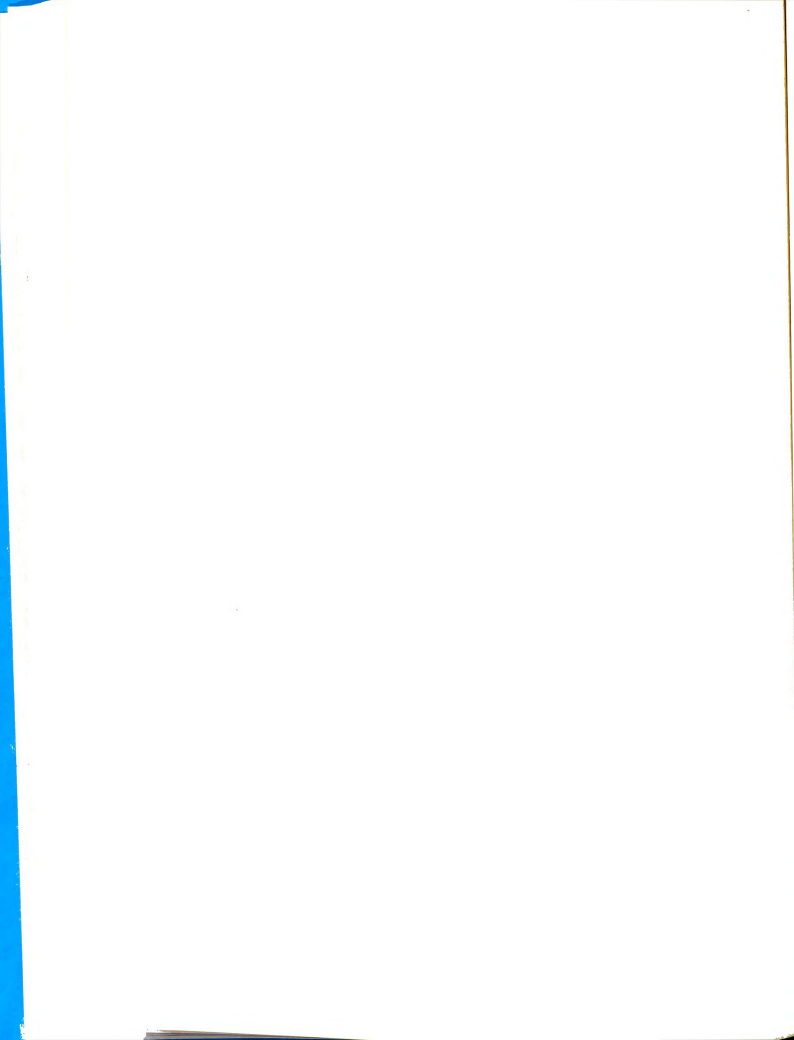
CHAPTER III

RESEARCH FRAMEWORK, SAMPLE SELECTION, HYPOTHESES AND STATISTICAL MODEL USED IN THE STUDY

The design of the study, the hypotheses and statistical model are presented in Chapter III. Discussion of each major unit includes a consideration of the relationship of each aspect of the unit to the total study.

The design of the study is presented by means of a PERT chart.¹ The technique of sample identification includes selection and stratification of the school systems used in the study. A proportionate sample of industrial education teachers was drawn from each of the strata. Results of a follow-up questionnaire to determine out-mobiles and the format for interviewing out-mobiles are presented.

¹Ralph DeSola, Abbreviations Dictionary, New Revised and Enlarged International Edition (New York: Meredith Publishing Company, Inc., 1967), p. 205. The letters PERT were abstracted from the terms program evaluation review technique. Common usage has made it applicable to diagrams depicting research programs.



Hypotheses to substantiate the theory that attitudes of out-mobiles differ from active teachers are introduced. Each hypothesis for the eight subcategories of the test instrument appears in null and alternative form.

A multivariate analysis of variance model was used to analyze the data. Application was made to the main effect, out-mobility and active teachers. The six variables which could interact with main effect were examined with the same statistical model.

Design of the Study

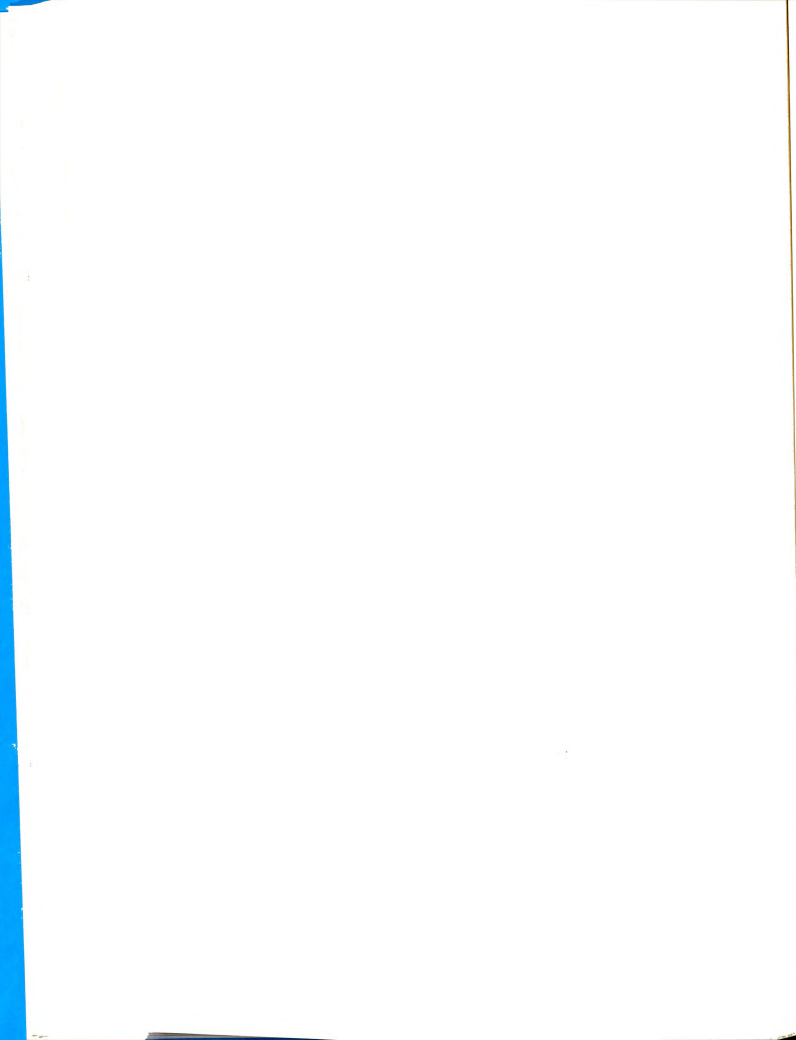
Overview of the Study

A PERT chart (Figure 3.1) of the study includes the four operational-steps. These were: sample selection, assessment of teacher attitude by the use of a test instrument, a follow-up survey to determine out-mobiles and interviews of out-mobiles, and the final report.

Sample Selection

The Sample

The survey design employed a multistage stratified random method for identification of active industrial education teachers. School systems were assigned to one of four strata, using student enrollment as the criteria. These levels were: Stratum I, 2,000 students and less; Stratum II, 2,001 through 10,000; Stratum III, 10,001 through 25,000; and Stratum IV, 25,001 and more.



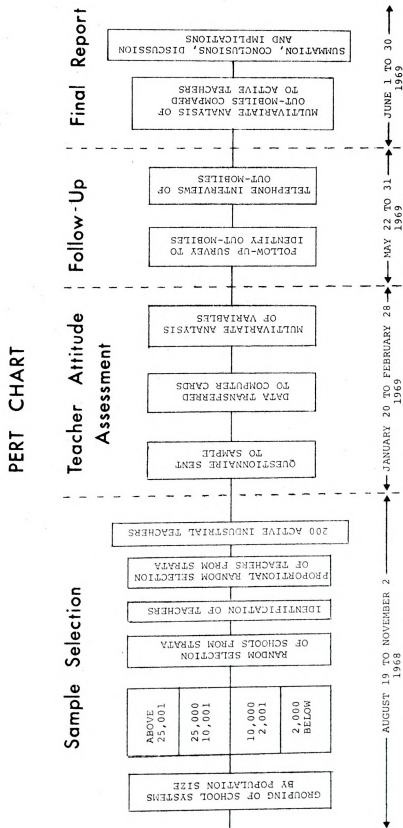
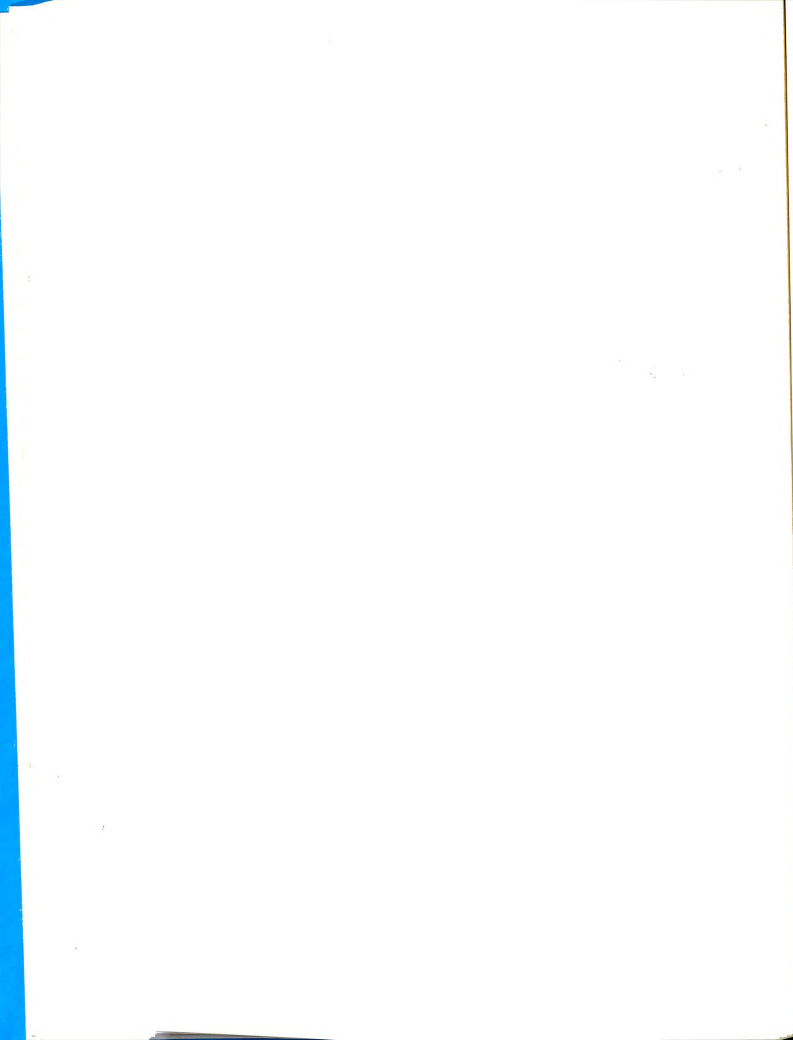


Figure 3.1.--Study Overview.



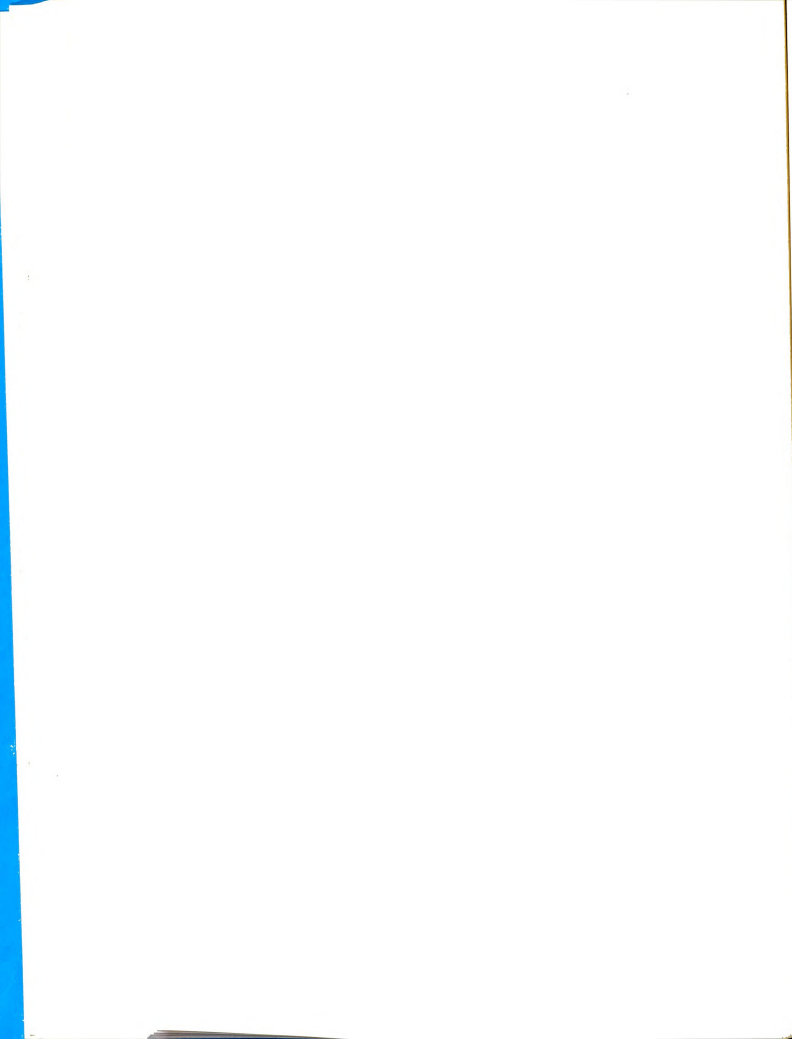
Categorization of the 554 school systems in the state of Michigan (Table 3.1) placed 334 school systems in

TABLE 3.1.--Strata categorization of school systems based on enrollment.

Number and Percentage Drawn	Strata Categorization				
	I	II	III	IV	Total
Number of schools per stratum	334	190	29	1	554
Number of schools randomly drawn	48	24	6	1	79
Percentage drawn from the total	14.4	12.6	20.7	100.0	14.3

Stratum I; 190, in Stratum II; 29, in Stratum III; and, 1, in Stratum IV.² The number and percentage of school systems drawn from each stratum, listed I through IV, was 48 of 334 (14.4 per cent), 24 of 190 (12.6 per cent), 6 of 29 (20.7 per cent) and 1 of 1 (100.0 per cent). The cumulative number of school systems drawn for all strata was 79 of 554 (14.3 per cent).

²Michigan Education Association, Michigan Education Directory and Buyer's Guide (A Listing of All Michigan Public School Systems by Alphabetical Order for 1966-1967 School Year. Lansing: Michigan Education Association, 1966). This document was used to obtain a listing of Michigan school systems and student enrollment in the system. The superintendent is given for the system.



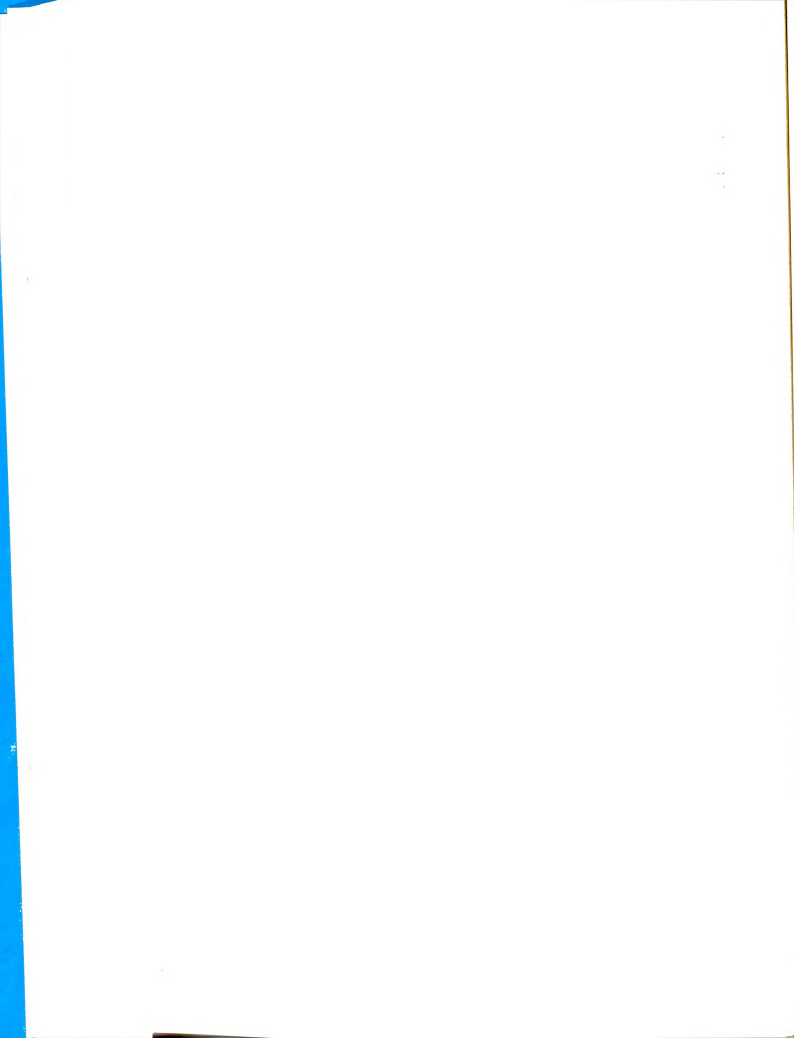
Superintendents of selected schools were sent a letter (Appendix A.1) requesting a listing of all active industrial education teachers in the system. Follow-up requests (Appendix A.2) were sent on September 13 and September 20, 1968.

The number of superintendents who responded, the number contacted and percentage of return (Table 3.2), listed I through IV, was 41 of 48 (85.4 per cent), 20 of 24 (83.3 per cent), 6 of 6 (100 per cent) and 1 of 1 (100 per cent). The total number of returns was 68 of 79 (86.1 per cent).

TABLE 3.2.--Superintendents contacted for listing of active industrial education teachers.

Number and Percentage Contacted	Strata Categorization				
	I	II	III	IV	Total
Number of Superintendents	48	24	6	1	79
Number of Respondents	41	20	6	1	68
Percentage of responses	85.4	83.3	100	100	86.1

A proportional number of teachers, based on the projected total number of teachers per stratum, was drawn for each stratum. The projected total number of active teachers per stratum was calculated.



The method of calculation was:

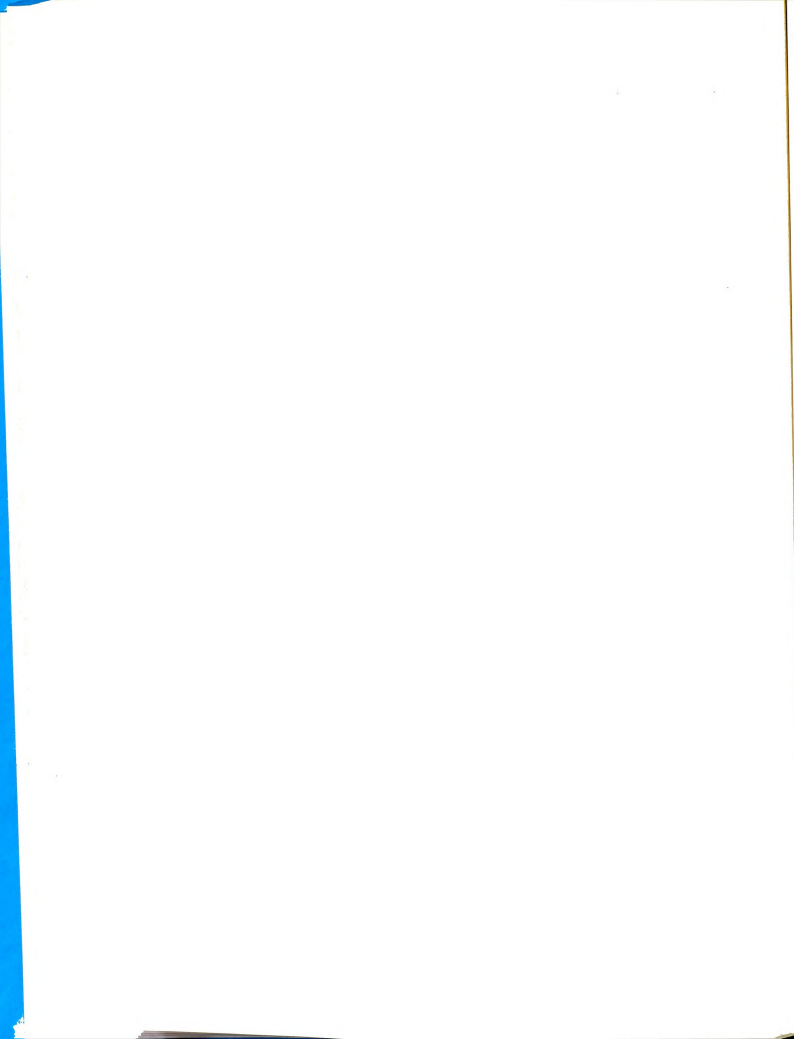
$$\begin{array}{ccccc}
 \text{(step 1)} & & \text{(step 2)} & & \text{(step 3)} \\
 \text{Total Number of} & & \text{Number of Schools} & & \text{Total Number} \\
 \text{Teachers Listed} & & \text{From Which Lists} & & \text{of Schools} \\
 \text{by Superintendents} & \div & \text{Were Obtained Per} & \times & \text{Per Stratum} \\
 \text{For Stratum} & & \text{Stratum} & & \\
 & & & & \\
 & & \text{(results)} & & \\
 = & \text{Projected Number of Teachers} & & & \\
 & \text{Per Stratum} & & &
 \end{array}$$

The average number of teachers per school (Av.N.T./S.), per stratum, calculated by steps 1 and 2, (Table 3.3) listed I through IV, was 2.33, 4.44, 22.83 and 454. The Av. N.T./S. multiplied by the total number of schools per stratum, calculated by steps 1 through 3, resulted in the projected number of teachers per stratum. The projected number of teachers per stratum (Table 3.3) listed, I through IV,

TABLE 3.3.--Projected number of teachers per stratum

School Systems and Av.N.T./S. Project- ed Teachers	Strata Categorization				Total
	I	II	III	IV	
Number of Schools Per Stratum	334	190	29	1	554
Av. N.T./S.*	2.33	4.44	22.83	454	
Projected Number** of Teachers	777	844	662	454	2737

Legend: *Average number of teachers per school (Av.N.T./s.) was calculated by the total number of teachers listed by the superintendent per stratum divided by the number of schools from which list were obtained per stratum. **The projected number of teachers was calculated by the Av.N.T./S times the total number of schools.



were 777, 844, 662 and 454. The total projected number of teachers from all strata was 2737.³

The proportional working sample (Table 3.4), based on

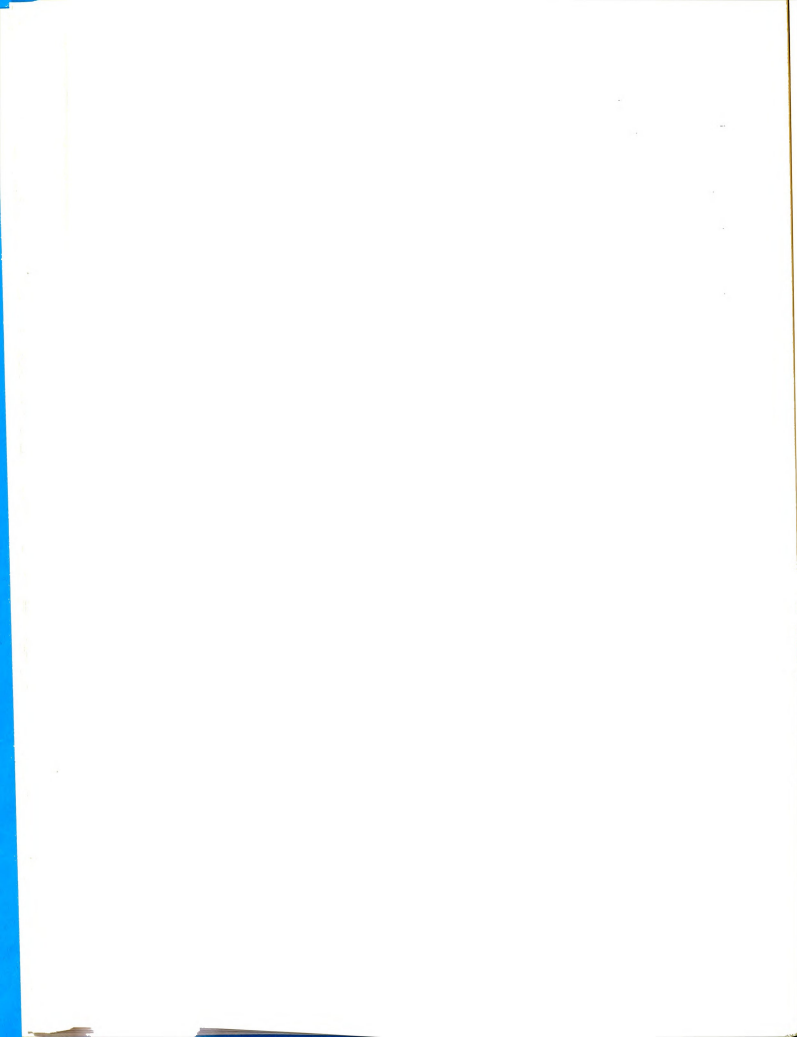
TABLE 3.4.--Proportional number of teachers drawn from each stratum for the working sample.

P.N.D. based on Projected Total Active Teachers	Strata Categorization				
	I	II	III	IV	Total
Projected Number of Teachers	777	844	622	454	2737
Cumulative List of Active Teachers	93	80	137	454	764
P.N.D.*	57	62	48	33	200**
Percentage of Active Teachers Drawn from Superintendents' List	61.2	77.5	39.6	7.3	26.1
Percentage Drawn of Total Projected Number of Teachers	7.3	7.3	7.3	7.3	7.3

Legend: *P.N.D. is the proportional number of active teachers drawn from the list of teachers given by the superintendents. Calculation was done by a ratio of the proportional number drawn over the desired working sample (200 teachers) equals the projected number of teachers per stratum over the total projected number of teachers for all strata.

**The working sample of 200 active teachers was compiled from the four strata.

³Michigan Department of Education, Professional Personnel in Michigan Public Schools, Status Report 1967-1968 (Book Three, Assignment Patterns. Lansing, Michigan Department of Education, 1969), p. 54. The total number of industrial education teachers in a required superintendent report to the Michigan Board of Education was 2,842. This figure also includes farm shop teachers not normally identified with industrial education.



projected number of teachers per stratum, was drawn from the list of active industrial education teachers obtained from the superintendents. The number of active teachers in this list, per stratum I through IV, is 93, 80, 137 and 454. The total number for all strata is 764.

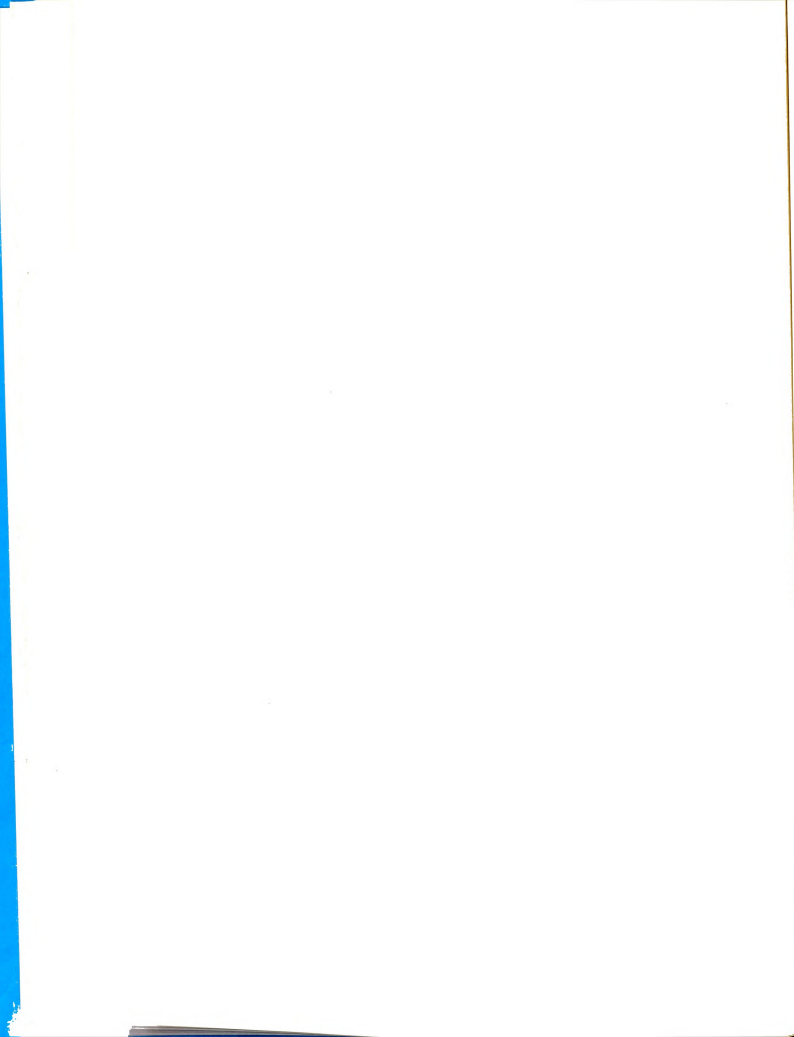
The proportional number drawn (P.N.D.) from each stratum was calculated by:

$$\frac{\text{Proportional Number Drawn (P.N.D.)}}{\text{Working Sample Size}} = \frac{\text{Projected Number per Stratum}}{\text{Total Projected Number of Teachers}}$$

The P.N.D. from the total listing of active teachers obtained from superintendents, listed Stratum I through IV, was 57 of 93 (61.2 per cent), 62 of 80 (77.5 per cent), 48 of 137 (39.6 per cent) and 33 of 454 (7.3 per cent). The percentage drawn for each stratum from the projected number of teachers per stratum was 7.3 per cent.

The working sample was composed of (Table 3.4) 200 active industrial education teachers. This is 200 of 2737 total projected number of teachers (7.3 per cent) or 200 of 764 listed teachers by superintendents (26.2 per cent).

A cautionary note to the reader is that the percentage drawn for the sample from the list supplied by the superintendents appeared high for stratum I and II and low for stratum IV. The sample tends to be small as compared to the total projected number of industrial education teachers in the State of Michigan.



Teacher Attitude Assessment

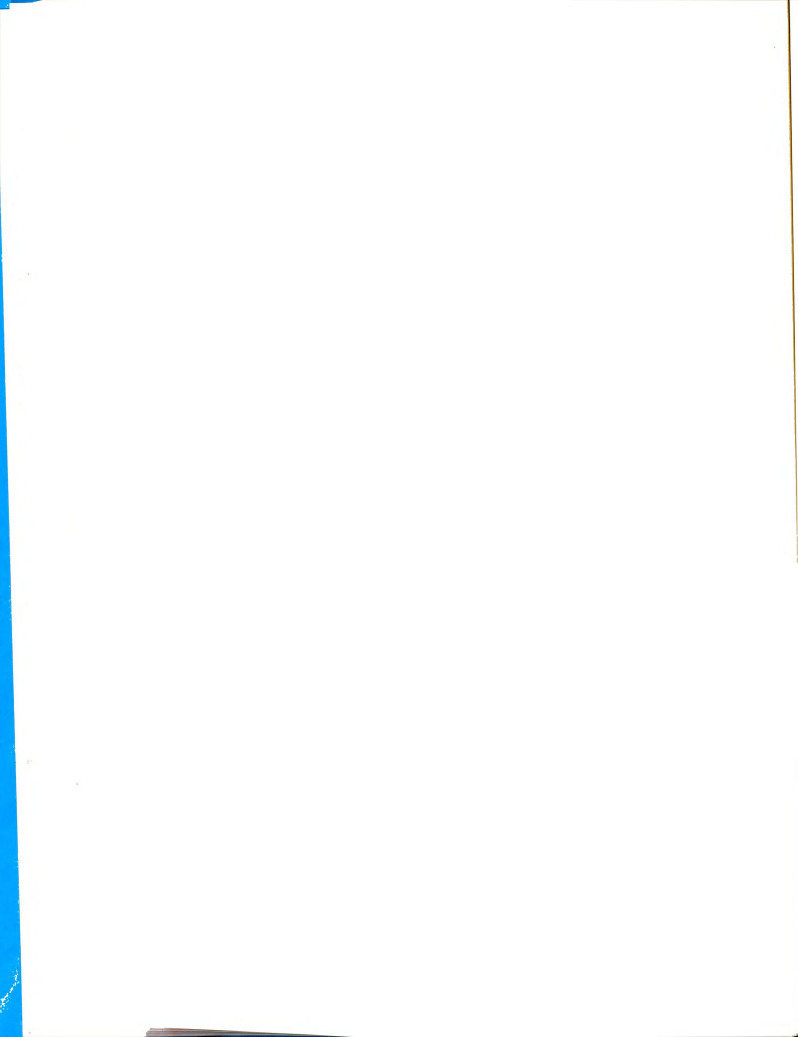
Assessment of Teacher Attitude

Initial mailing of a letter (Appendix A.3) and test instrument (Appendix B.3) to the sample was January 12, 1969 (refer to Chapter IV, page 76, for description of the test instrument and its development). Follow-up requests (Appendix A.4) were sent on January 22, 28 and February 2 and 17.

The total response (Table 3.5) was 164 of 200 (82.5 per cent). One hundred and thirty-five of the 200 (67.5 per cent) returned questionnaires were usable. Thirty-five of the 200 (17.5 per cent) failed to respond. The total number of unusable data sheets plus members not responding was 65 of 200 (32.5 per cent).

TABLE 3.5.--Total response and usable response.

	Sample	Returns	Fail to Return	Percentage Returned	Percentage Not Returning
Total Return	200	165	35	82.5	17.5
Total Usable Return	200	135	65	67.5	32.5



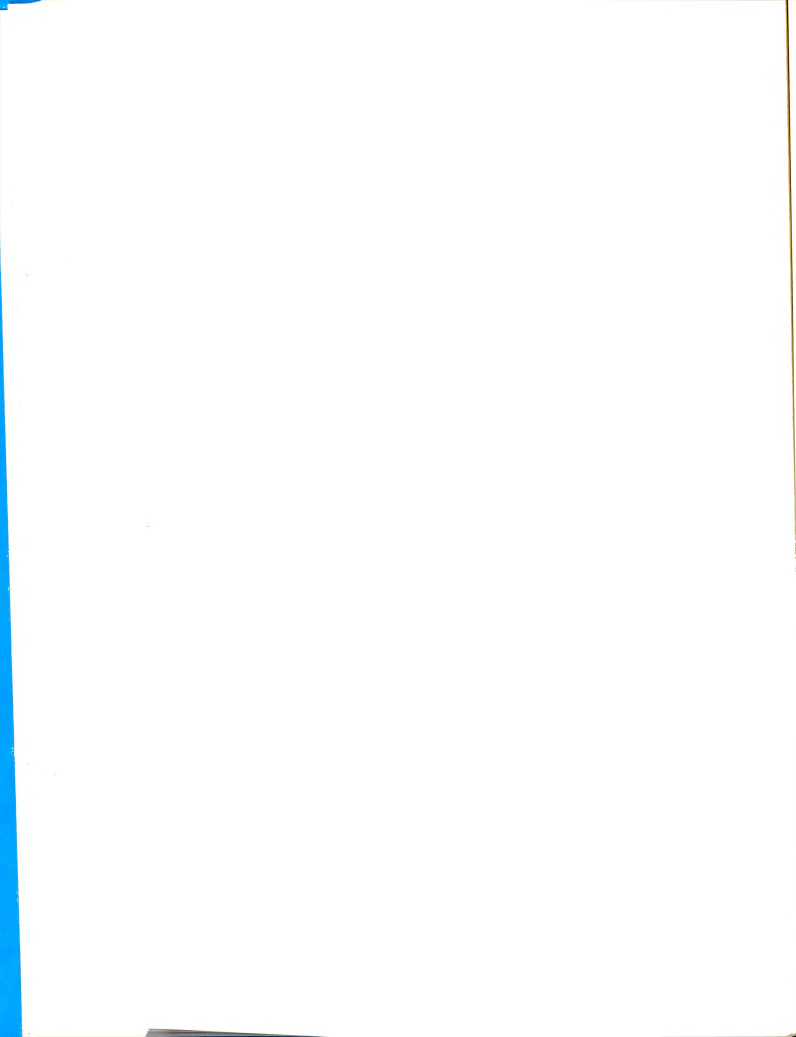
The reasons for invalidation of the returned data sheets (Table 3.6) were these: (1) four (2.4 per cent) did not desire to participate in the study, (2) six (3.7 per cent) were no longer actively teaching industrial education, (3) one (.6 per cent) riot problem, desired not to respond, (4) two (1.2 per cent) felt the questionnaire did not relate to them, (5) eight 4.8 per cent) gave insufficient data for classification, (6) one (.6 per cent) felt he was too busy to respond, (7) six (3.7 per cent) were employed as administrators or consultants and (8) two (1.2 per cent) had retired from active teaching. The total number of invalidated data sheets was 30 of 165 (18.7 per cent).

TABLE 3.6.--Itemization of invalidated data sheets.

Reasons Given	Frequency	Percentage of Respondents
Did not desire to participate	4	2.4
No longer teaching industrial education	6	3.7
*Riot problem, desires not to respond	1	.6
Questionnaire does not relate to position	2	1.2
Insufficient data for classification	8	4.8
Too busy to respond, note attached	1	.6
Employed as administrator of consultant	6	3.7
Retired from active teaching	2	1.2
Total	30	18.2*

Legend: *The percentage of unusable data sheets was 18.7 when calculated as 30 of 165. The difference between this percentage and the summed total above is due to rounding errors.

**The school from which the respondent replied was experiencing student difficulties.



Follow-upFollow-up to Identify Out-Mobiles

Identification of active teachers who became out-mobile was begun on May 2, 1969. A form requesting plans for the 1969-70 school year (Appendix A.5) asked teachers to identify themselves as intending to teach or leave the profession. If they intended to remain in education but change position, this information was requested. Follow-up letters were sent on May 14, May 26 and June 6 (Appendix A.6). Returns were requested to be completed by June 13, 1969.

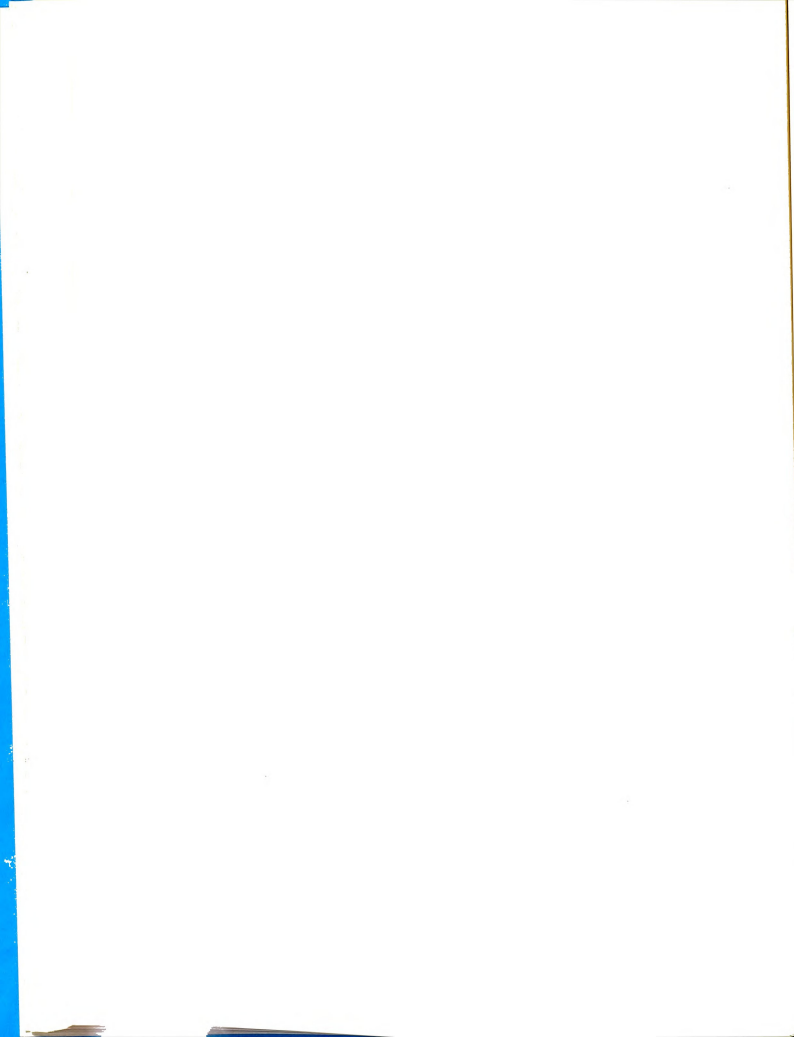
Follow-up requests (Table 3.7) were sent to 197 of 200 (98.5 per cent) of the initial sample. The difference

TABLE 3.7.--Follow-up request to determine out-mobiles.

Requests	Sample	N*	Percentage
Follow-up Requests	200	197	98.5
Requests Returned	197	172	87.3

Legend: *The N represents the number of requests sent and the per cent returned. The difference between the original sample size and the number of requests sent was due to the retirement of three members.

between the original sample and the follow-up sample was that three members indicated retirement on the returned test instrument. One hundred seventy-two of 197 (87.3 per cent) requests were returned. All returned were classifiable.



Summation of the Total Sample Return,
Teachers Leaving Industrial Education
Teaching and Percentage of Out-Mobiles

The percentage of the sample that returned the questionnaire, follow-up or both, is presented in Table 3.8. This table includes the number of active teachers who left industrial education teaching and the percentage who became out-mobile. Analysis is made for the four stratum and the total sample.

The attitude test instrument and follow-up request was returned by 157 of 200 (78.5 per cent) of the active teachers. Returns by stratum ranged from 84.3 per cent of Stratum I to 71.0 per cent of Stratum III. Fourteen of the 200 (7.0 per cent) did not return the questionnaire or follow-up. Stratum I had the greatest percentage of non-respondents, 12.3 per cent. Stratum II had the lowest percentage of non-respondents, 4.1 per cent.

The follow-up check list to determine out-mobiles was returned by 15 of the 200 (7.5 per cent) who did not return the attitude test instrument sent at an earlier date. The range for returning only the follow-up was 1.8 per cent for Stratum I to 15.0 per cent for Stratum III.

The attitude test instrument, but not the follow-up, was returned by 14 of 200 (7.0 per cent). The test instrument only was returned by 1.8 per cent of Stratum I as compared to 12.1 per cent of Stratum IV.

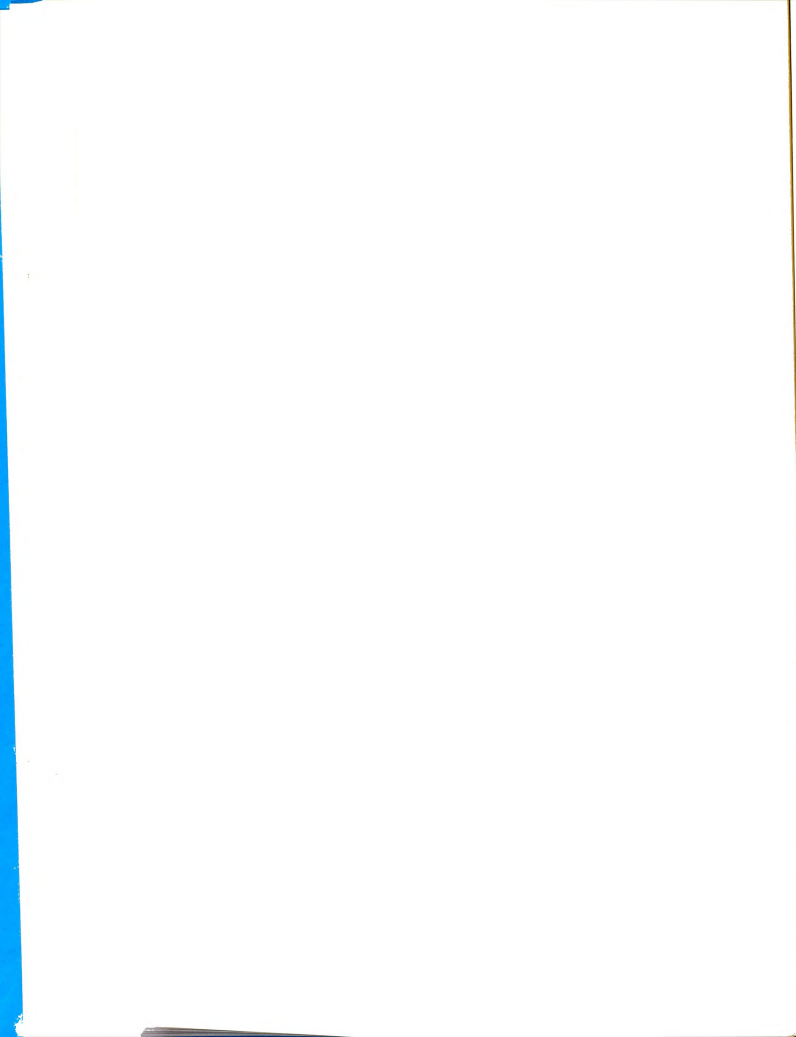
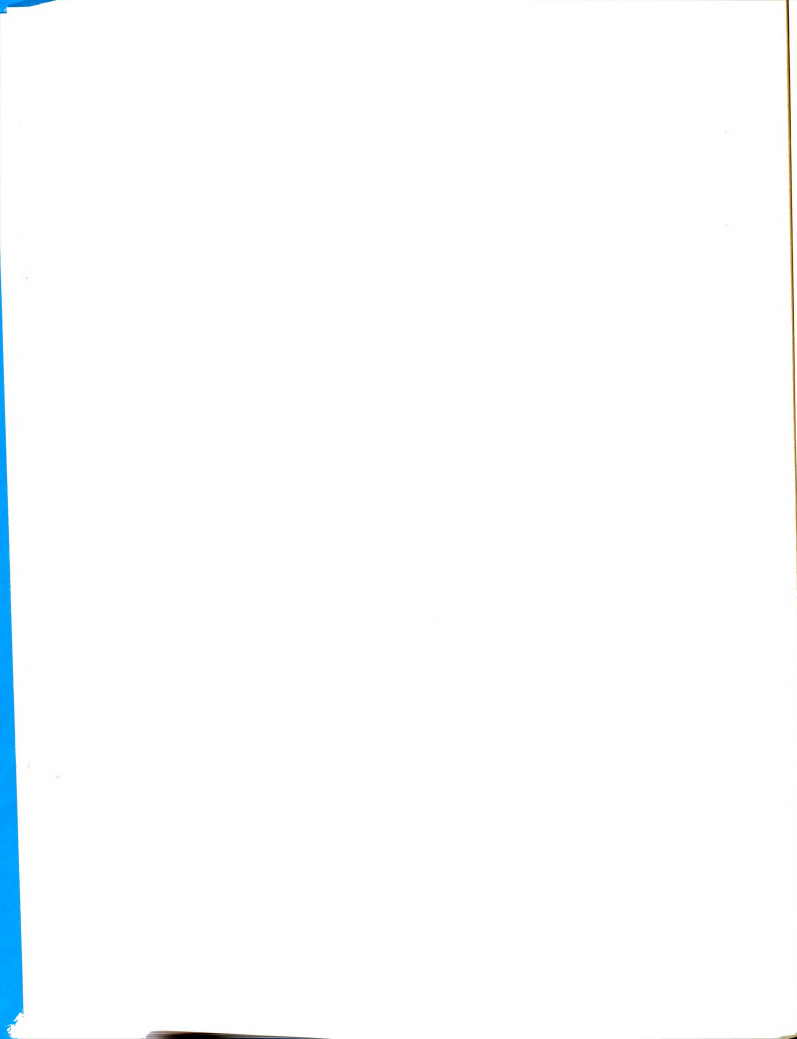


TABLE 3.8.--Summation of the total sample return on questionnaire and follow-up, teachers leaving industrial education teaching, and out-mobiles.

CLASSIFICATION ITEMIZATION OF RETURNS	ST. I		ST. II		ST. III		ST. IV		TOTAL	
	N	%	N	%	N	%	N	%	N	%
SAMPLE SURVEYED										
Returned questionnaire and follow-up	48	84.3	51	83.5	34	71.0	24	73.7	157	78.5
Did not return questionnaire or follow-up	7	12.3	3	5.0	2	4.1	2	6.0	14	7.0
Returned follow-up only	1	1.8	4	6.5	7	15.0	3	9.1	15	7.5
Returned questionnaire only	1	1.8	4	6.5	5	10.3	4	12.1	14	7.0
Sub-Total	57	100	62	100	48	100	33	100	200	100.0
*LEFT INDUSTRIAL EDUCATION TEACHING										
Retired	0		0		0		3	9.1	3	1.5
Administrator	1	1.8	1	1.6	0		3	9.1	3	2.5
Consultant or coordinator	0		3	4.8	2	4.2	0		5	2.5
Army	0		0		1	2.1	1	3.0	2	1.0
Returning to college	3	5.3	0		0		0		3	1.5
Teaching different subject area	0		2	3.2	1	2.1	0		3	1.5
Sub-Total	4	7.0	6	9.7	4	8.3	7	21.2	21	10.5
*OUT-MOBILES										
Left the teaching profession	5	8.8	2	3.2	2	4.2	1	3.0	10	5
TOTAL NUMBER LEAVING ACTIVE INDUSTRIAL EDUCATION TEACHING									31	15.5

Legend: *Summed percentages may not equal zero because of rounding errors. LEFT INDUSTRIAL EDUCATION TEACHING and OUT-MOBILES are calculated on subtotal and total N's.



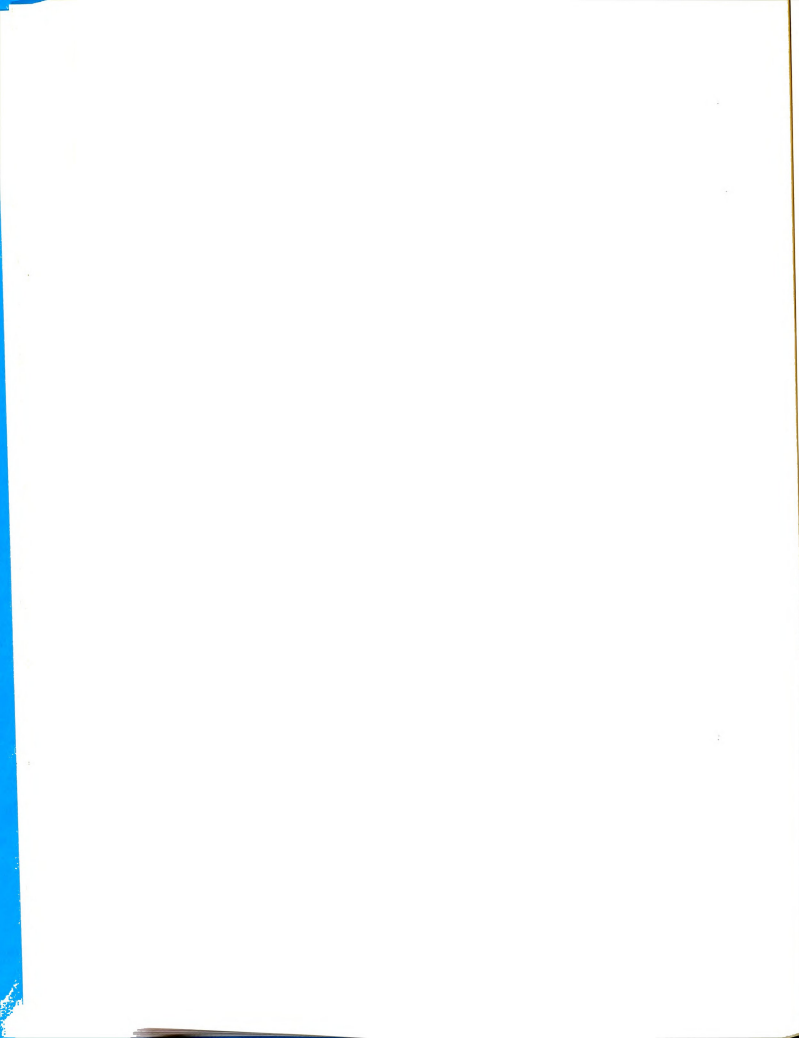
The number of active industrial education teachers who left industrial education teaching was 21 of 200 (10.5 per cent). The highest percentage leaving per stratum was 21.2 per cent from Stratum IV to a low of 7.0 per cent from Stratum I. Active teachers left the classroom with these future plans: 1.5 per cent, retired; 2.5 per cent, consultants or coordinators of programs; 2.5 per cent, administrators; 1.0 per cent, drafted into military; 1.5 per cent, returned to college as students and 1.5 per cent, teaching different subject areas.

The number of out-mobiles identified in the study was 10 of 200 (5.0 per cent).⁴ Stratum I had the highest percentage of 8.8, Stratum II had 3.2 per cent, Stratum III, 4.2 per cent and Stratum IV, 3.0 per cent.

The total number that left active teaching or became out-mobile was 31 of 200 (15.5 per cent). The sample represents approximately 7.3 per cent of the total number of industrial education teachers in the state.⁵

⁴National Education Association, Research Division, Teacher Mobility and Loss (Study of teacher mobility and loss. Washington: National Education Research Bulletin, December, 1968), p. 120. Discussion of this study is included in Chapter II, pages 40-41 of this thesis.

⁵National Education Association, Research Division Teacher Supply and Demand in Public Schools, 1968 (Research Report 1969-R4. Washington, D. C.: National Education Association, 1969), p. 64. The number of industrial education teachers graduating in the State of Michigan for 1966 was 235, 1967 was 226, and, the projected number of graduates for 1968 was 244.



Interviews with Out-Mobiles

A request to interview by telephone (Appendix A.7) was sent to active teachers who had designated themselves as becoming out-mobile. Possible topics for discussion (Appendix A.8) were derived from the test instrument. Interview dialogue is presented in Chapter VI, pages 102 to 113.

Final Report

The Report

The final report of the data obtained from the test instrument was analyzed by a multivariate technique. Comparison of the responses of out-mobiles to active teachers was made. Conclusions and summation of the total study are reported in Chapter VII, page 119.

Hypotheses of the Study

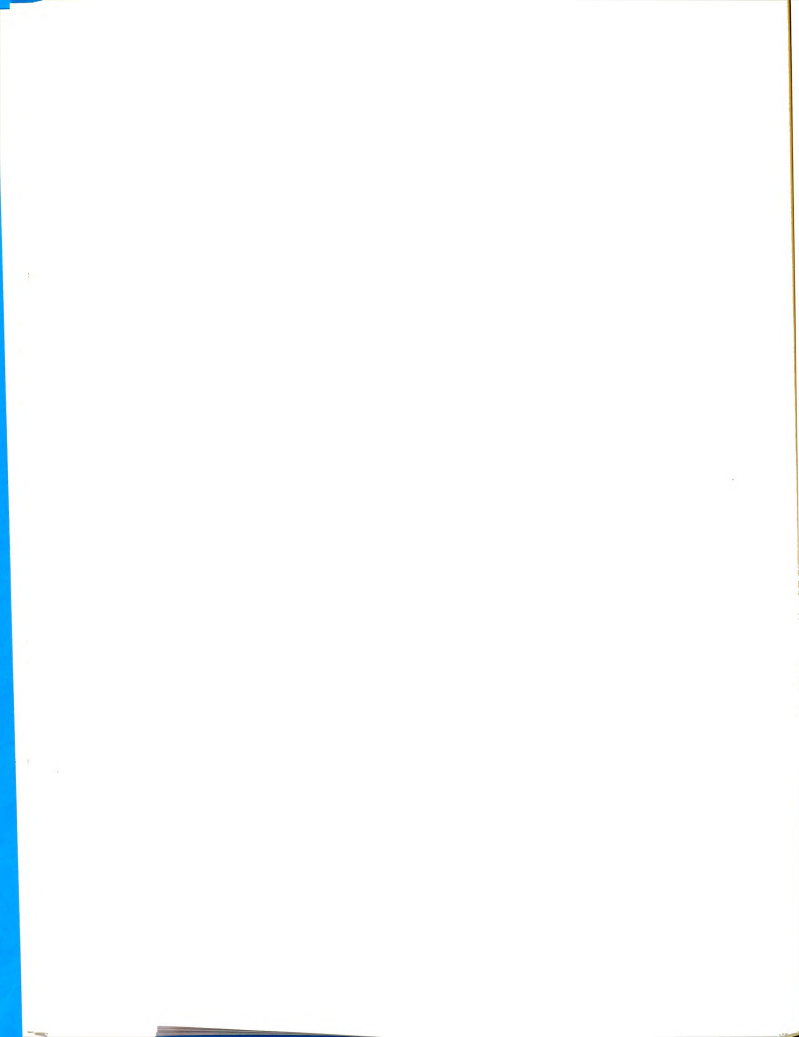
The intent of this study was to compare the professional attitudes of industrial education teachers who remain active in the profession to those who become out-mobile.

The hypotheses of the study were examined by multivariate and univariate tests.

Multivariate Test for Main Effect

Hypotheses I

H_0 : There is no significant difference in the attitudes of out-mobiles as compared to



active industrial education teachers as measured by the attitude test instrument.

H_1 : Attitudes of out-mobiles do differ significantly from attitudes of active industrial education teachers as measured by the test instrument.

Univariate Test of Subcategories

Hypotheses I.

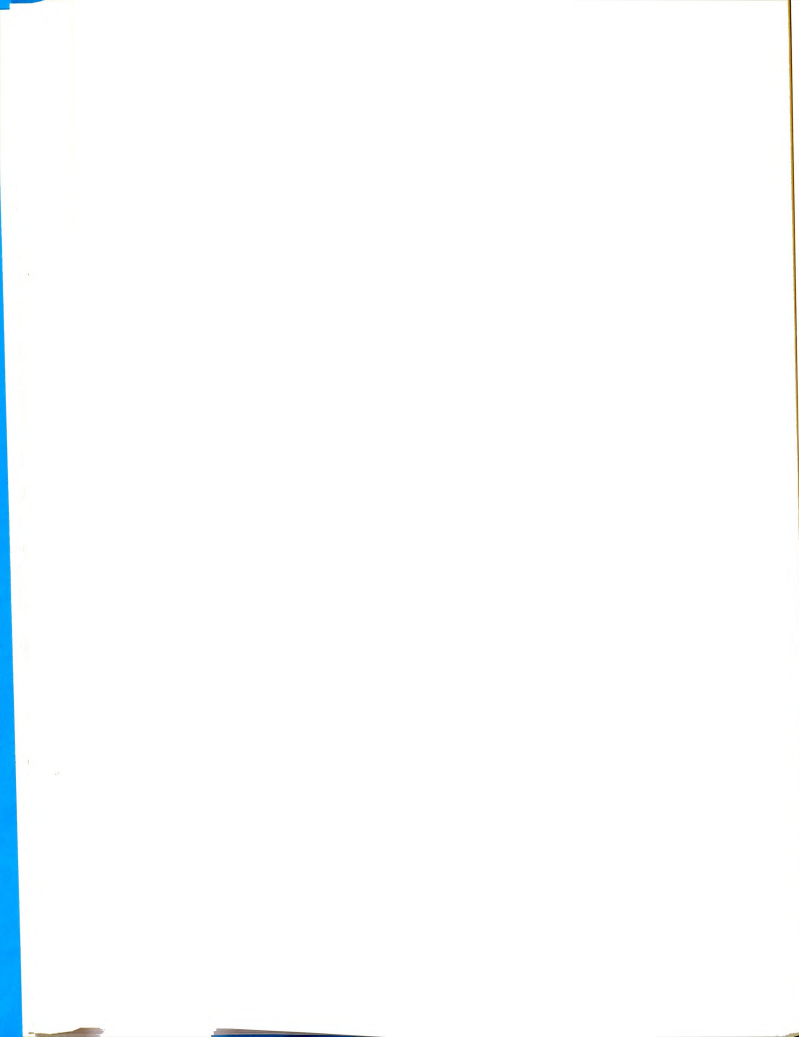
H_0 : There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward economic worth and wages paid.

H_1 : Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward economic worth and wages paid.

Hypotheses II.

H_0 : There is no significant difference in the attitudes of out-mobiles as compared to active teachers toward the work requirements of teaching.

H_1 : Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward the work requirements of teaching.



Hypotheses III.

H_0 : There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their community role.

H_1 : Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward their community role.

Hypotheses IV.

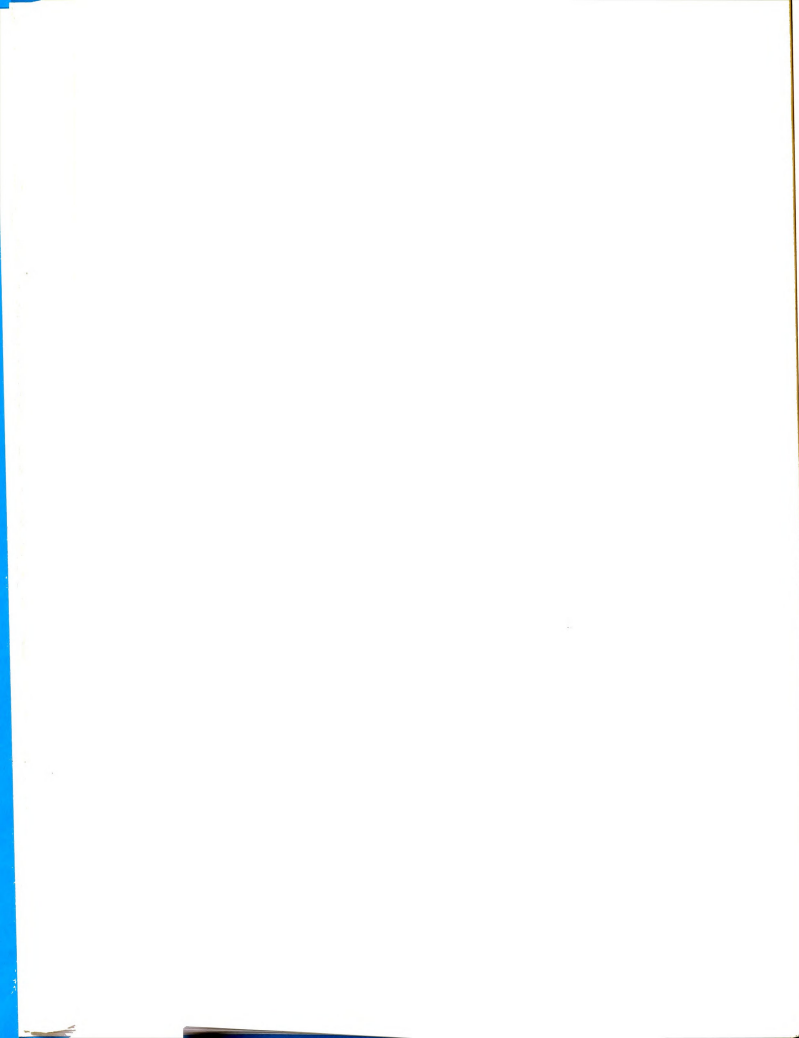
H_0 : There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward relations with administrators.

H_1 : Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward relations with administrators.

Hypotheses V.

H_0 : There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their relations with students.

H_1 : Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward relations with students.



Hypotheses VI.

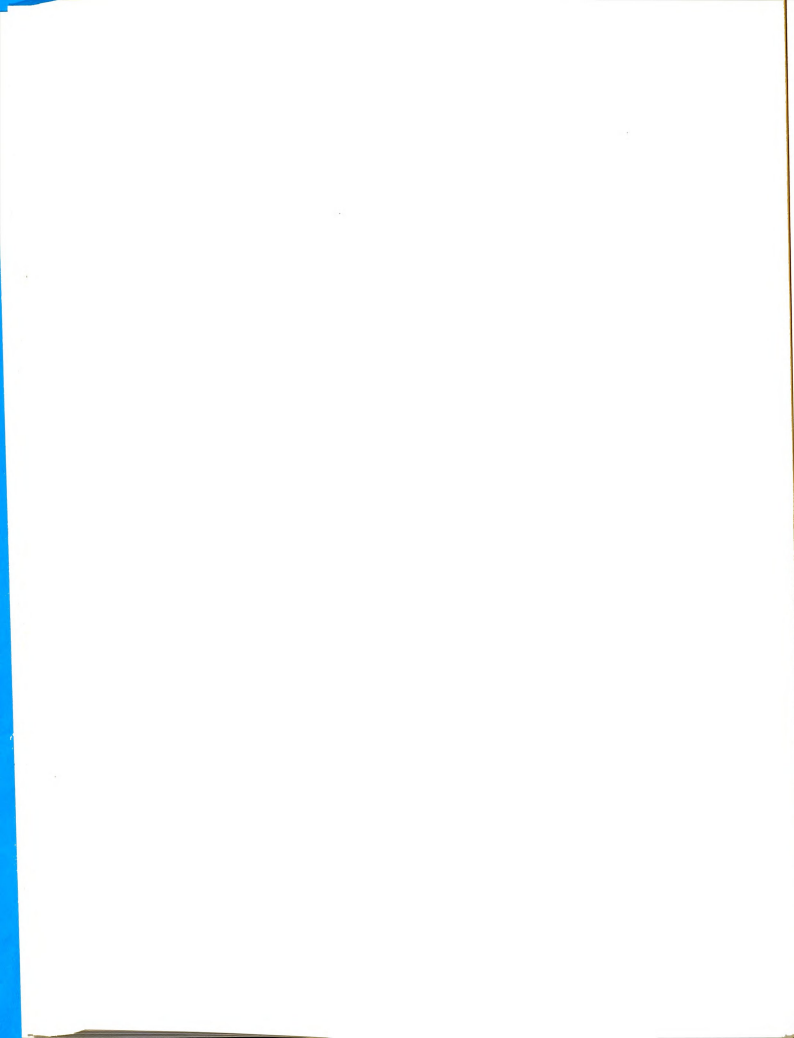
- H_0 : There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their opportunity for professional advancement.
- H_1 : Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward their opportunity for professional advancement.

Hypotheses VII.

- H_0 : There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their capabilities as a teacher.
- H_1 : Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward their capabilities as a teacher.

Hypotheses VIII.

- H_0 : There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their professional satisfaction.
- H_1 : Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward their professional satisfaction.



Six variables were examined for possible interaction with the main effect: (1) size of the school in which the individual teaches, (2) number of years of teaching experience, (3) age of the teacher, (4) those having taught and left the profession but later returned, (5) number of moves in the profession, and (6) attitudes of industrial arts teachers as compared to vocational education teachers.

The relationship for every variable in each of these subcategories were examined: (1) economic worth and wages paid, (2) work requirements, (3) community role, (4) relations with administrators, (5) relations with students, (6) opportunity for professional advancement, (7) capabilities as a teacher, and (8) personal satisfaction in the profession.

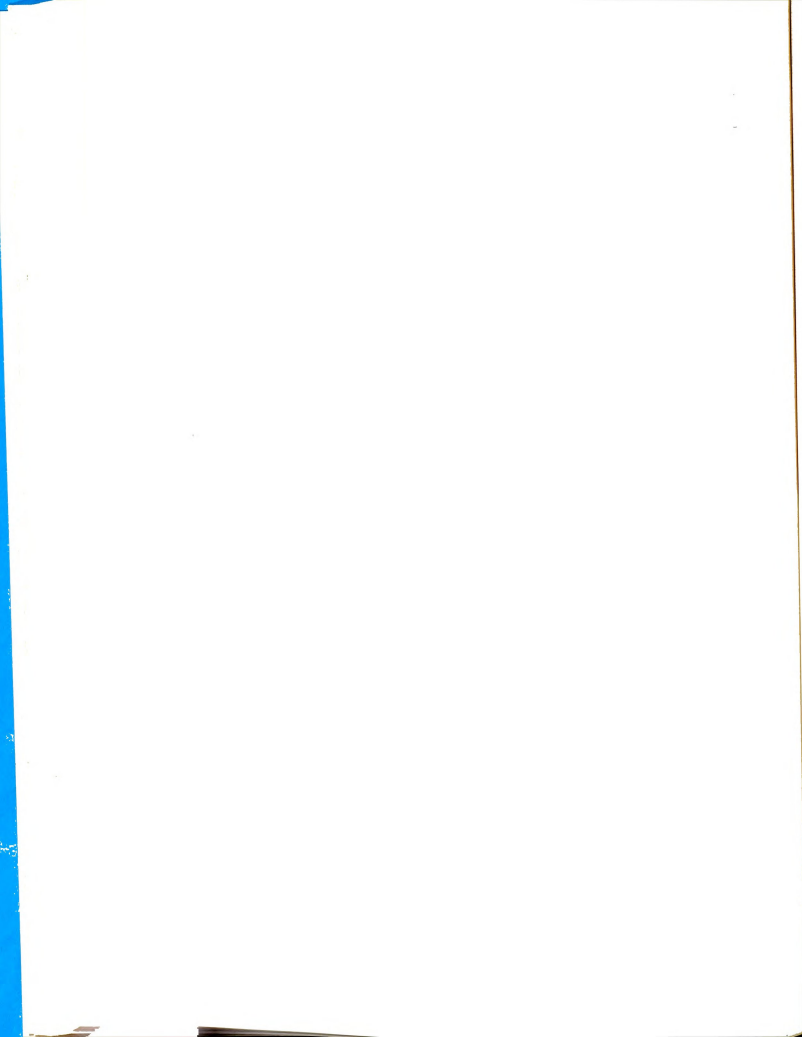
Statistical Model

The multivariate analysis of variance was selected for analysis of the data. Assumptions made about the population were: (1) normality of distribution, (2) independence of observations, and (3) equal error variance.⁶

Multivariate Analysis of Variance

Multivariate analysis in behavior research, as presented in Whitla's Handbook of Measurement and Assessment in Behavioral Sciences, is the simultaneous examination

⁶ N. M. Downie and R. W. Heath, Basic Statistical Methods (New York: Harper and Row, Publishers, 1965), p. 177.



of differences between variants.⁷ The purpose of application is to determine how and to what extent the independent variables explain the responses of the subjects in the dependent variables.

A Rao approximate F was used as the multivariate test of the six variables and the main effect.⁸ Derivation of this test is from Wilk's Λ . Application of the model may be made to any number of groups, any number of test variables and any number of covariant variables.

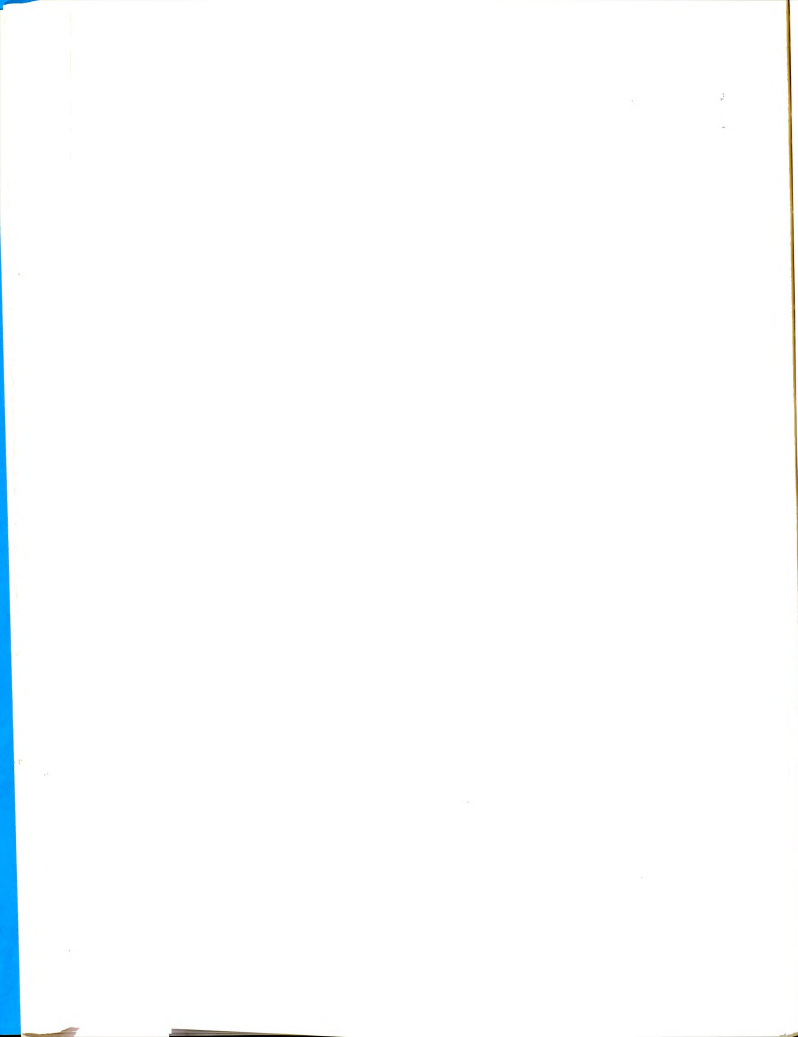
A univariate, one-way analysis of variance, was calculated for each of the eight subcategories of the test instrument. In a univariate F test on each variate, with the data obtained from the same subjects, there is no assurance that the tests are statistically independent. The multivariate model takes into account the correlations between variables in computation of the F ratio.⁹

The model examined the data for the variables: age, experience, philosophy, number of moves, having always taught and population center size in the eight subcategories of the test instrument and the different levels of the

⁷Dean K. Whitla (ed.), Handbook of Measurement and Assessment in Behavioral Sciences (Reading: Addison-Wesley Publishing Company, 1968), pp. 100 ff.

⁸Ibid., pp. 96-98.

⁹Ibid., pp. 100-103.



variate simultaneously. The final analysis was to determine if the null hypothesis for the active teachers as compared to out-mobiles could be rejected.

Assumptions about the Population

Assumptions made about the population were:

1. that for each treatment population the error distribution is assumed normal.
2. that for each treatment population the distribution of error has the same variance.
3. that the errors associated with any pair of observations are assumed to be independent of each other.¹⁰

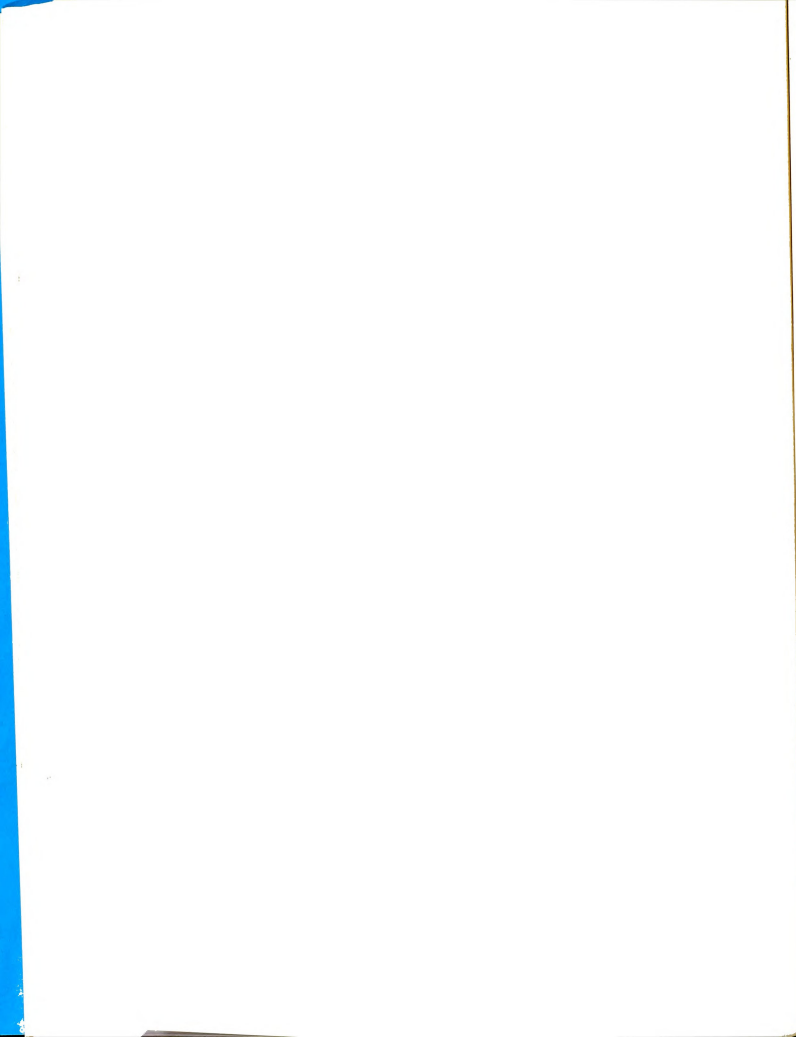
Population assumptions on normality of distribution may depart considerably from normal provided the N (number of subjects) in each sample is relatively large. Inferences made about normal populations are applicable in populations having relative violations of normality.

The assumption of error variance may be violated without serious risk provided the sample N's are equal. Serious consequences may occur when samples are of various subject sizes.

The assumption of error independence is most critical for justification of the F test. If the assumption is not met, serious violations may be made.¹¹

¹⁰William L. Hays, Statistics for Psychologists (New York: Holt, Rinehart and Winston, 1963), p. 356.

¹¹Ibid., pp. 378-379.



The F test is a very robust estimate of mean variance. Minor violations do not affect inferences. The results of analysis for all hypotheses was an F test.

Application of Multivariate Model

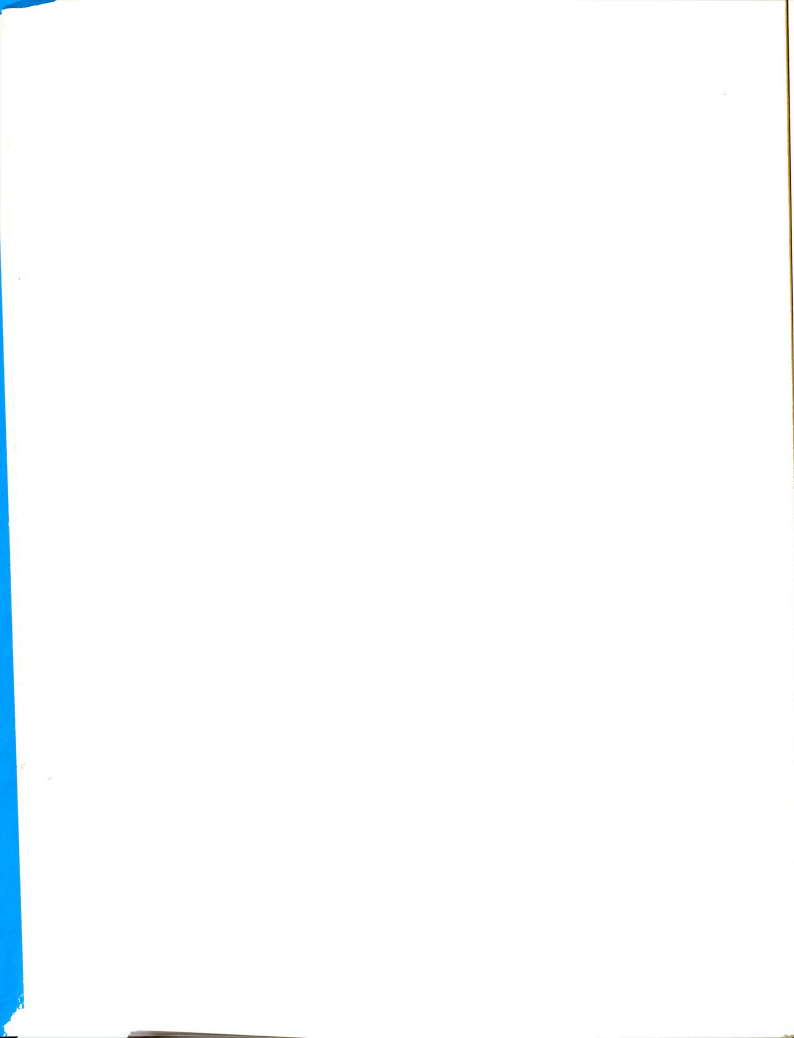
In testing mean score differences between active teachers and out-mobiles by the multivariate model, an F-test is given for the total instrument. In analysis of the data, the model considers correlations between all subcategories of the test instrument. A significant F would lead to the rejection of the null hypothesis indicating differences do exist between attitudes of out-mobiles and active teachers.

Each subcategory was calculated as a univariate F test. Significance of a subcategory indicates a major contribution by that category towards a significant F for the main effect. A significant subcategory F test, after a significant main effect, is an indication that the subcategory of the instrument measured differences between attitudes of out-mobile and active teachers.

The level of significance for rejection of the null hypothesis was .05. Rejection of the null leads to the acceptance of the alternative hypothesis.

Computation

Programming of the data for computation was done by the assistants in the Bureau of Education Research, College



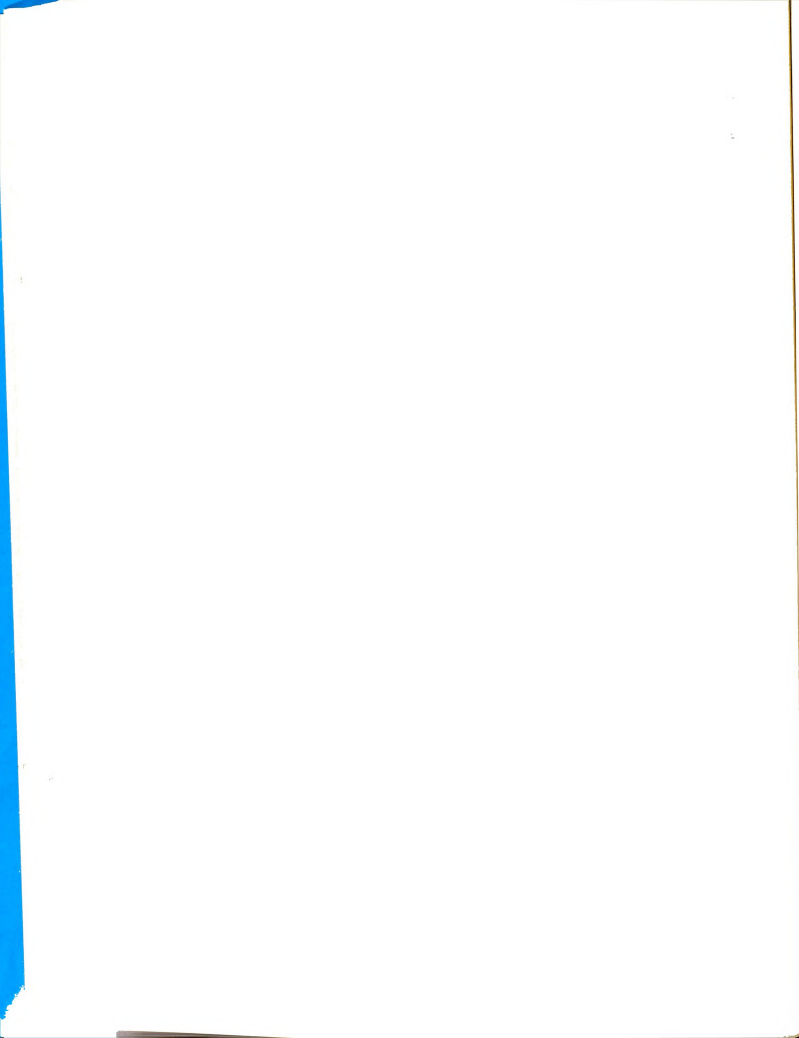
of Education, Michigan State University. The multi-variate analysis of variance tape routine was developed by Jeremy Finn, State University of New York at Buffalo. A control data 3600 computer in the Computer Center at Michigan State University was used in running of the data.

Summation

The study design includes these four areas: (1) sample selection, (2) teacher attitude assessment, (3) follow-up to determine out-mobility, and (4) final report giving conclusions and summation of the total study.

The multi-stage stratified sample of Michigan industrial education teachers was made in two steps: (1) categorization of schools into four population size strata, and (2) random selection of teachers. Seventy-nine of 554 (14.3 per cent) of the school systems in the state were drawn. Superintendents returned a listing of all industrial education teachers employed in their system for the 1968-1969 academic year. The compiled list of active teachers was 764 of 2,737 total projected number of teachers. A proportional sample of teachers was drawn from each strata of the compiled list. The cumulative sample was 200 of 764 (26.1 per cent) of the compiled list of active teachers, or 200 of 2,737 (7.3 per cent) of the total projected number of teachers.

The test instrument was developed to measure selected professional attitudes of industrial education teachers.



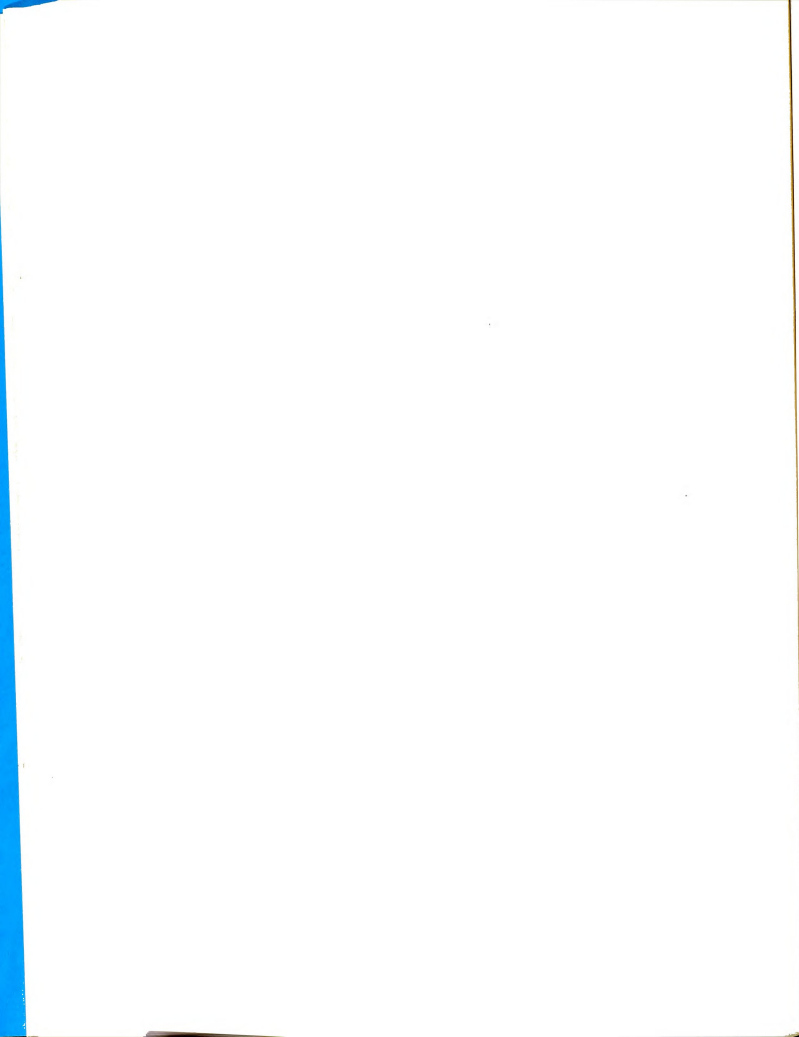
Steps in the development of the test instrument are presented in Chapter IV.

Assessment of teacher attitude was made from January 14, 1969, until February 17, 1969. Total return of questionnaires was 165 of 200 (82.5 per cent). One hundred and thirty-five of the 200 (67.5 per cent) teachers returned usable data sheets.

A follow-up to determine out-mobiles began May 2, 1969, and terminated on June 14, 1969. A check sheet to indicate plans for the 1969-1970 academic year was sent to 197 active teachers. The return was 172 of 197 (87.3 per cent). The number returning both the attitude test and the follow-up request was 157 of 200 (78.5 per cent).

The number of out-mobiles identified was 10 of 200 (5 per cent). The total number of active industrial education teachers either becoming out-mobile or leaving industrial education teaching was 31 of 200 (15.5 per cent). The group leaving active industrial education teaching included three who retired, five who became administrators, five who became consultants or coordinators, two who were inducted into the army, three who returned to college studies and three who indicated they will be teaching in different subject areas.

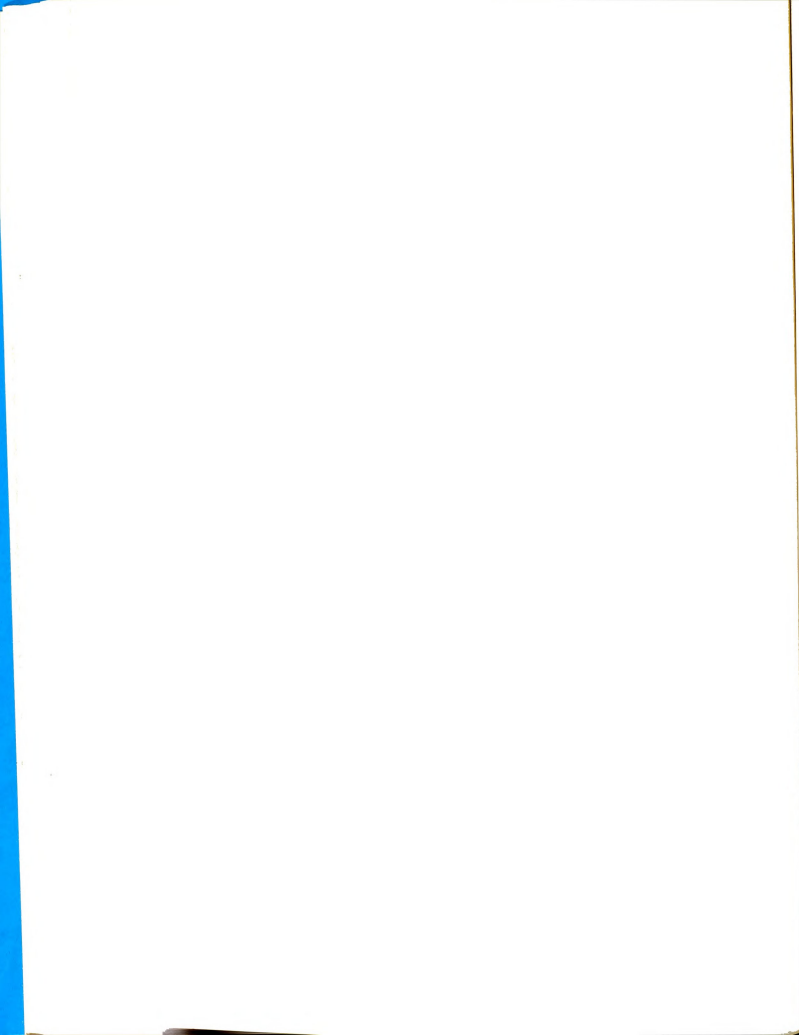
Hypotheses examined in the study are written as null and alternative form. Variables examined were these: age of the teacher, number of years of teaching experience,



vocational or industrial arts teacher, population center size, teachers who have moved in the profession, and teachers who have taught, left, and returned. The major concern of the study was to determine attitude differences between active teachers as compared to out-mobile teachers.

The multivariate analysis of variance, Rao approximate F, was used to examine the six variables and the main effect. A univariate F, one-way analysis of variance, was computed for each of the eight subcategories of the test instrument in each of the six variables and for the main effect. Computation was done on a 3600 computer at Michigan State University Computer Center.

Assumptions were that the population met the requirements of normality, homogeneity, and independence.



CHAPTER IV

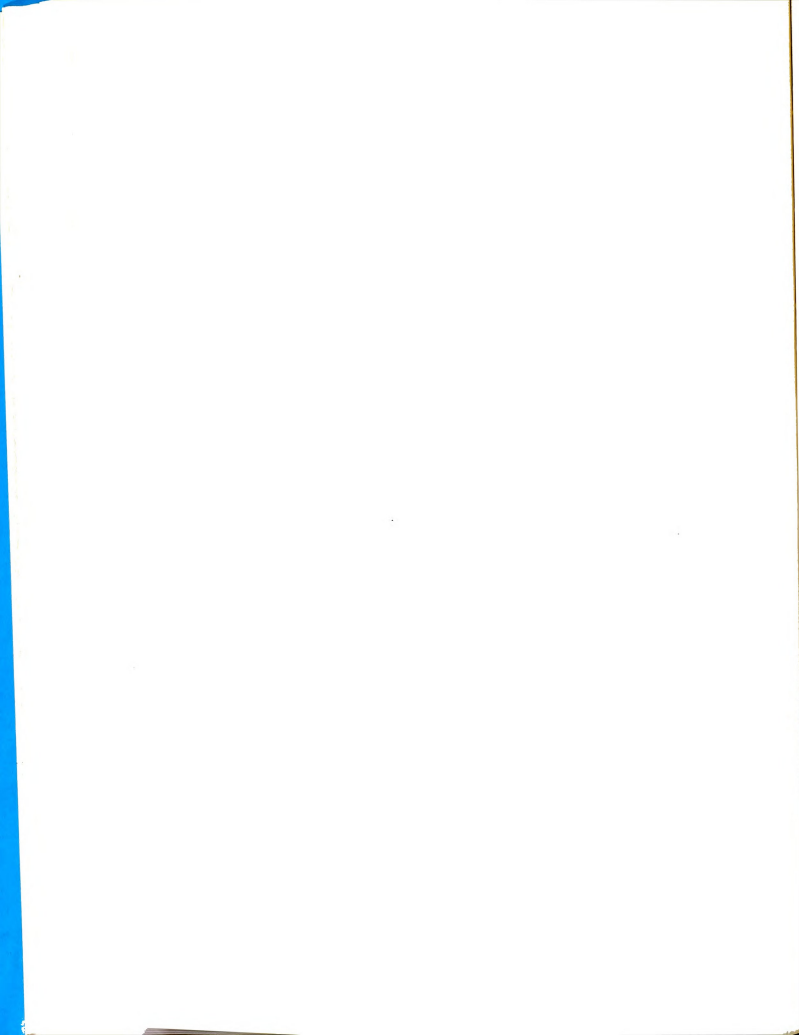
THE TEST INSTRUMENT

An instrument to measure the attitudes of industrial education teachers was developed. The Thorndike and Hagen study identified some reasons for leaving the profession as given by teachers, administrators and college professors; these were incorporated into this instrument.¹ By their responses, teachers indicated attitudes toward themselves, administrators, associates, and the community. These responses were recorded on a Likert scale ranging from strongly agree to strongly disagree.²

The steps used in development of the instrument were these: (1) development of a four-by-eight matrix for category analysis, (2) administering of a ninety-six

¹Robert Thorndike and Elizabeth Hagen, Characteristics of Men Who Remained In and Left Teaching, Cooperative Research Project No. 574, (SAE 8189), United States Office of Education, Department of Health, Education, and Welfare (New York: Teachers College, Columbia University, 1955), pp. 1 ff.

²Allen L. Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century-Crofts, Inc., 1955), p. 149 ff.



item pretest, (3) calculation of Kuder-Richardson reliability on the pretest, (4) item selection by summated rating method and (5) recalculation of reliability on the revised fifty-seven statement instrument.

The test instrument of seventy-two items was sent to a sample of two hundred active industrial education teachers. A Kuder-Richardson reliability index was calculated using the returns from this sample.³

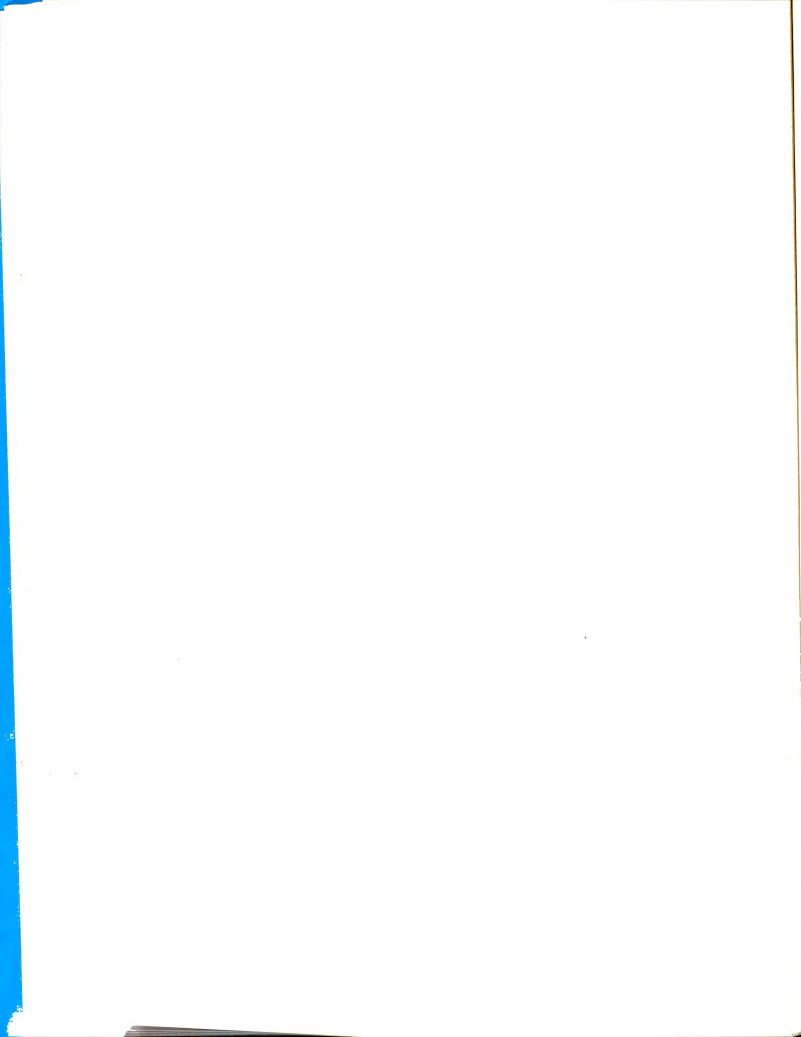
Matrix Analysis of Contributing Factors

A study to determine the characteristics of men teachers and the reasons why they left the teaching profession was used in development of the test instrument. (Refer to Chapter II, Review of Literature, page 42, for a review of the Thorndike and Hagen study). These reasons formed the bases for the eight subcategories of the test instrument. They were:

1. Had too many duties other than teaching.
2. Wages paid for responsibilities were too low.
3. Opportunity for another good job was available.
4. Opportunity for professional advancement was not available.
5. Indoor work was too confining for the individual.
6. Did not like teaching.
7. Felt he was not a good teacher.
8. Lack of student interest and discipline was undesirable.⁴

³William A. Mehrens and Robert L. Ebel, Principles of Educational and Psychological Measurement (Chicago: Rand McNally and Company, 1967), p. 108 ff. Included is the calculation formula for the Kuder-Richardson reliability coefficient. Computation was done by the 3600 computer at Michigan State University.

⁴Thorndike and Hagen, op. cit., pp. 14 ff.

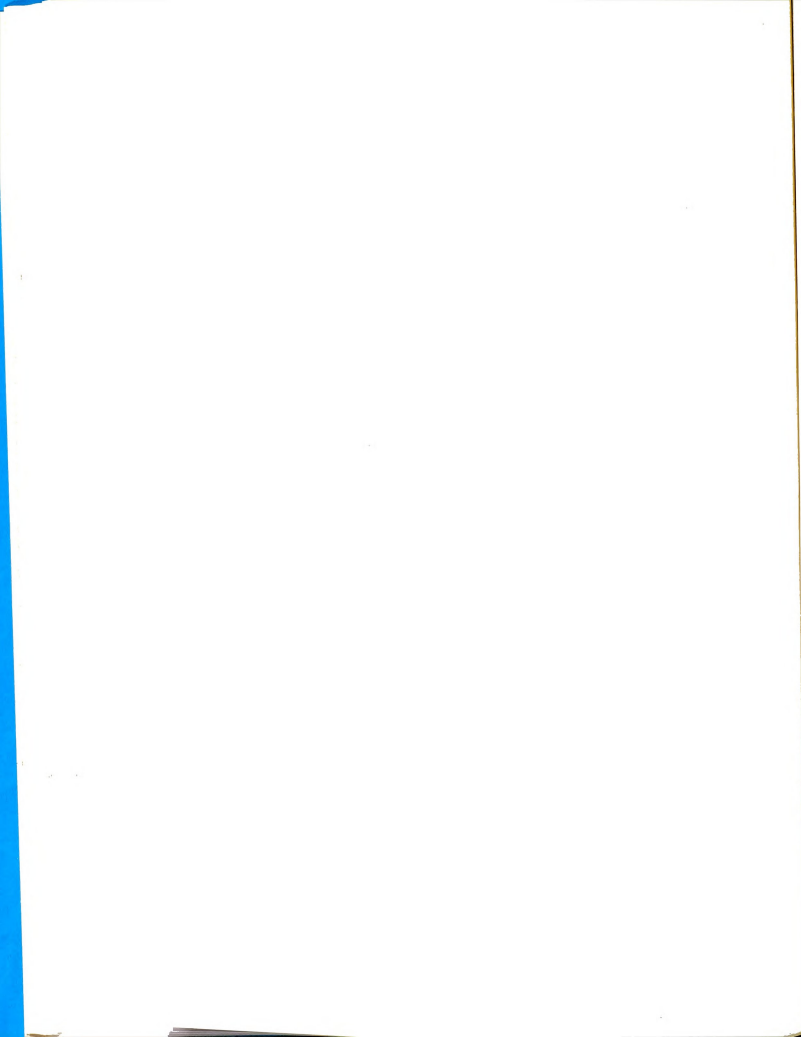


A four-by-eight matrix (Table 4.1) was formulated to assist in analysis of categories. Included were the environmental composites: (1) myself, referring to the industrial education teacher; (2) staff, fellow teachers in the school system; (3) administrator, the administrators of the school system; and (4) community, people who live and work in the area surrounding the teacher and the school.

TABLE 4.1.--Matrix used to develop the test instrument.

Sub-Categories	Environmental Constituents			
	Myself	School Staff	Administration	Community
1. Economic Worth and Wages Paid.	6 items*			
2. Work Requirements.				
3. Community Role				
4. Relations with the Administrators.				
5. Relations with the Students.				
6. Opportunity for Professional Advancement.				
7. Capabilities as a Teacher.				
8. Satisfaction with the Profession.				

Legend: * Each cell of the four-by-eight matrix yielded six items. A total of 192 possible test statements were generated.



Subcategories of the test instrument, based on reasons why teachers left the profession, were these: (1) economic worth and wages paid, (2) work requirements, (3) community role, (4) relations with administrators, (5) relations with students, (6) opportunity for professional advancement, (7) capabilities as a teacher, and (8) satisfaction with the profession.

Each cell of the four-by-eight matrix (Table 4.1, page 83) yielded six items. The composite number of statements generated from the matrix was 192.

Development of the Test Instrument

Ninety-Six Item Pre-test

The ninety-six item pre-test (Appendix B.1) instrument was administered to fifty-four students enrolled in graduate courses at Michigan State University and Oakland University. A pretest sample which would most nearly be representative of the working population was obtained. Subjects selected were actively teaching or had recently taught in the public school. Foreign students were excluded as not being representative of the true population.

The reliability index for the pre-test instrument of ninety-six items based on fifty-four subjects was .96 (Table 4.2). Indices for the eight subcategories, twelve statements per category, listing indices one through eight consecutively, were these: .58, .56, .67, .45, .50, .51, .58

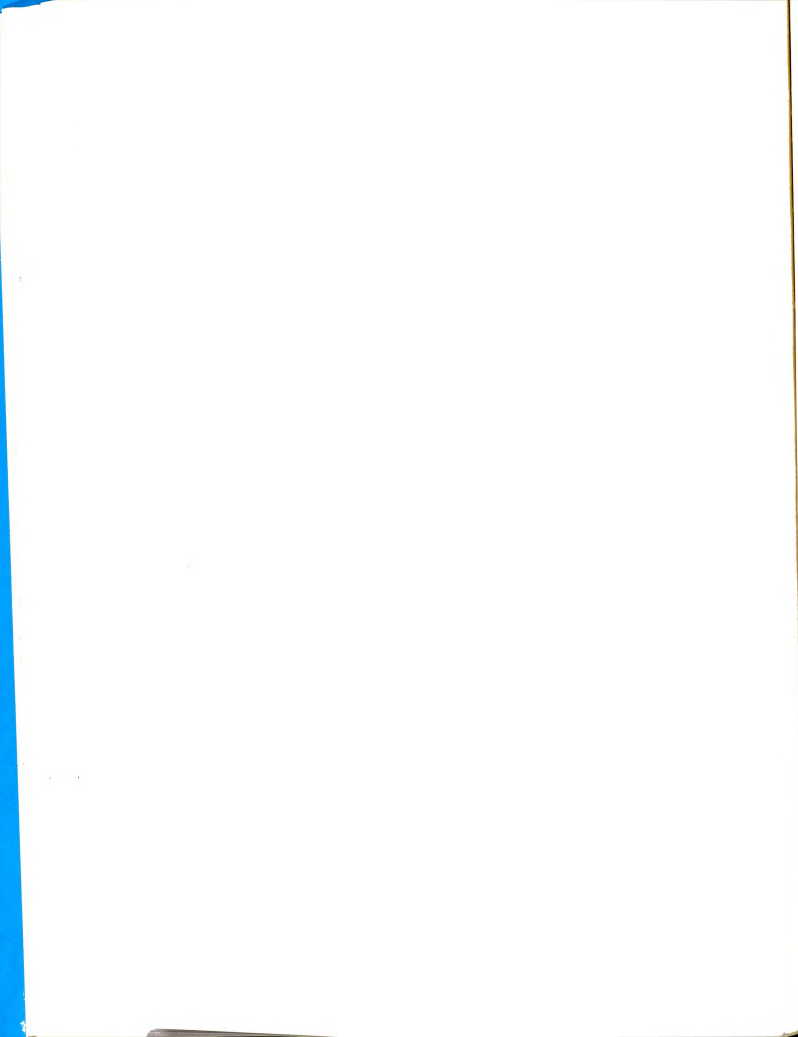


TABLE 4.2.--Kuder-Richardson reliability for the total ninety-six item pre-test, reconstructed fifty-seven item pre-test and the seventy-two item test instrument for the working sample.

Test	Source	SS	MS	df	F	R and SE
A	Ind	1.45	2.73	53	2.49	0.96
	Items	2.38	2.51	95	2.28	10.21
	Error	5.23	1.10	5035		
	Total	7.22		5183		
B	Ind	1.18	2.22	53	1.51	0.93
	Items	2.31	4.12	56	2.79	9.09
	Error	4.38	1.47	2969		
	Total	5.79		3077		
C	Ind	3.03	2.26	134	1.49	0.93
	Items	5.57	7.84	71	5.16	10.39
	Error	1.45	1.52	9514		
	Total	1.81		9719		

Legend: A is the ninety-six item pre-test with 54 subjects. B is the fifty-seven item pre-test with fifty-four subjects. C is the seventy-two item test instrument with the working sample of 135.

and .45 (Table 4.3 page 86). Source tables for the total test and each of the subcategories (Appendix C.1) were formulated.

Method of Summated Rating for Item Selection

The Likert scale of five responses, strongly agree, agree, undecided, disagree, and strongly disagree, was used to assess individual numeric value to test statements. Application of the method of summated rating for item selection

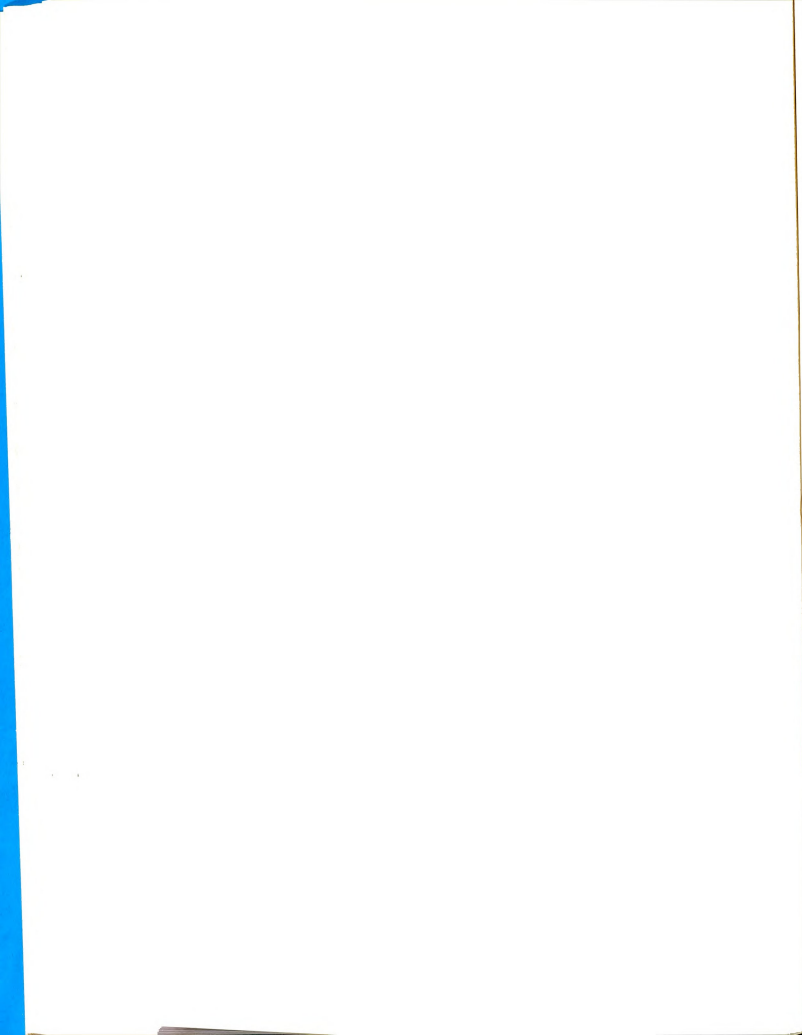


TABLE 4.3.--Kuder-Richardson reliability for the subcategories on the ninety-six item pre-test, reconstructed fifty-seven item pre-test and the seventy-two item test instrument using the working sample.

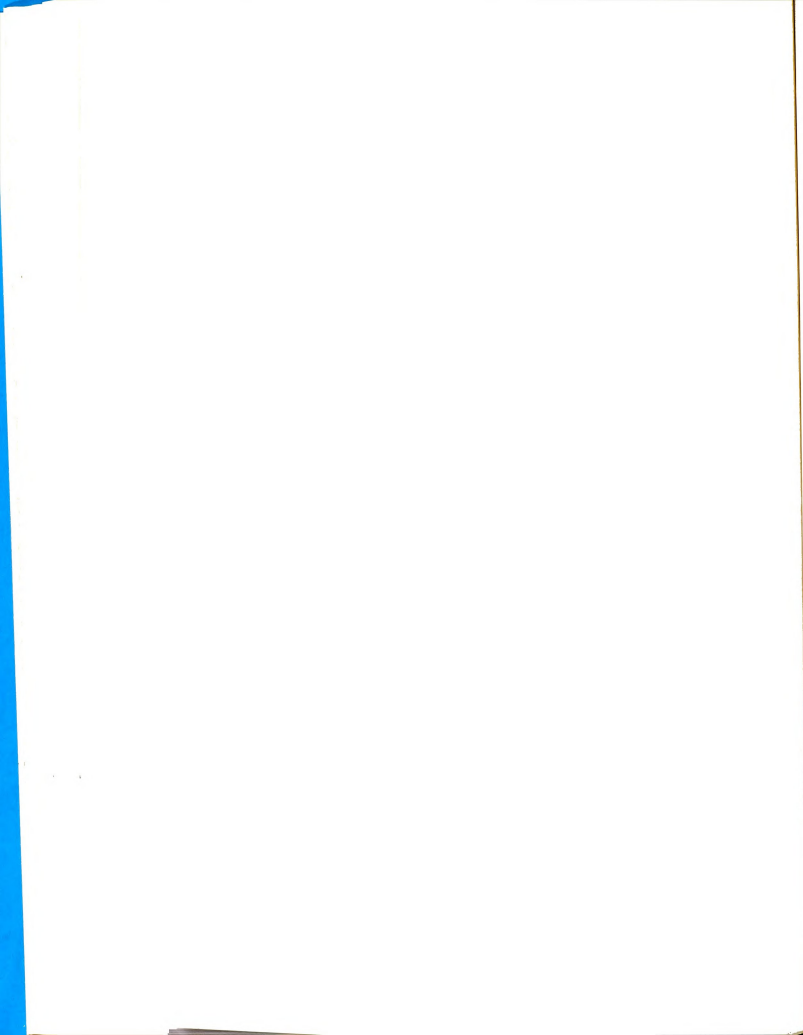
Pre-Test		A		B		C	
Sub-categories	No. of Items	R	No. of Items	R	No. of Items	R	
1	12	.58	7	.79	9	.77	
2	12	.56	7	.61	9	.34	
3	12	.67	7	.67	9	.62	
4	12	.45	9	.60	9	.40	
5	12	.50	4	.58	9	.44	
6	12	.51	6	.51	9	.38	
7	12	.58	9	.50	9	.30	
8	12	.45	8	.30	9	.14	
		Source	df	Source	df	Source	df
		Ind	53	Ind	53	Ind	134
		Items	11	Items*		Items	8
		Error	583	Error*		Error	1072
		Total	647	Total*		Total	1214

Legend: A is the ninety-six item pre-test with 54 subjects. B is the fifty-seven item pre-test with fifty-four subjects. C is the seventy-two item test instrument with the working sample of 135.

* Degrees of freedom differ for each subcategory dependent upon the number of items. Check source tables in Appendix C for degrees of freedom.

was used to reduce the test instrument from ninety-six to seventy-two statements.⁵

⁵Edwards, op. cit., pp. 149-156. T-scores were computed with the use of a calculator.



Calculated t-scores (Appendix B.2) for each of the ninety-six statements with fifty-four subjects led to the rejection of statements having a t .05 of less than 1.67. The number of statements rejected (Appendix B.2) per subcategory varied. A Kuder-Richardson reliability was calculated for the fifty-seven item reconstructed pre-test.

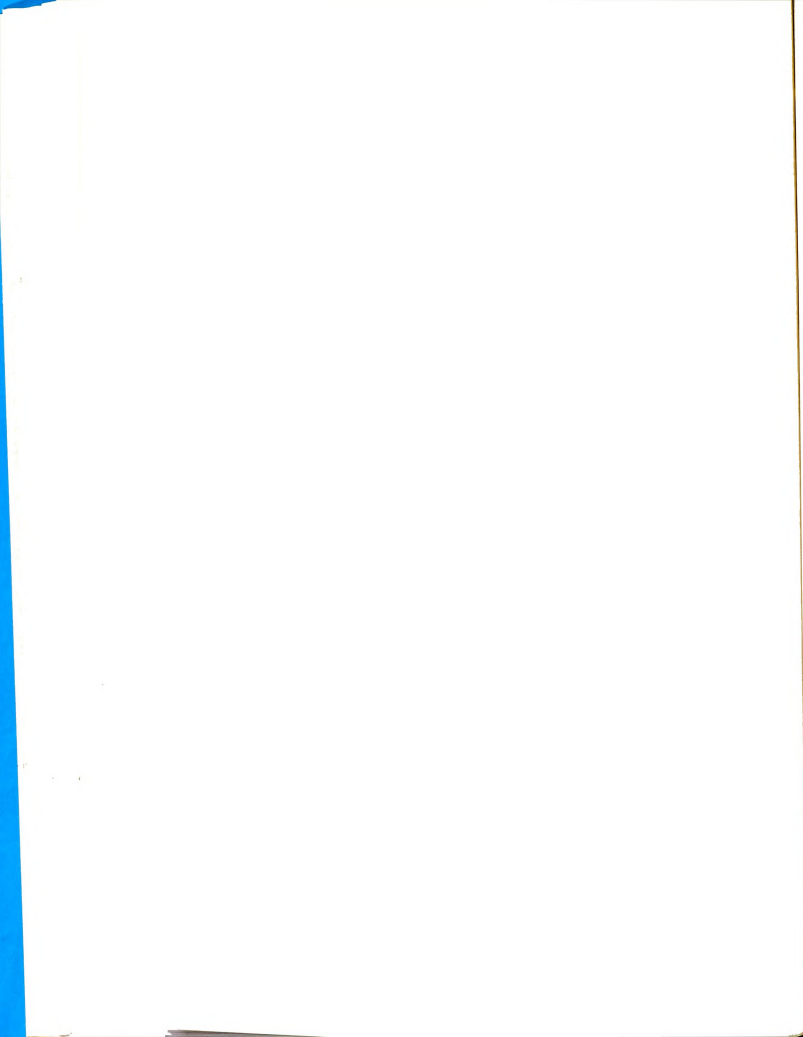
Fifty-Seven Item Pre-Test

Scores from the fifty-four person sample of students enrolled in graduate courses at Michigan State University and Oakland University were reused to calculate a new reliability index.

The reliability for the fifty-seven statement pretest was .93 (Table 4.2, page 85). Indices (Table 4.3, page 86) for each of the subcategories, giving the number of items and reliability listed one through eight consecutively, were 7, .79; 7, .61; 7, .67; 9, .60; 4, .58; 6, .51; 9, .50 and 8, .30 (Source Tables, Appendix C.3 and C.4).

Seventy-Two Statement Test Instrument

The test instrument (Appendix B.3) was sent to 200 active industrial education teachers. Of these, 135 returned test instruments were used to calculate a Kuder-Richardson reliability. The reliability (Source Tables, Appendix C.4 and C.6) for the test instrument using the working sample return was .93 (Table 4.2, page 85). Indices for each of the eight subcategories, one through



eight, were .77, .34, .40, .44, .38, .30 and .14. Each subcategory had nine items (Table 4.3, page 86).

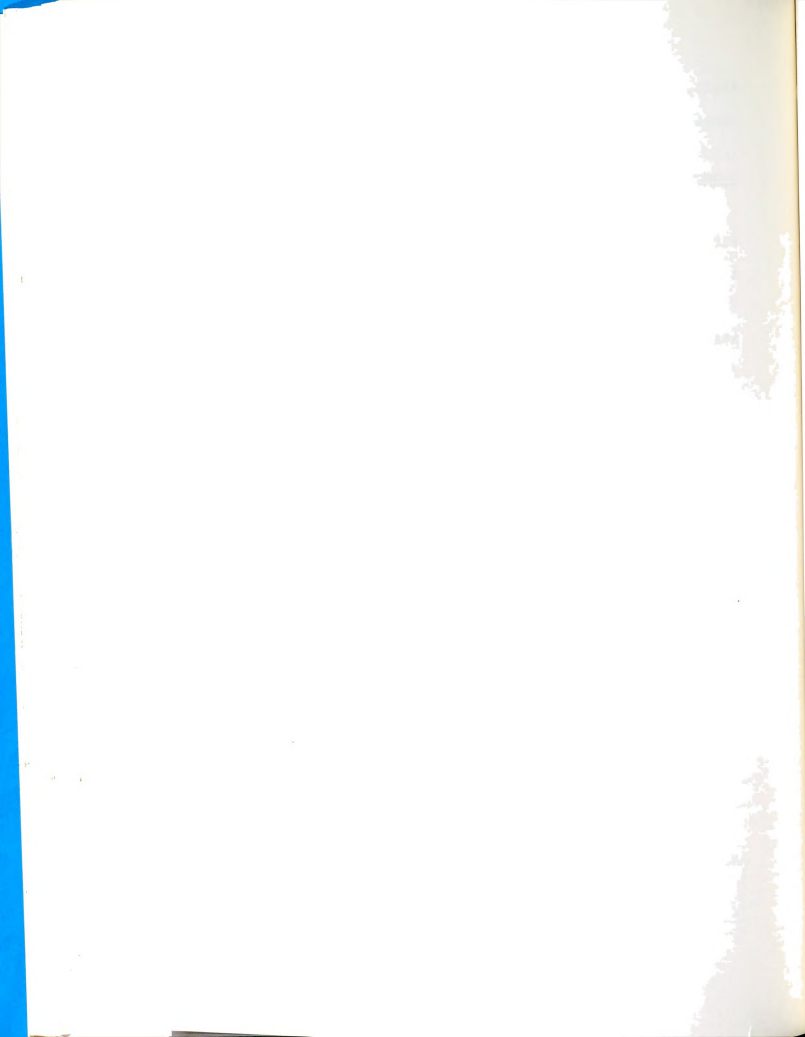
Summation

A four-by-eight matrix was used to identify 192 possible statements for use in the test instrument. A pretest of ninety-six statements was developed.

The Kuder-Richardson reliability on the ninety-six statement pretest administered to fifty-four subjects was .96.

The summated rating method was used to reject test statements. T-scores of less than 1.67, 54 subjects on a statement, led to rejection of the statement. The reliability of the fifty-seven item reconstructed test was .93. This test instrument was used to measure industrial education teacher attitudes.

Reliability for the seventy-two item test instrument, based on 135 response sheets, was .93.



CHAPTER V

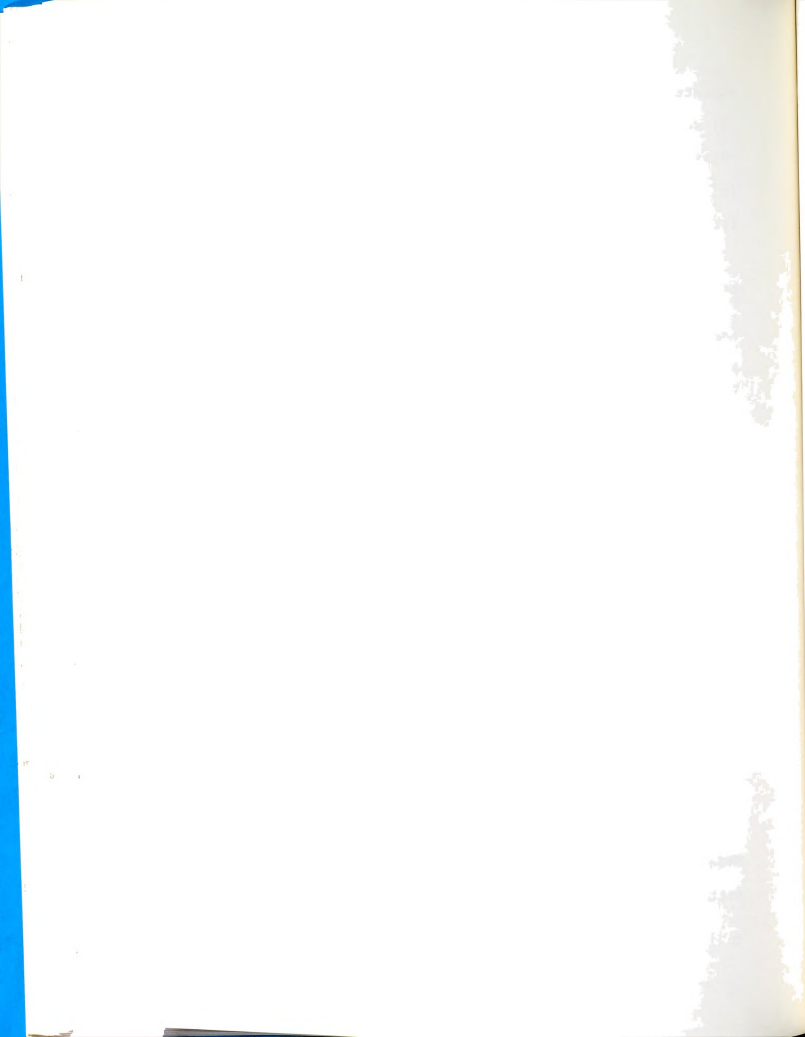
ANALYSIS OF THE DATA

A multivariate analysis of variance, Rao approximate F test, was used to analyze the data from the composite test instrument for each of the variables and the main effect. A univariate, one-way analysis of variance, was used in analysis of each of the subcategories of the test instrument.

Multivariate tests on the variables (1) size of the school in which the individual teaches, (2) number of years of teaching experience, (3) age of the teacher, (4) those having taught and left the profession and later returned, (5) number of moves in the profession, and (6) attitudes of industrial arts teachers as compared to vocational education teachers are presented.

The purpose of this study was to compare professional attitudes of industrial education teachers who remain active in the profession to those who become out-mobile. The result of this analysis is included.

Univariate tests, one-way analysis of variance, were made on the eight subcategories of the test instrument for each of the six variables and the main effect. The eight



subcategories are these: (1) economic worth and wages paid, (2) work requirements of teaching, (3) community role, (4) relations with administrators, (5) relations with students, (6) opportunity for professional advancement, (7) capabilities as a teacher, and (8) professional satisfaction.

Hypotheses are given as null and alternative. Rejection of the null hypotheses was at the .01 and .05 level. Acceptance of the alternative hypothesis indicates that possible differences do exist between attitudes of teachers in the different levels of the variables or the main effect. Alternative hypotheses are non-directional.

Multivariate Analysis

The F ratios for the six variables and main effect are presented in Table 5.1. Significance was found for age and out-mobility. Age was significant at the .05 level. Rejection of the null hypothesis was accomplished. The alternative hypothesis, that age does affect the responses to the total test instrument, was accepted.¹

The F ratio for out-mobiles and actives is significant at the .01 level. Hypotheses for the main effect were:

H_0 : There is no significant difference in the attitudes of out-mobiles as compared to

¹Hypotheses for the six variables have not been written, assuming that the reader would be able to construct workable hypotheses for variables. Rejection of a null indicates possible differences in attitude.

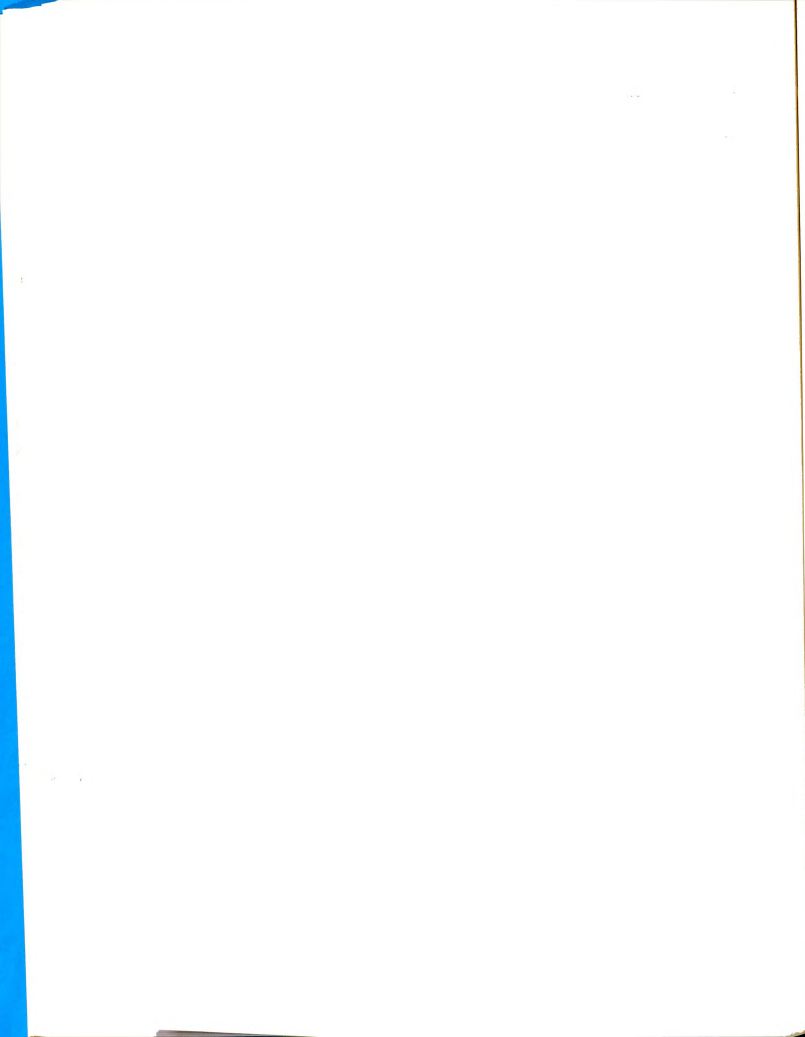


TABLE 5.1.--Rao approximate F for the multivariate analysis of variables and main effect.

VARIABLES AND MAIN	F	P	df _b	df _w	SIG
Population size	1.01	0.45	24	360	N.S.
Ind. Art-Voc. Ed.	1.64	0.12	8	126	N.S.
Moves	0.82	0.74	32	455	N.S.
Experience	1.15	0.25	32	455	N.S.
Age	1.53	0.03	32	455	S.*
Out-Returned	0.32	0.96	8	126	N.S.
Out-Mobile	2.78	0.01	8	126	S.**

Legend: * Significant at the .05 level.

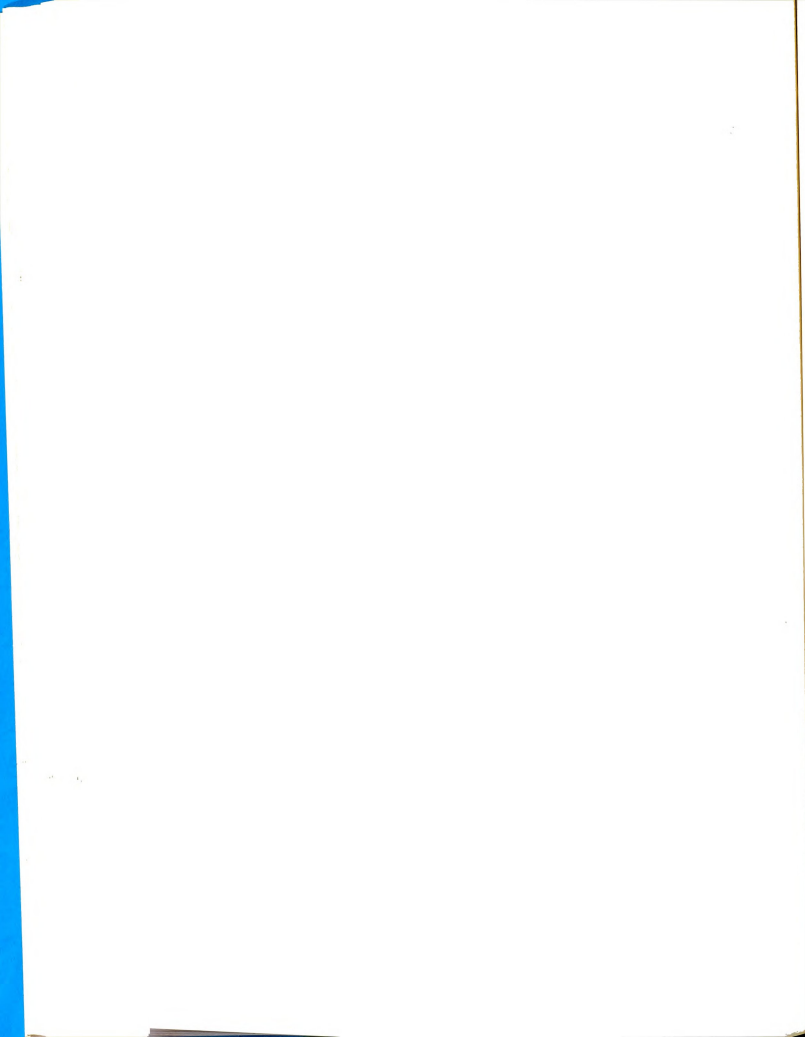
** Significant at the .01 level.

active industrial education teachers as measured by the attitude test instrument.

H_1 : Attitudes of out-mobiles do differ significantly from active industrial education teachers as measured by the test instrument.

Rejection of the null hypothesis was accomplished. The alternative hypothesis, that significant differences of attitudes exist between out-mobiles and active industrial education teachers as measured by the test instrument, was accepted.

The F ratios for the multivariate test of the remaining variables were not found significant at the .01 or .05 level. No additional consideration of these variables was made.



The significance of the variable age and the main effect of out-mobility necessitates an examination for possible interaction.

Test for Interaction

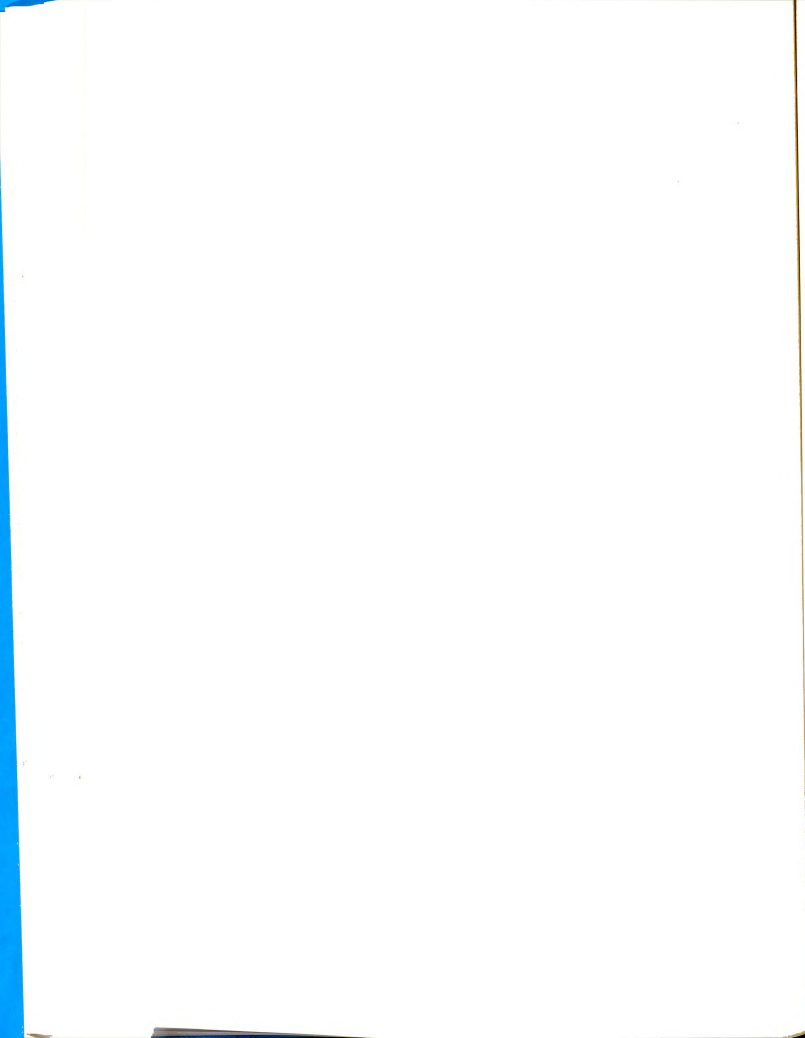
A Rao approximate F test was computed for a two-by-five interaction matrix. Composites of the matrix were out-mobiles and actives for columns and the five levels of age groupings for rows.

Result of the test was (Table 5.2) that the Multivariate F ratio of 1.45 was not significant at the .05 level. This means that a significant degree of interaction between the age levels and out-mobile and active teachers did not occur.

TABLE 5.2.--Rao approximate F for multivariate analysis of interaction between main effect, active and out-mobiles, and one variable, age.

INTERACTION	F	P	df _b	df _w	SIG
Out-mobiles and active teachers to age	1.45	0.12	16	250	N.S.

Source tables for the univariate test for interaction of the eight subcategories of the test instrument for age and main effect are presented in Appendix D.8. Significant interaction was obtained for subtest 6, opportunity for professional advancement. This tends to indicate that



differences identified by the test instrument interact between age groupings and out-mobiles and actives in this subcategory.

Univariate Tests

The univariate F ratios for the main effect and the variable age are presented after a significant multivariate F was obtained. The remaining variables have not been presented in the text but are available in Appendix D for the reader's examination.

Univariate F Ratios for Age and Out-Mobiles

A univariate, one-way analysis of variance, was calculated for each of the subcategories of the test instrument. F ratios for the subcategories of the variable, age, and the main effect, out-mobile and active, (Table 5.3) are presented. Source tables are given for all variables and the main effect in Appendix D. 1 through D.7.²

The subcategory, number five, student relations, was significant at the .05 level for the variable, age. This indicates that the test instrument appears to have measured a difference in teacher attitudes relative to relations with students when teachers were grouped by age. This was the only significant F for the eight subcategories.

²A significant univariate F for economic worth and wages paid was obtained when active teachers were grouped by years of teaching experience. The multivariate F was not significant for this variable.

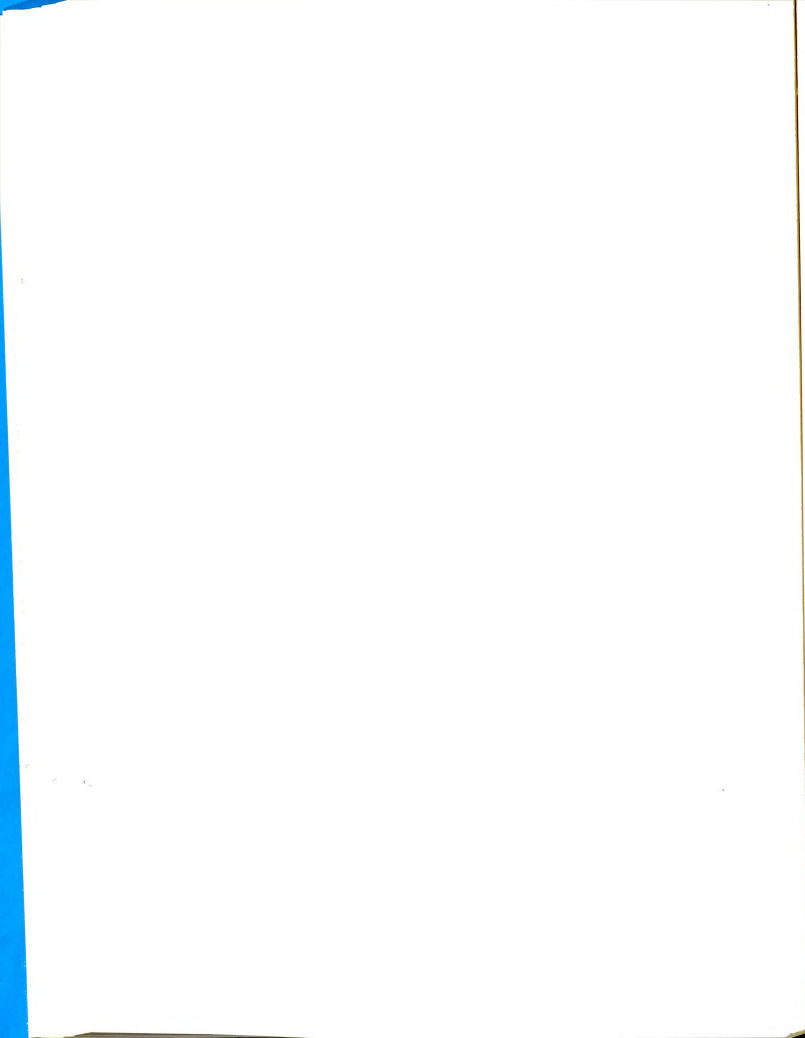


TABLE 5.3.--Univariate F ratios for subcategories for the variable, age, and main effect after a significant multivariate F.

Sub-Category	Age					Main				
	df _b	df _w	df _t	F	SIG	df _b	df _w	df _t	F	SIG
1	4	130	134	1.32		1	133	134	2.90	
2	4	130	134	2.42		1	133	134	1.80	
3	4	130	134	2.17		1	133	134	0.56	
4	4	130	134	2.37		1	133	134	0.39	
5	4	130	134	3.73	*	1	133	134	0.40	
6	4	130	134	1.74		1	133	134	5.83	**
7	4	130	134	0.35		1	133	134	1.31	
8	4	130	134	1.51		1	133	134	2.51	

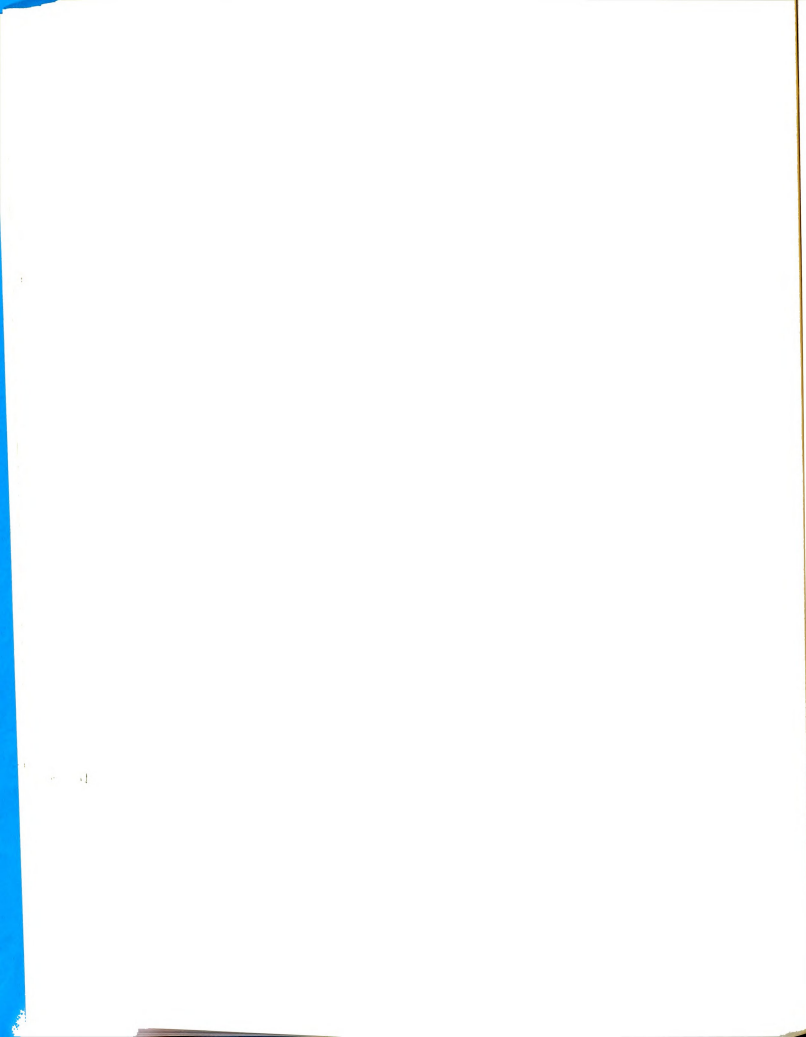
Legend: Subcategories of the test instrument were these: 1=economic worth and wage paid; 2=work requirement; 3=community role; 4=administrative relations; 5=student relations; 6=opportunity for professional advancement; 7=teacher capabilities; 8=professional status.

*Significant at the .01 level

**Significant at the .05 level

The univariate F ratio for subcategory six, opportunity for professional advancement and for main effect, was significant at the .01 level. Hypotheses were:

H₀: There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their opportunity for professional advancement.



H₁: Differences exist in attitudes of out-mobiles as compared to active industrial education teachers toward their opportunity for professional advancement.

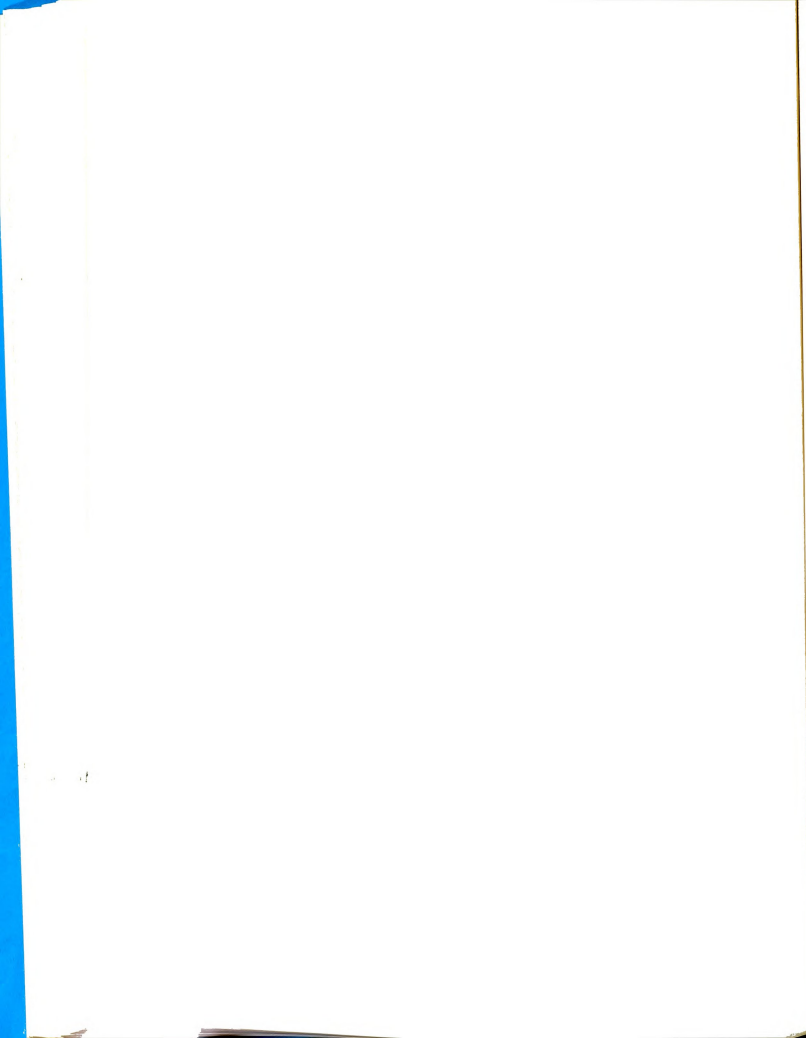
Rejection of the null hypothesis was accomplished. The alternative hypothesis was accepted. Subcategory six had significant interaction when compared by age and main effect.

Summation

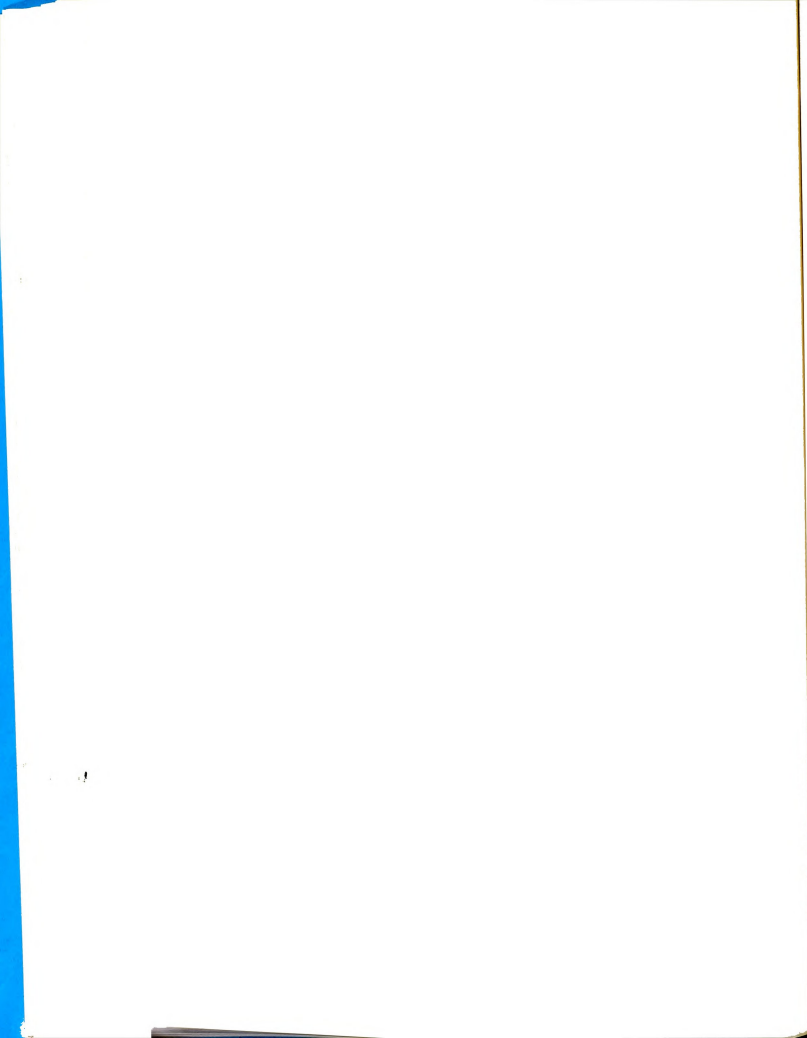
The Rao approximate F test for the main effect, attitudes of out-mobiles compared to active teachers, was found significant at the .01 level. The multivariate F test for the variable, age, was found significant at the .05 level. The significance of these two, main effect and the variable age, necessitated a test for interaction.

The Rao approximate F test for interaction of age, out-mobiles and active teachers was not found significant at the .05 level. Based on these results, it was concluded that significant interaction was not present.

The univariate F ratio for subcategory six, professional opportunity for advancement, was found significant in the test for interaction. This would tend to indicate that age of participant and out-mobiles and active teachers do interact in the subcategory.



The subcategory of student relationships was found significant at the .05 level when the data was examined by age level. This was the only subcategory having significance after the multivariate F was found significant.



CHAPTER VI

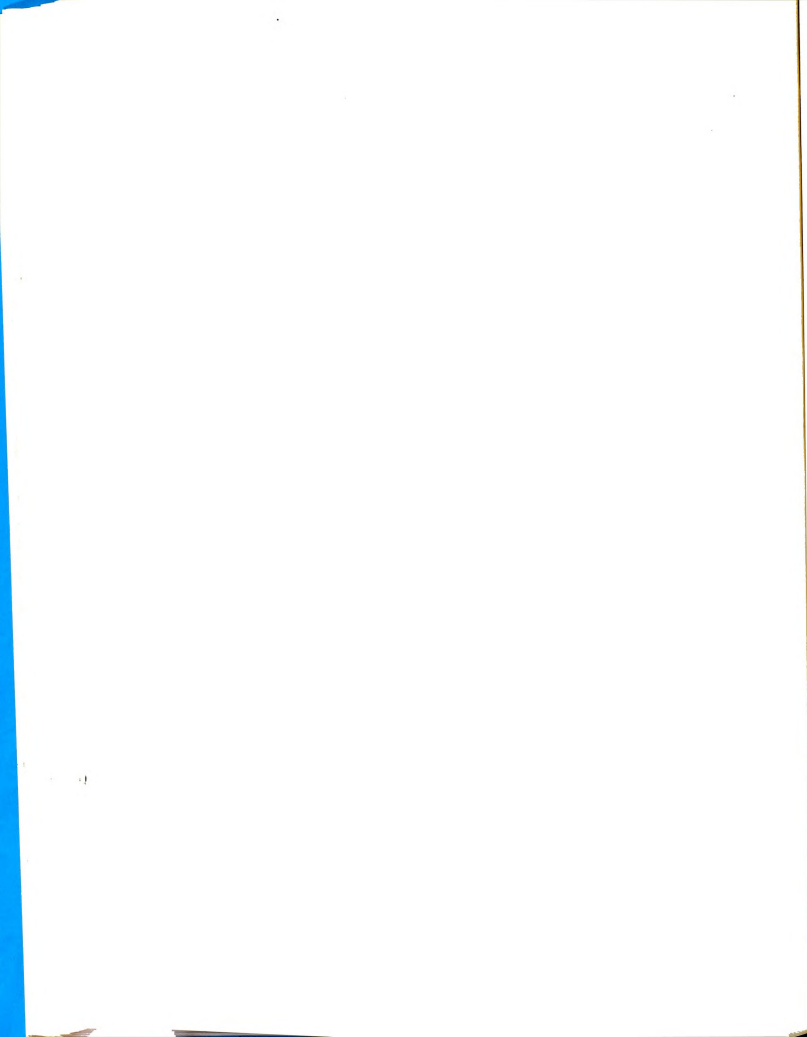
CHARACTERISTICS AND INTERVIEWS OF OUT-MOBILES

Characteristics of industrial education teachers who remain in the teaching profession as compared to the out-mobiles are presented by graphs. Information was compiled from returned data sheets for age, experience, and number of moves.

Graphs are used to depict: (1) age of active industrial education teachers, secondary men teachers in the state of Michigan, and out-mobiles, (2) teaching experience in years for active teachers, secondary men teachers in the state, and out-mobiles, (3) number of moves made by active teachers, secondary men teachers in the state, and out-mobiles. Data for the secondary men teachers in the state of Michigan was obtained from The Michigan Public-School Teacher 1965-66.¹

Interviews with out-mobiles include reasons given by them for making the decision to leave the profession.

¹Michigan Education Association, The Michigan Public School Teacher, 1965-1966 (A cooperative study on the Michigan Teacher done in conjunction with the Research Division of the National Education Association. East Lansing: Michigan Education Association, 1967), pp. 16-17.



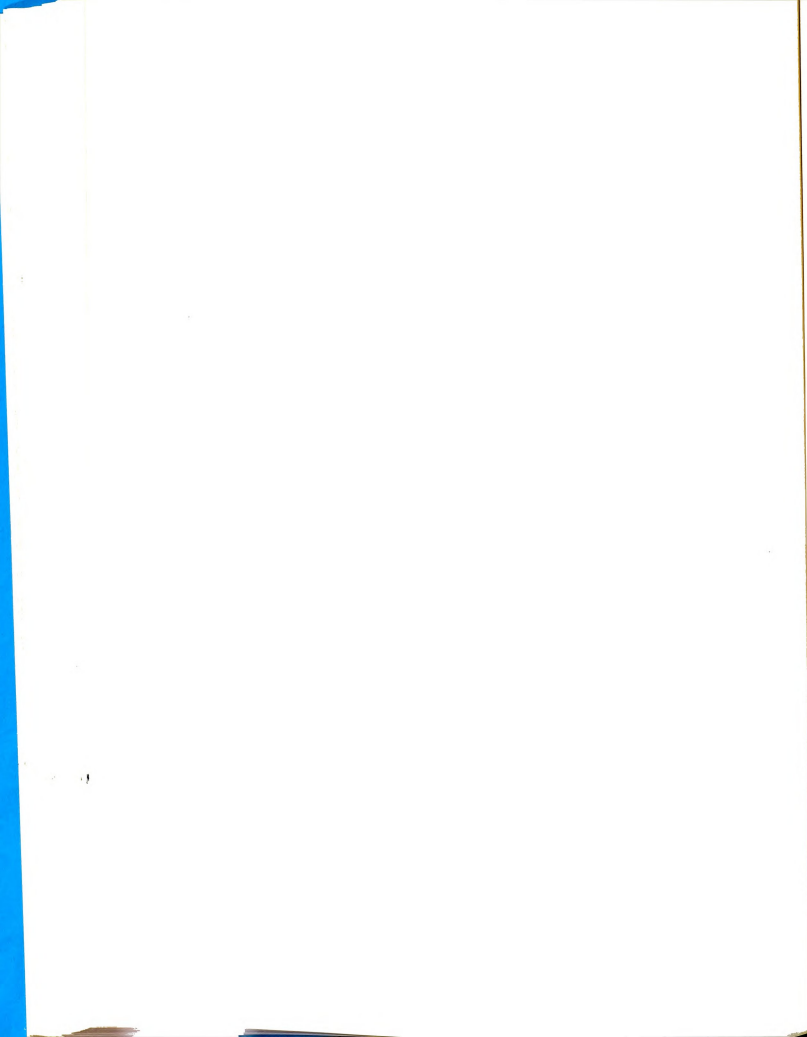
Interviews were made via telephone. They were conducted after active teachers had declared their intent to leave the profession on the follow-up. Summation of the interviews from eight of the ten out-mobiles has been made in these categories: (1) how out-mobiles feel about teaching, (2) teacher status, (3) professional opportunity for advancement, (4) relations with administrators, (5) relations with students, (6) role in the community, (7) work requirements, (8) salary, (9) reasons for leaving the profession, and (10) projected employment in five to ten years.

Comparative Characteristics

Age of Out-Mobiles and Active Teachers

The age of out-mobiles as compared to active industrial education teachers and secondary men teachers in the state of Michigan (Figure 6.1) is presented by use of a frequency polygon. The graph line for active teachers was based on 126 returned usable data sheets. Nine out-mobiles represent the out-mobile graph line.

Ages of active teachers range from twenty-two years to sixty-three years. Out-mobiles range in age from twenty-four years to sixty-two years. Discounting an atypical sixty-two year old, the range was from twenty-four to forty-five.



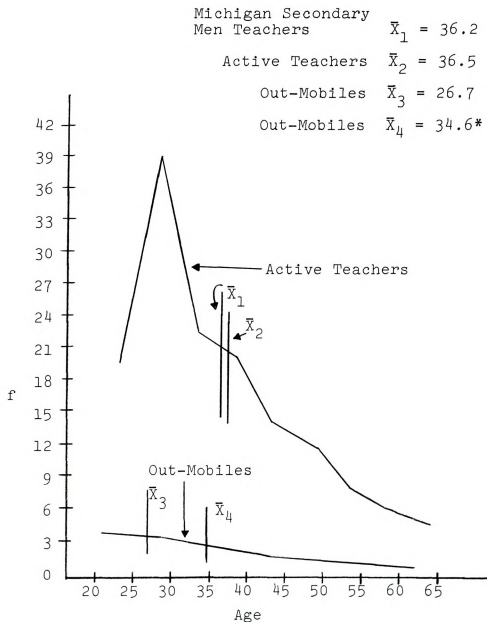
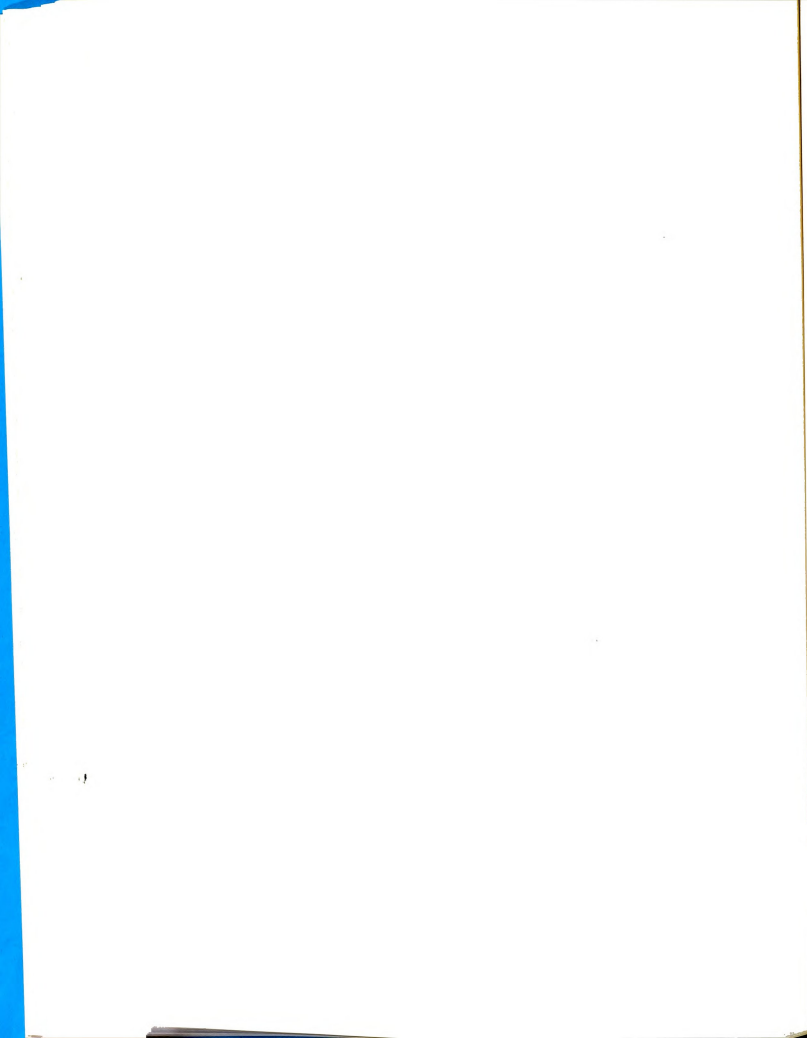


Figure 6.1.--Age Distribution of Out-Mobiles and Active Industrial Education Teachers.

*The mean has been calculated with the atypical sixty-two year old member included.



The mean age for men secondary teachers in the state was 36.2 in a 1965-66 study. The mean age of active industrial education teachers was 36.5 for this study. Out-mobiles' mean age was 26.7, discounting the atypical sixty-two years. Including this exception, the mean age was 34.6 years.

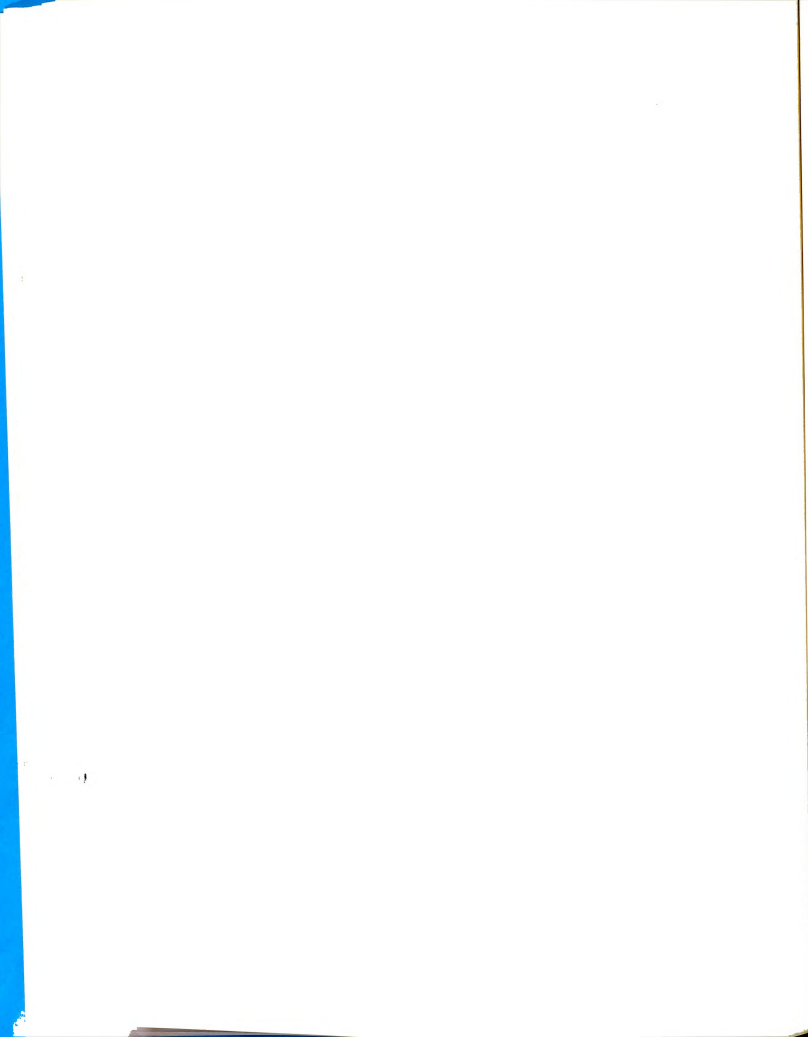
Experience of Out-Mobiles and Active Teachers

The number of years of teaching experience of out-mobiles as compared to active teachers and men secondary teachers in the state (Figure 6.2) are graphed. Data was based on a sample of 126 active industrial education teachers and nine out-mobiles.

The number of years of teaching experience for active teachers ranges from one to forty-four years. Out-mobiles have taught from one to fifteen years excluding the atypical case of forty-four years. The mean number of teaching years for secondary men in the state was 7.7 years. Industrial education teachers have an average of 9.1 years teaching experience. Out-mobiles have a mean average of 4.7 teaching years; including the atypical case of forty-four years, the mean was 9.8 teaching years.

Moves in the Profession

The number of moves made by teachers in the profession as compared to out-mobiles (Figure 6.3 page 104) is graphed. Active teachers are graphed, based on a



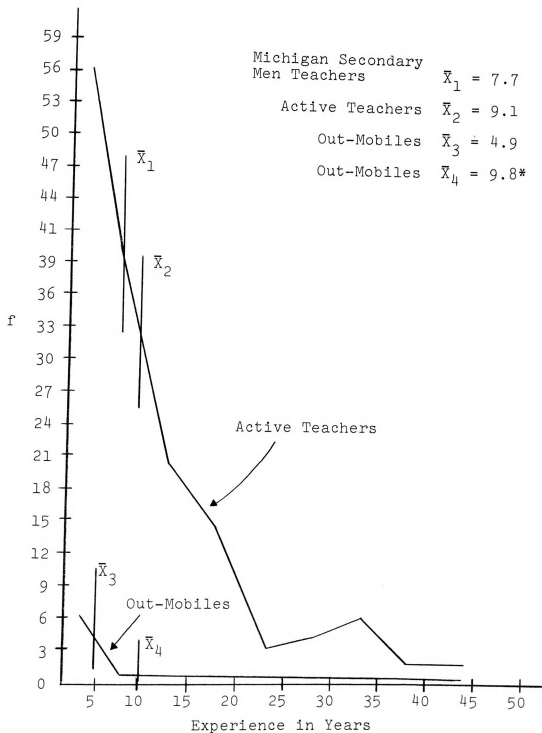
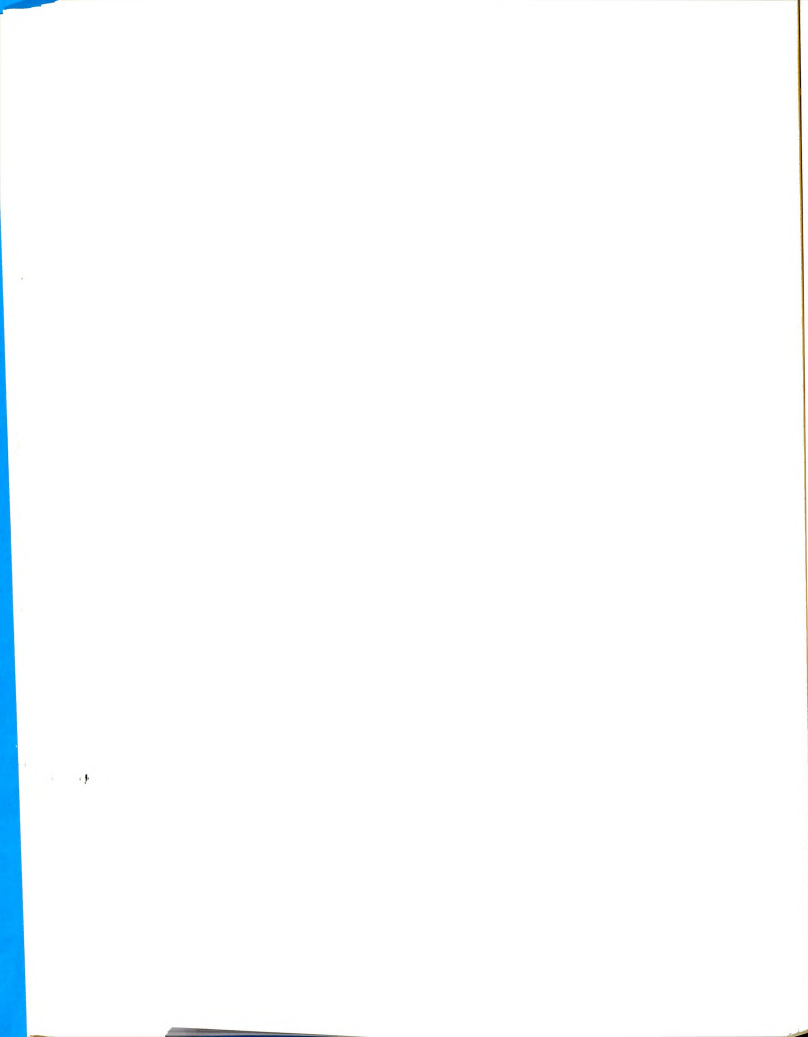


Figure 6.2.--Experience Distribution of Out-Mobile and Active Industrial Education Teachers

*The mean was calculated with an atypical out-mobile having had forty-four years of experience.



sample return of 126, and out-mobiles are represented by nine members.

The range of moves for active teachers was from zero to six. Out-mobiles had moved from zero to four times. The mean number of moves for secondary men teachers in the state was 2.0 moves. Active teachers have moved on the average of 1.2 times which is the same as the average number of moves by out-mobiles.

Interviews with Out-Mobiles

Identification of out-mobile industrial education teachers was made by a follow-up survey. Those teachers indicating out-mobility were interviewed by telephone. Responses to open-end statements were recorded for seven of the ten out-mobiles.²

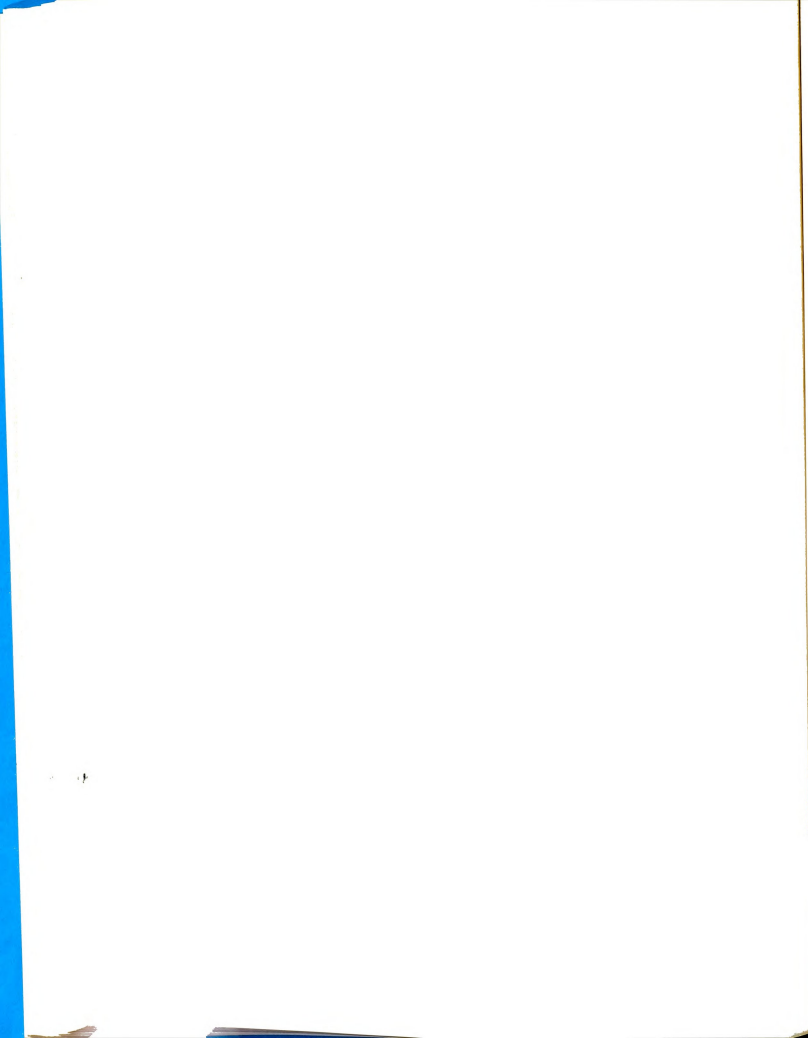
How Out-Mobiles Feel When Teaching

Out-mobiles indicated the feelings they experience while teaching.

- (1) When teaching in the classroom, I feel . . .

Teaching lacks a challenge; it is not very stimulating to me.

²Three of the out-mobiles were not located for an interview. Reasons for not locating them were: (1) unable to obtain a telephone listing, (2) the designate had recently changed location and was no longer residing at the given address, and (3) a late return of the check sheet indicating out-mobility.



I get along fine with the kids, but once in a while a "blockhead" comes along. I had been active in the scouts prior to the time I began teaching.

It's good if the conditions in which I teach are O. K.

I like teaching; personally, I found it quite satisfying. I would like to teach mathematics. The classroom environment more readily fits schools than do shops.

I like teaching. Possibly I would enjoy vocational carpentry or conservation.

The problem is that students aren't interested. The majority don't care. They have no interest or no motivation. What will we do?

- (2) Teaching is the type of work which I . . .

The work gives me considerable anxiety and frustration. Teaching is what I want to do. The difficulty is to get much success.

I have found teaching to be enjoyable.

I have liked teaching really well.

I have enjoyed teaching overall.

I would like to teach electronics.

It's the best job. The courses are wrong for the degree.

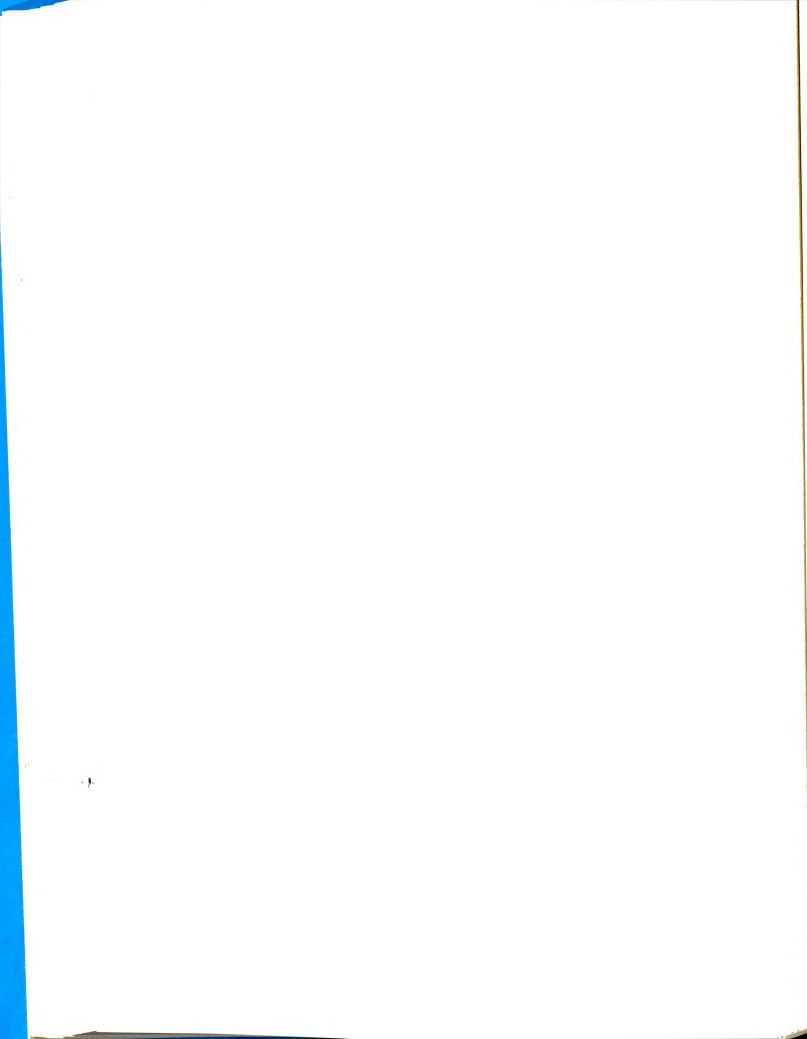
- (3) My abilities as a teacher are . . .

I receive feedback from students when we . . . that says I did O. K.

Excellent, especially in general shop and in electronics. I had no preparation to teach in the metal shop, just two courses.

Pretty good. . . I'm somewhat egotistical and have a quick temper, but this helped me limit the amount of discipline in the classroom.

Better than average as a teacher.



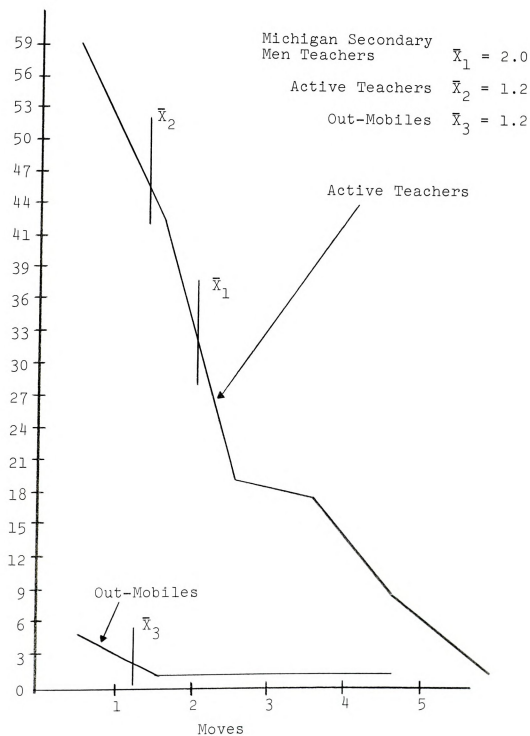
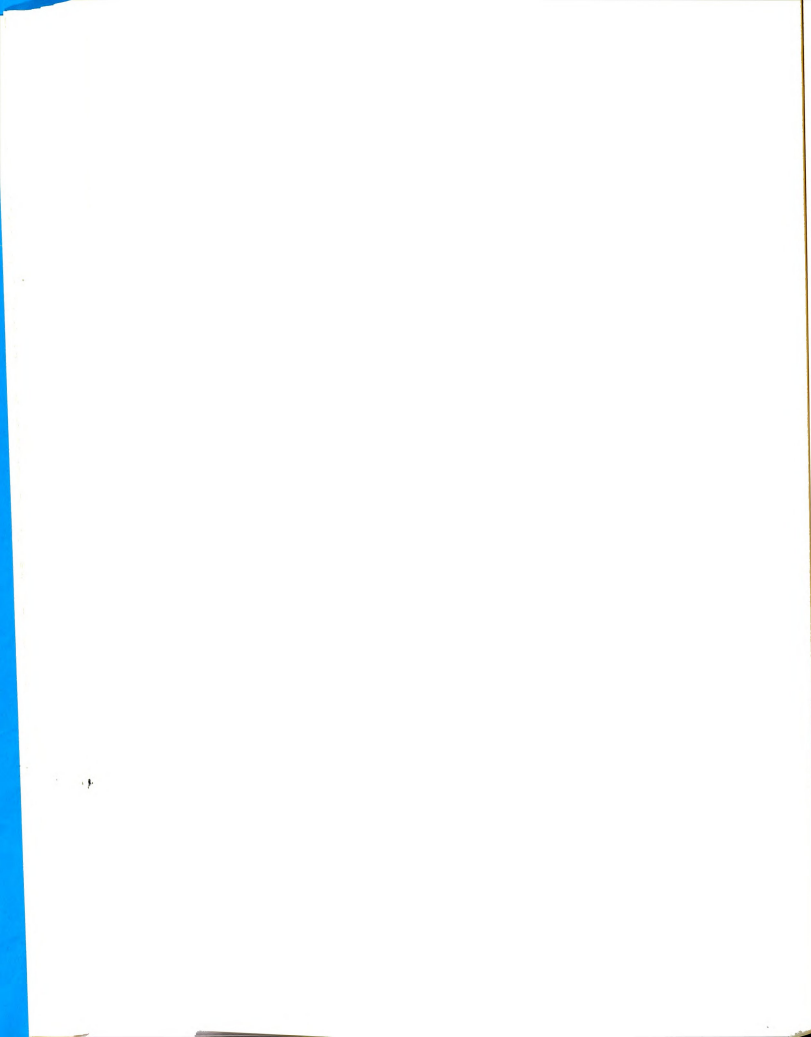


Figure 6.3.--Move Distribution of Out-Mobiles and Active Industrial Education Teachers.



I have received very high recommendations from the administration. I think I'm good with kids. I have good control.

The only reasons I would stay in education is to coach. Coaching is my real interest.

My teaching level is high.

- (4) I think of myself as being involved in . . .

I was highly involved in the beginning of the year but less towards the end.

I've been very involved in driver training. I've been involved in negotiation. Compensation for this involvement is not a factor.

I work seven or eight hours per day. I never work at night or put in any extra time.

Very much involved, especially after I had taught a few years. It's really true; the more involved I became, the better job I did; and, the more kids I helped.

I don't want to be involved in any committee work. I'm not involved in teaching to the extent I desire. I wanted to teach driver education and be an assistant coach.

I was, earlier in my career. Now, it's just a job. Some of my best friends are found in other positions.

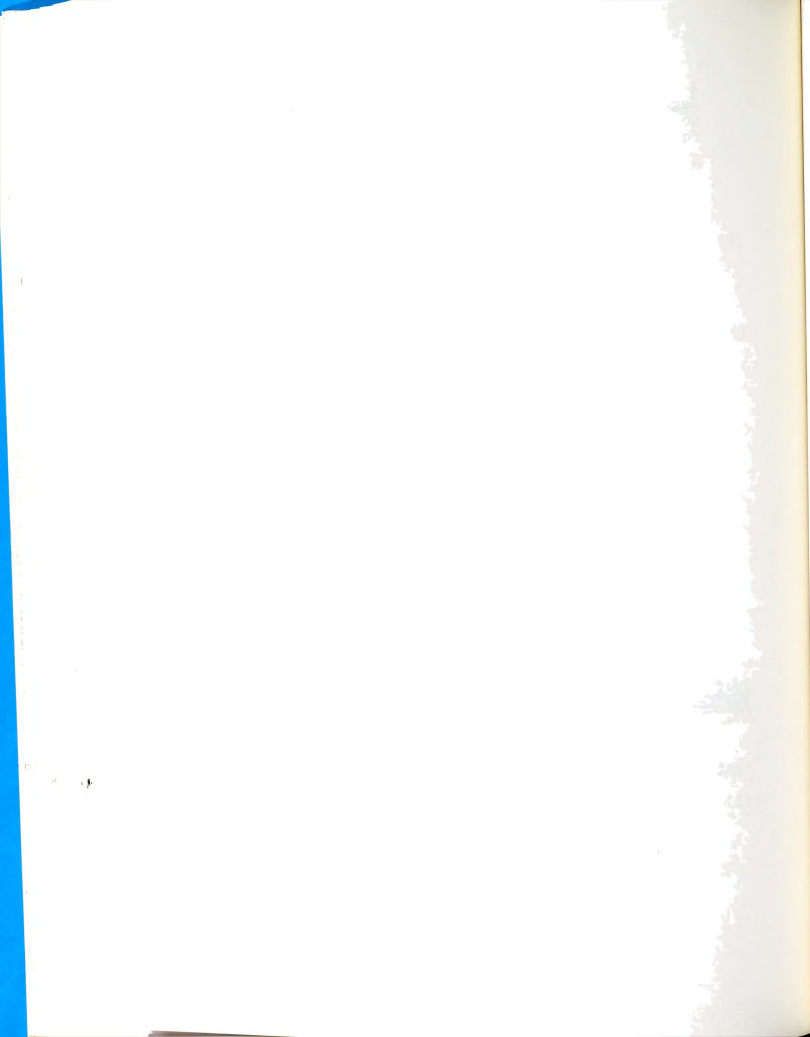
Professional Opportunities for Advancement

Out-mobiles expressed their perceptions on opportunities for advancement.

- (1) I think my opportunities for advancement are . . .

I don't want another position. I don't want any additional responsibilities.

None . . . no place to go . . . I don't want to stick in the classroom for another thirty years.



I don't see a definite job to work towards. A degree doesn't seem to be the answer in terms of money and time without any assurance of some return.

Very poor . . . No acceptance of experience is made in steps towards advancement. The only criteria used for advancement is a degree. The background which one has is of no importance.

No . . . I don't want to stay in my present position. The best I could do here is become department head.

I have no desire to advance in education.

- (2) If I were to remain in education I would want to . . .

The only reason I would remain in education would be to move up in coaching.

I would want to teach in a junior college.

I would remain a shop teacher. I might also want to work in the boy's correction school; I enjoyed it there before.

I would still be a vocational machine shop teacher or industrial arts teacher.

I would like to work in programming of classes. I might also like to be a curriculum director of a large school system.

If the conditions were the same as they were before, I would like to remain in teaching.

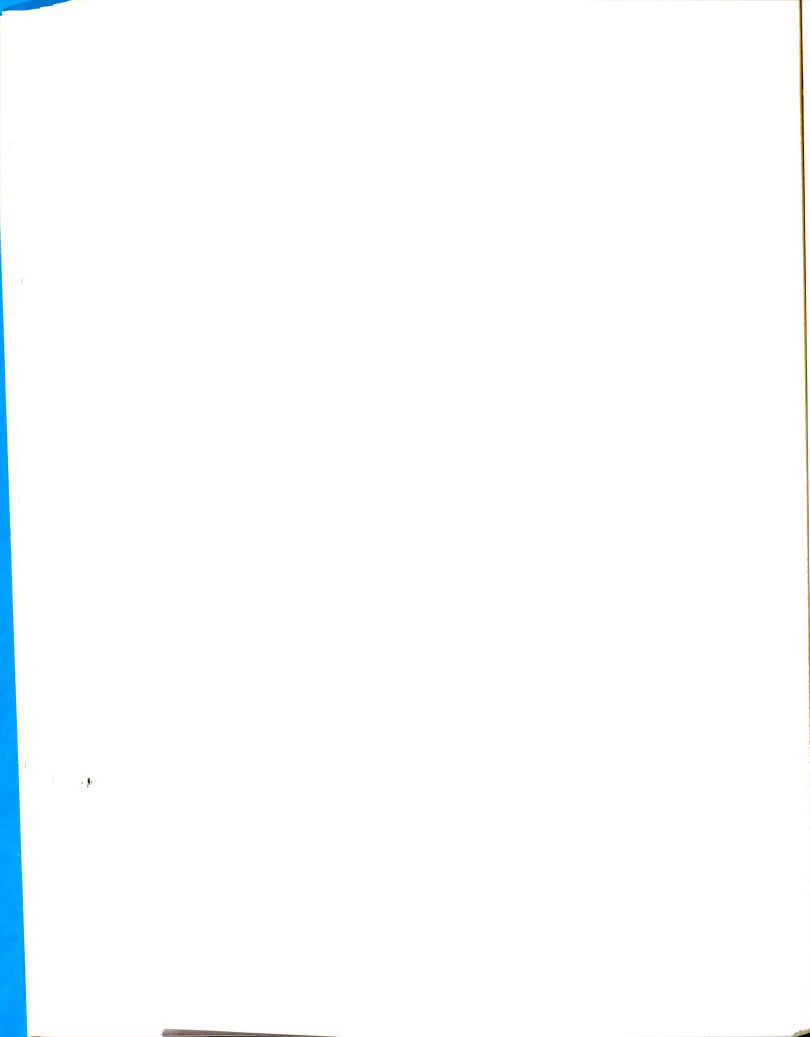
My Status in the Teaching Profession

Out-mobiles indicated their views of status in the teaching profession.

- (1) I think the faculty thought of me as . . .

They are a good bunch. Years ago I knew them all. Now, there are too many, and the school is too big.

They seemed to feel good towards me. I got along well. I had only one conflict and that was with



the department chairman. He's been in that position for seventeen years.

They treated me as an equal, the same as the others. When I first began there was some resentment because I was paid more than the others. This was due to the shortage of industrial arts teachers.

They felt superior up to the time they needed some help. They treated me like a day laborer. After helping them, they treated me as an equal.

They thought of me as being quite good; we didn't have good high school relations.

I felt I was well accepted by the staff.

The feeling in the staff was good.

- (2) I think of my status as a teacher as . . .

Excellent!

Teachers aren't looked up to as teachers. I didn't have any status as a teacher, but the community looked up to me as a winning coach.

Locally, we are viewed as less than adequate. The administration dislikes us. Academics are what is important.

I'm accepted after people understand what I'm doing. The community feels accepting towards us.

The community I'm in now thinks of us as being quite high. The other community I was in . . . we were average or less.

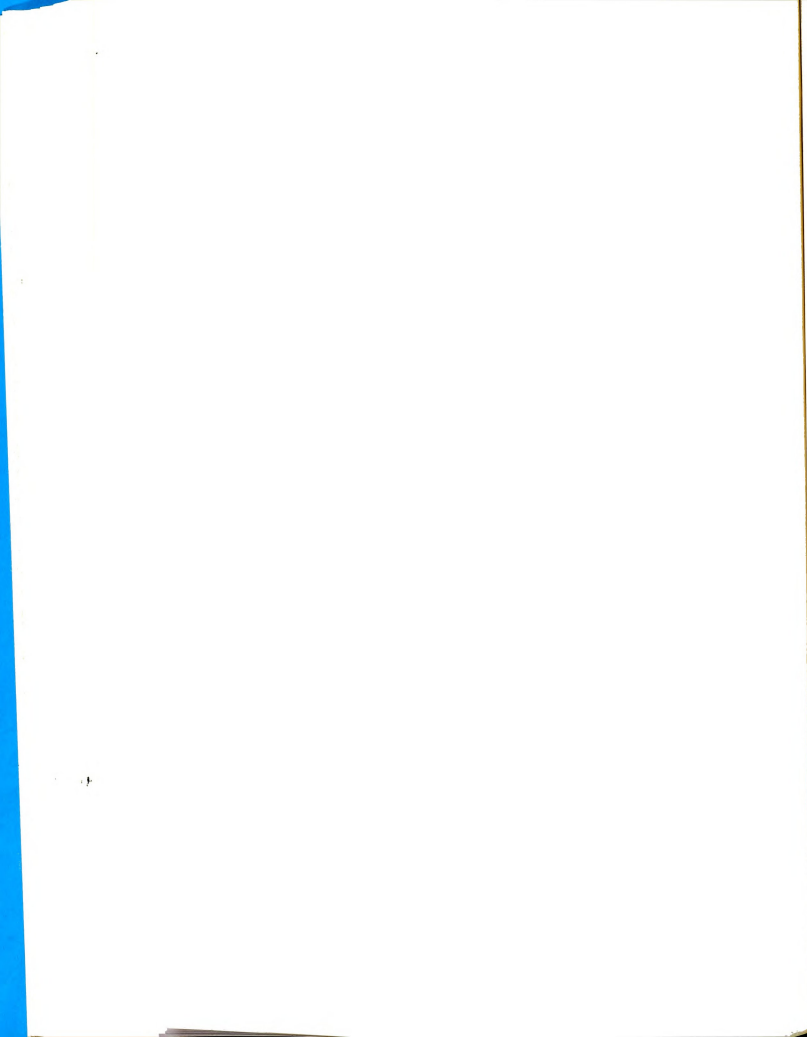
I think we are thought of as being quite high status.

Relations with Administrators

Out-mobiles expressed their attitudes about their relationships with the administrators.

- (1) I think administrators in my school are . . .

The top administrators are not helpful. Department heads are helpful. One top administrator did me lots of dirt. They still owe me \$103.00 for sick leave.



We have good administrators. They could be of help in curriculum control. The superintendent gives the public the wrong information. This information is not always true. We need programs in remedial reading, special education, music, and physical education. Industrial arts has been cut out of the money.

I'm satisfied. He tries too hard to do everything right all of the time.

He _____! It took twenty-seven weeks to get a textbook, thirty weeks to get tooling, thirty-eight weeks for shop coats. We get no financial or social support.

They are academically oriented. They dislike industrial arts and home economics. The principal has favorite teachers with whom he gets along. The superintendent is getting along in retirement form. Basically, they are good.

The administration is good.

- (2) I needed from the administration . . .

They gave me adequate assistance.

I don't know what it would be.

They don't want to update the program. The equipment is not adequate to run the program. They can't take the wave I produce.

They are fine.

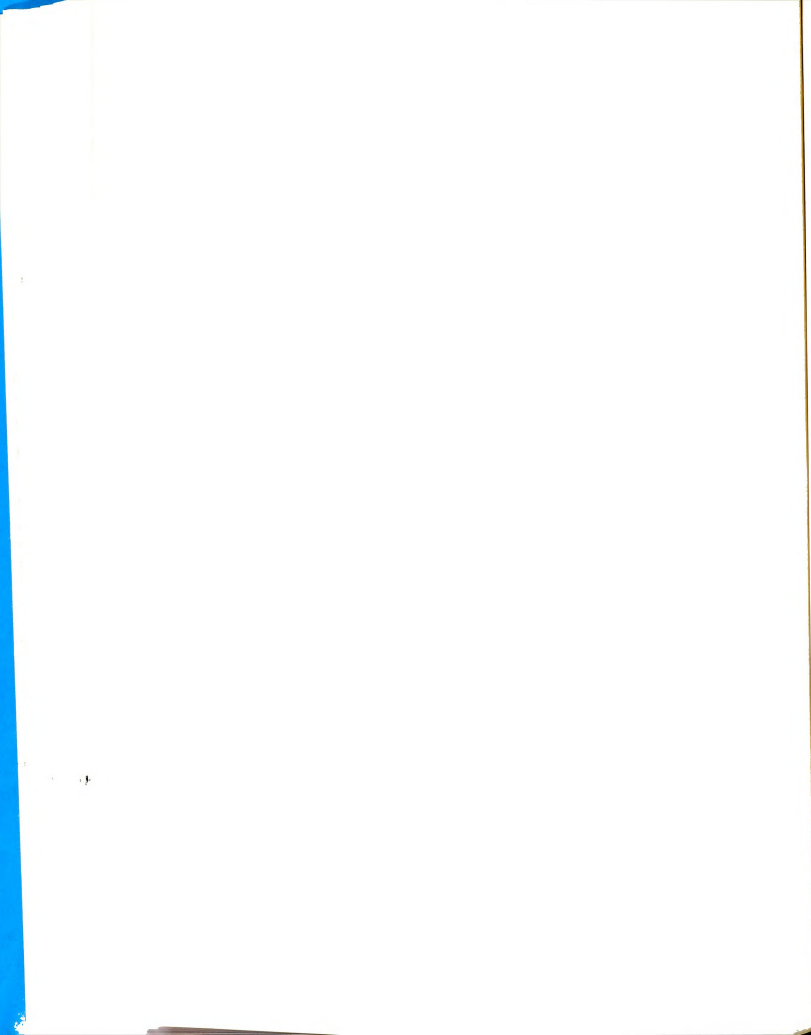
Relations with Students

The out-mobiles discussed their relationships with students.

- (1) I think of the students I taught as . . .

I think overall the students are good.

They are below average for the high school. About two out of seventeen to twenty-eight will go to



college. Most of our students are not going to college.

I like working with boys. I had some experience with boy's clubs prior to beginning teaching.

They felt much as I do that the administration has not given adequate support to give us facilities to do a real job in the school.

I think some of the students are good. Some are trouble kinds. The low I.Q. group cause some trouble in class because they lack interest.

I had all types; some good, some bad. I was able to get along with them all.

The majority of them are not interested in school. They don't care about anything I teach. They never pay any attention.

- (2) The subject I taught the students was . . .

It's the best thing for the students. Fifty per cent or more will work in industry.

The kids felt the content was good. We had a good text, good material; and, they understood what I was teaching.

The course was for both seventh and eighth grade. They liked me for being strict and making them do the work.

I was frustrated because I couldn't give what I desired to the course.

The subject is very important . . . more important than many other areas.

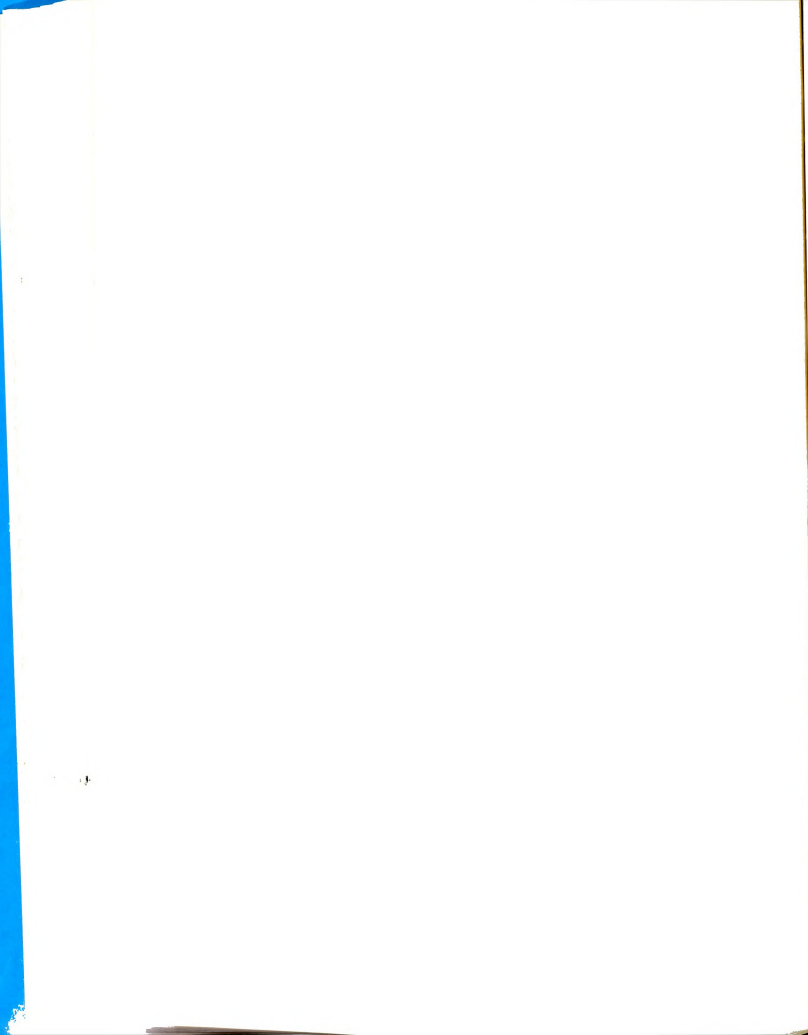
The subject is good for all students. We had limited facilities so only taught wood and some sheet metal.

The seventh and eighth grade lack interest in some of the subject. They have low motivation.

Community Role

Out-mobiles described their role in the community.

- (1) I felt my role in the community was . . .



Normal.

Hard to say . . . The area is quite negative towards education.

Industries are willing to help, but no one ever asks them. We got some supplies from local industries.

People liked me. They like what teachers have to say and they respect them. Teachers have more education than the rest.

Excellent . . . We intend to continue living right here.

The parents and the students are good to me.

- (2) I think the community felt I was . . .

They were pleased to have my assistance as a teacher. I had only one argument with a parent.

Excellent!

Acceptable.

They are hostile towards teachers. Teachers are responsible for too much action.

Teachers aren't looked up to. Religion isn't a factor.

I never lived in the community. I lived fifty-five miles away.

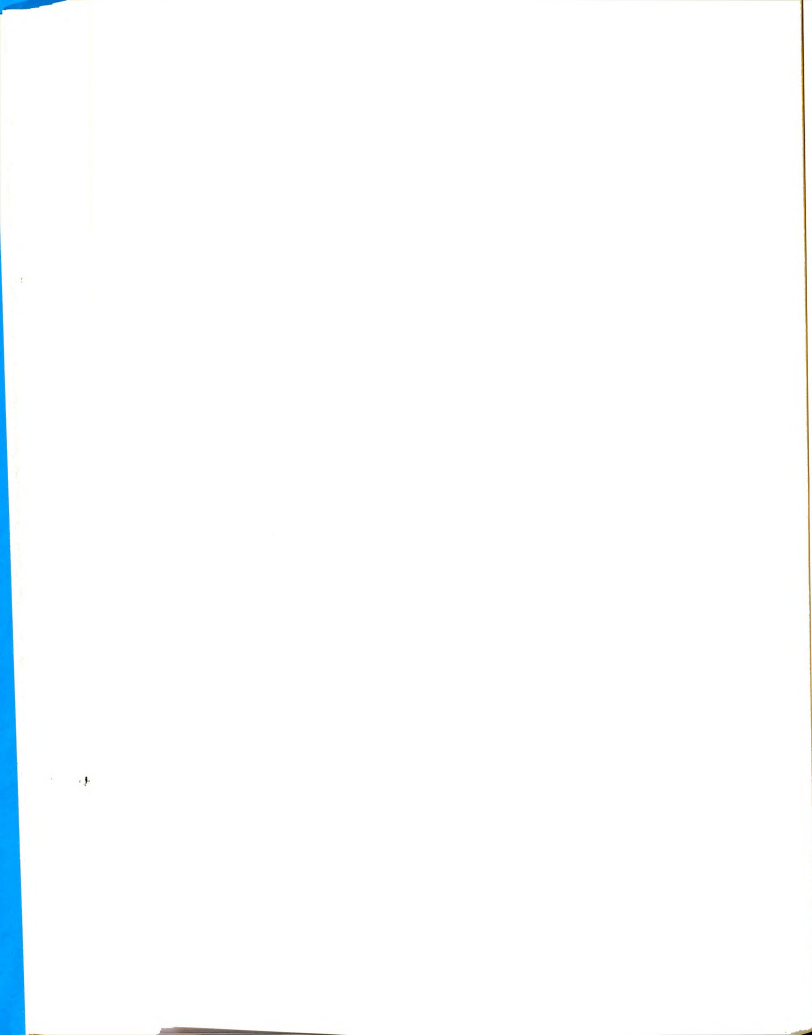
Work Required from a Teacher

Out-mobiles related their attitudes on work requirements during the interviews.

- (1) I thought the work required from me as a teacher was . . .

The work involved too much time and capability for the amount of compensation.

The work was not very difficult. The volunteer help was very good. The only requirements which I had were teaching and an activity club.



The hour which I had to spend in hall duty was a waste of time for myself. The work load, otherwise, was only about average.

I would like to work more than just the nine months. If I could work enough in the summer to make \$2,000, teaching would be more satisfactory. I don't like the part-time jobs which I presently do during the summer.

The work load was no problem.

Work never bothered me.

Salary Paid me as
a Teacher

The out-mobiles conveyed their feelings about salaries during the interviews.

- (1) The wages paid me were . . .

The wages which are paid me are too low. It is one of the reasons why I am leaving.

I earned \$6,550 as a beginning teacher. This was about average for teachers in the state. It is a little low; the salary could be better.

The salary is too low.

The salary for this state is too low. They should carry sick leave from school system to school system. Michigan drops sick leave every time you move from one system to another system.

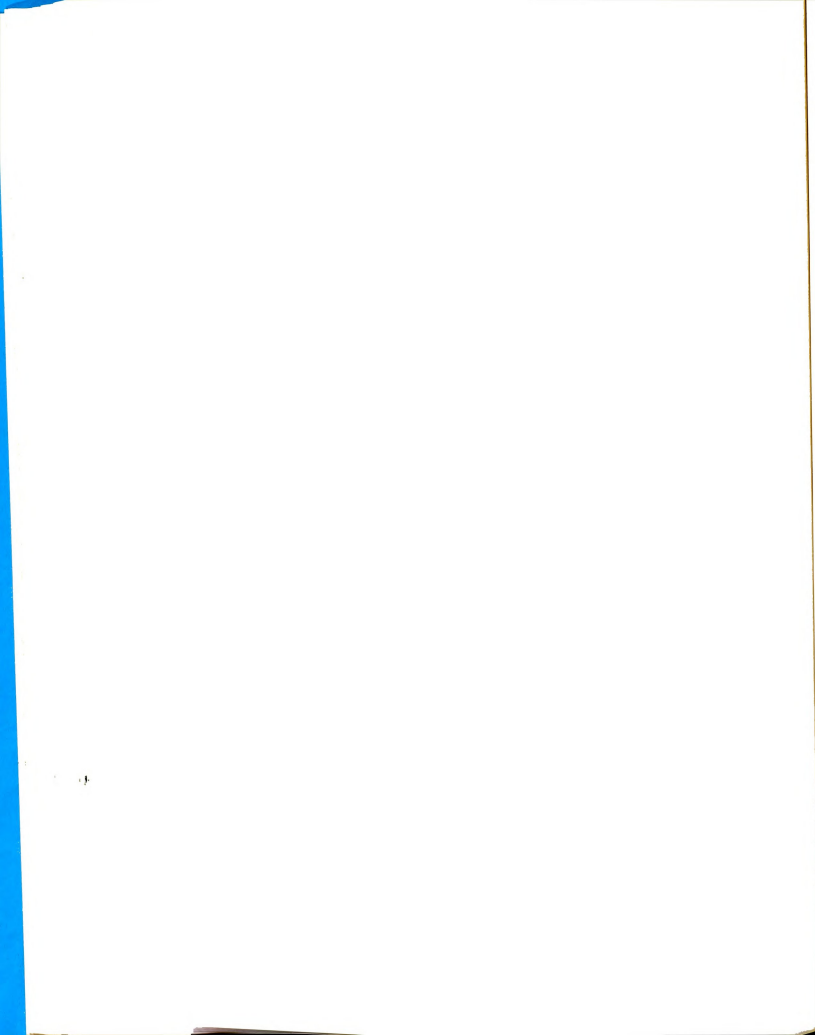
The wages are adequate.

The salary is too low. Industry pays much more for the type of abilities which I have.

The wages are satisfactory.

- (2) I think the relation between the wages paid me and those other people in the community were . . .

It is very difficult to determine. Seemingly, I earn more than most members of the community.



There is no comparable position to mine in the community.

The wages are adequate.

If the shop were up to standards, the school system would be up to standards; then, the school would be up to industry on wages based on the number of weeks of work. The amount of time spent the way it is would be \$16,000 to \$18,000 in industry. This is a deadend road.

The wages which I earn are probably high for the community.

We have a lot of General Motors workers in town, so I am probably average for the community.

The wages based on degrees which one has earned are not fair. Experience should determine wages for teachers in the community.

Reasons for Leaving the Profession

The main reasons for leaving the profession were stated by the out-mobiles.

(1) I think the main reason for my leaving teaching was . . .

I can't teach because of the discipline needed to control the kids. There is no way to control students anymore.

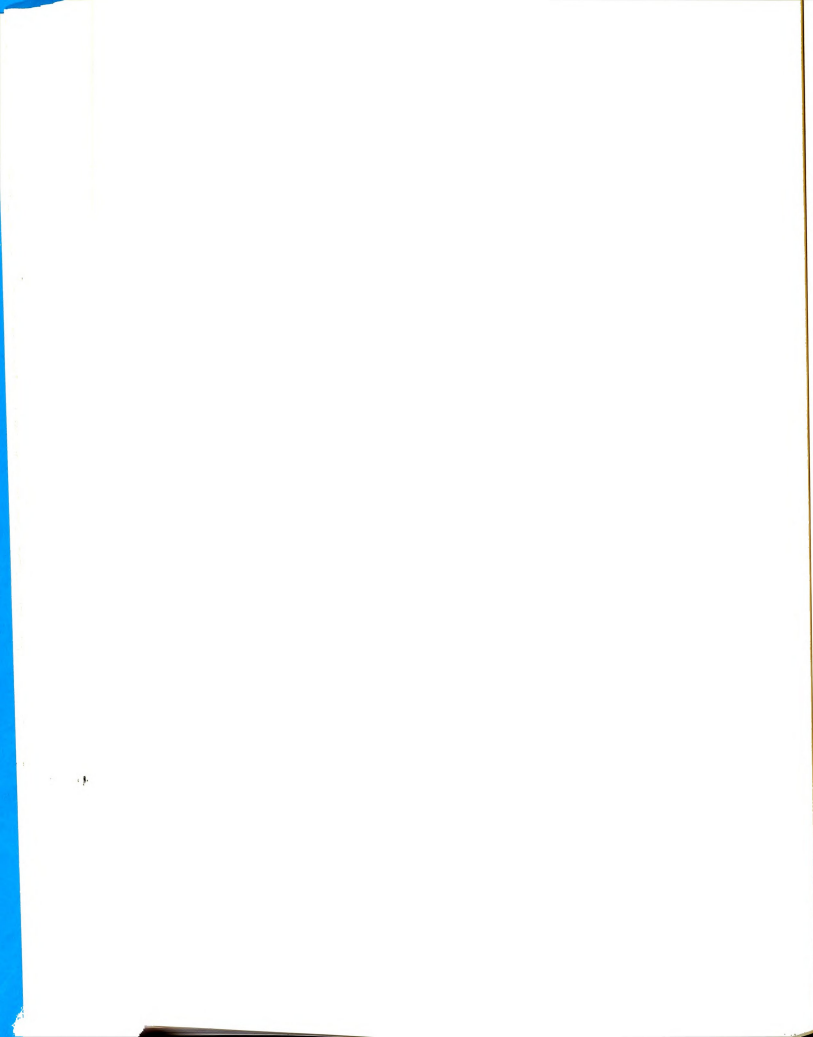
I wanted to go into industry before going into teaching. I don't really know how I got into teaching. I guess I just never made the decision to be a teacher or not.

I'm worth more than I'm getting paid.

The school is a false situation. I had a lot of frustration in teaching. The position forced me to lose a lot of my own integrity.

I don't like to wait for a millage passage to decide if I'm reemployable.

Salary is the main reason for my leaving.



The main reason I'm leaving is that life looks better on the other side.

Projected Employment in Five to Ten Years

Out-mobiles were asked to project themselves into the type of job they would have in the next five or ten years.

(1) I would like to (project yourself into the future). . .

I would like to sell real estate or be in land development. Buying and selling houses would be what I would like to do.

I would like to use my industrial arts background as a technician in industry or else physical education background in public recreation. I would like to associate with a large corporation. Otherwise, I would like to start home construction, remodeling, sales firm, or personal business.

I would like to be in the building construction. I'm all ready to go now. Someday I may teach again.

I'm going back to industry as an inspector, in production control, or teaching in industry. I'm quite interested in tape control equipment.

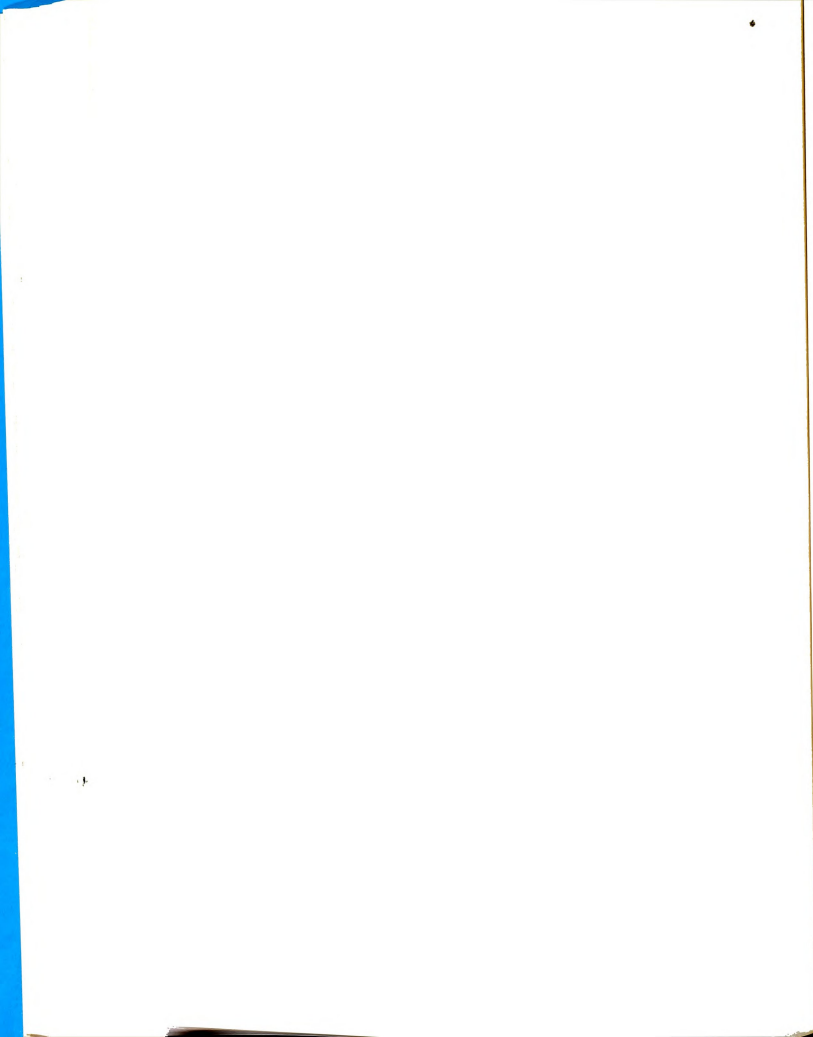
I may go into the scrap metal business. Otherwise, I may be an insurance salesman. I eventually would like to have my own business.

I want to get an engineering degree in electronics. I eventually want to be a supervisor in industry.

I'm going to be a sailor on the Great Lakes.

Summation

Characteristics of out-mobiles, active industrial education teachers and norms of secondary men teachers



in the state of Michigan were compared on age, experience and number of moves.

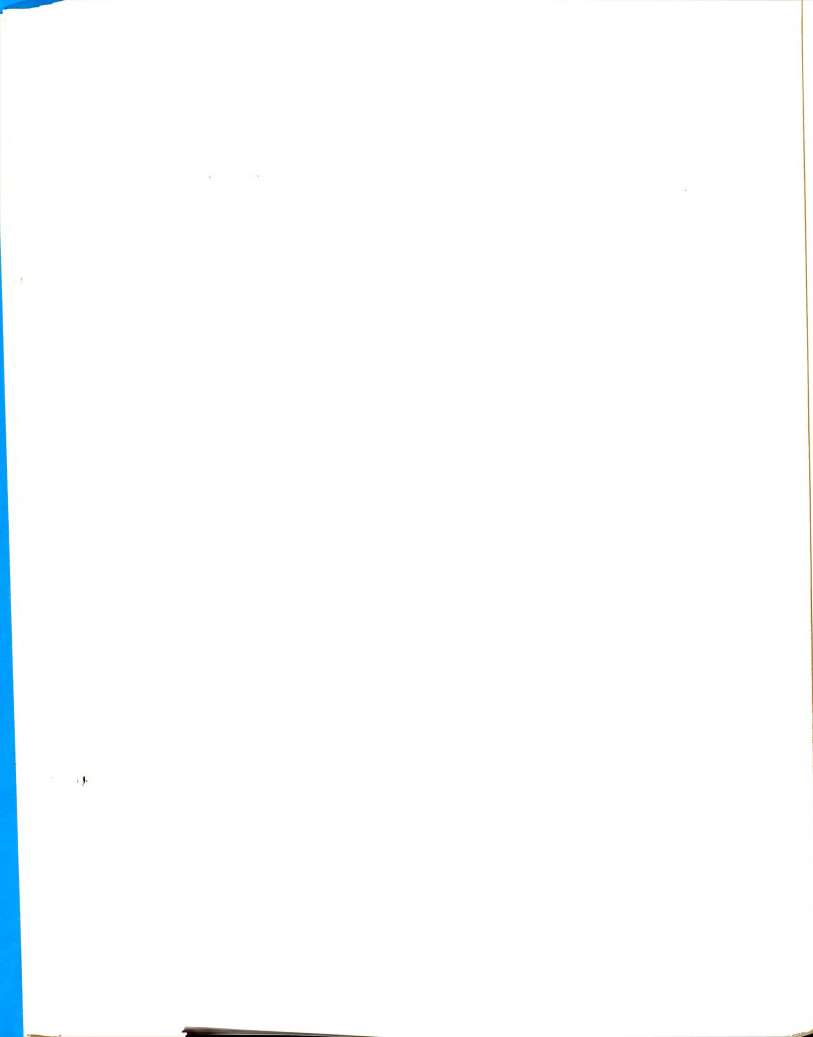
The mean age for secondary men teachers in the state of Michigan was 36.2, active teachers, 36.5; and, for out-mobiles, 27.7 years. An atypical out-mobile of sixty-two years, when considered in calculation of the mean, raised the mean to 34.6 years. Out-mobiles tended to be younger than either secondary men teachers or active industrial education teachers.

The mean number of years of teaching experience for active teachers was 9.1; for secondary men teachers, 7.7; and, for out-mobiles, 4.9 years. The addition of an atypical out-mobile having had forty-four years of experience raised the mean to 9.8 years. Out-mobiles have had less years of teaching experience than either active industrial education teachers or secondary men teachers.

The mean number of moves for active teachers was 1.2; for secondary men teachers, 2.1; and, for out-mobiles, 1.2 moves. The average number of moves by out-mobiles was the same as active teachers and slightly less than for secondary men teachers.

Interviews of eight of ten out-mobiles were made by telephone. These interviews are summated in ten areas.

(1) The attitudes of out-mobiles on teaching ranged from "good--I like teaching," to "it lacks stimulation and a challenge." Generally, they expressed a liking for





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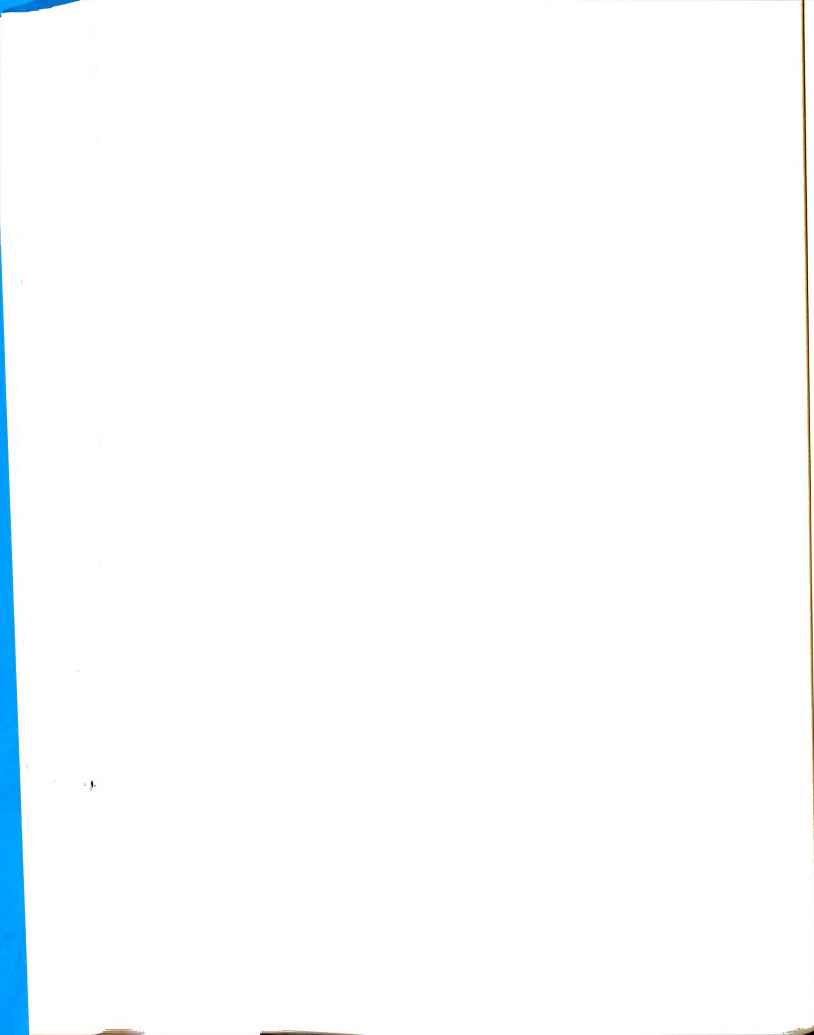
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UNIVERSITY MICROFILMS

teaching if they could exclude some of the students and improve the school shop facilities. Out-mobiles rated themselves as better than average teachers. Feedback from students, administrators and personal observations reinforced their conclusion. The concept of being involved in teaching was interpreted to mean the amount of time spent in teaching. Most out-mobiles desired additional compensating duties such as driver education, coaching or teacher negotiation. One indicated an increased personal involvement in teaching after his introductory years of experience.

(2) The opportunity for professional advancement was perceived by out-mobiles as non-existent. Advanced degrees with no guarantee of increased returns were not appealing. The criteria of advancement by additional degree was questioned. If they were to remain in teaching, they would be industrial education teachers, curriculum coordinators or teach in the community college. Most out-mobiles did not perceive a change in themselves as a means of professional advancement.

(3) The status which out-mobiles felt in the profession was generally high. They indicated an acceptance by the staff of themselves as teachers. Several had experienced a degree of non-acceptance because of salary differences, subject area taught, or the academic orientation of the school and administrators. The academic orientation of administrators was not changed.

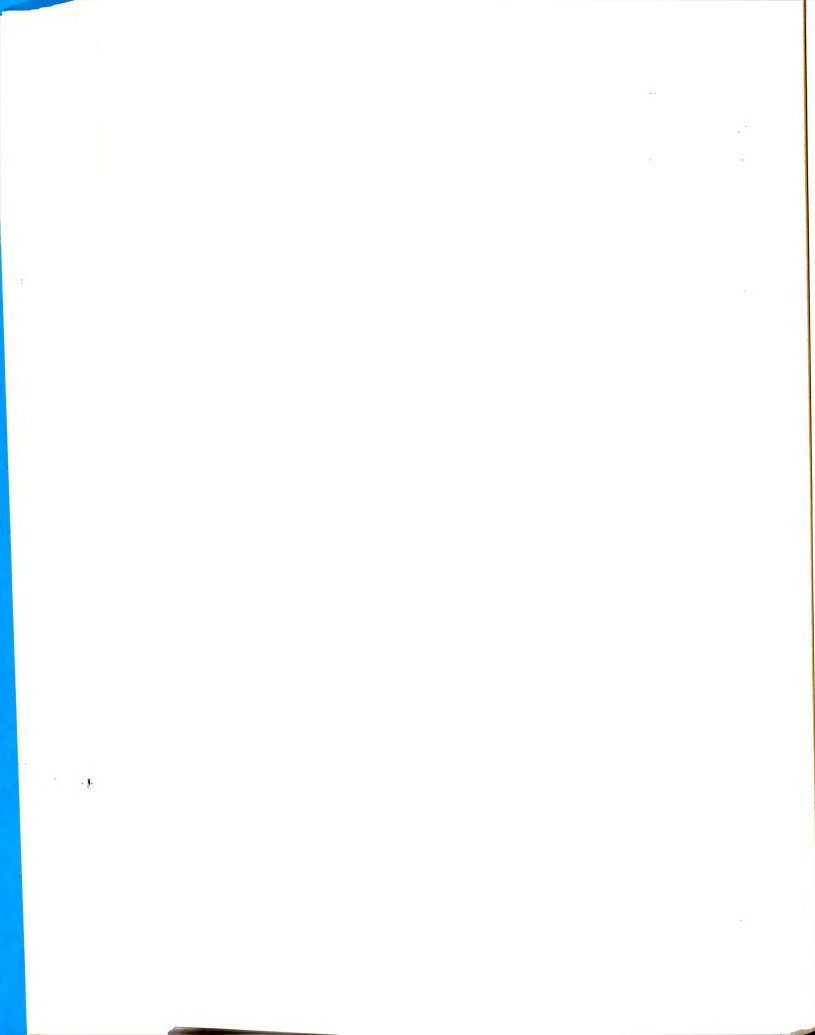


Teachers felt they were equal in status or possibly slightly above the other members of the community. The position was dependent upon the type community. Being non-academic, one felt his status in the community was low. Another felt his status was high in the community because he was a winning coach. Teaching industrial education seemingly had no effect on his status perceptions.

(4) The role of the administrator in the school was ambiguously perceived by out-mobiles. Introductory comments would tend to indicate administrators are good. After this, administrators were felt to be non-helpful or detrimental in the operation and development of an industrial education program. Feelings of lack of direction, slighting of certain subject areas and extreme slowness in obtaining requested items were expressed. One indicated his administrator tried too hard to do everything right all of the time.

The type of assistance which administrators could give was not well expressed by out-mobiles. Responses varied from "I don't know what it would be" to "they are unable at present to cope with the requests which I presently make."

(5) The relations of students with out-mobiles was basically good. They expressed a feeling that students who they were teaching were non-college oriented, had less than average ability, or were poorly motivated. Problems



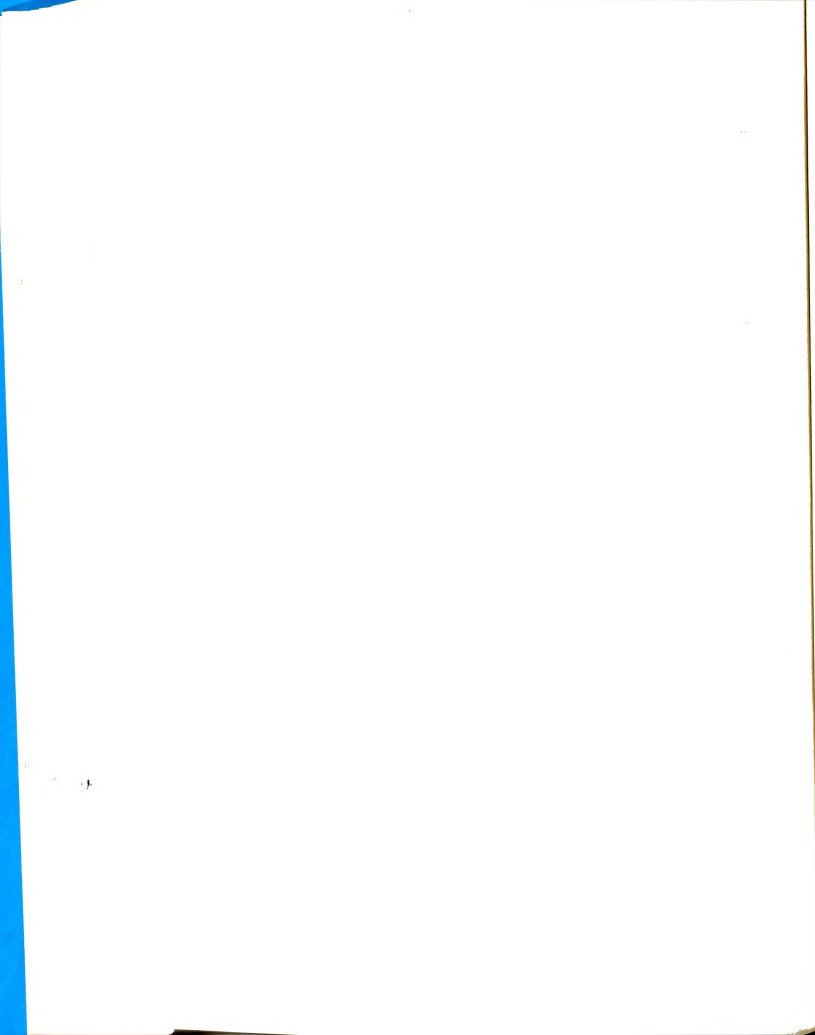
which evolved in the classroom were usually aligned with the slower student. Out-mobiles felt they were able to get along with all students.

The subject which was being taught was given higher value by the teacher than by the students. Statements on the importance and inclusiveness of the content for all students were frequently expressed. The problems of interest and motivation were projected as problems of the student.

(6) The out-mobiles' role in the community was poorly conceived. Generally, they felt accepted in the community. One indicated the community was hostile towards teachers because of the active role teachers were taking in the community.

(7) The work required was not felt to be excessive. One exception, in terms of compensation, was that the amount of time and ability level required of a teacher is high. The nine-month working year was not satisfactory because of the necessity of working summer jobs. If this could be rectified, then teaching would be more satisfactory.

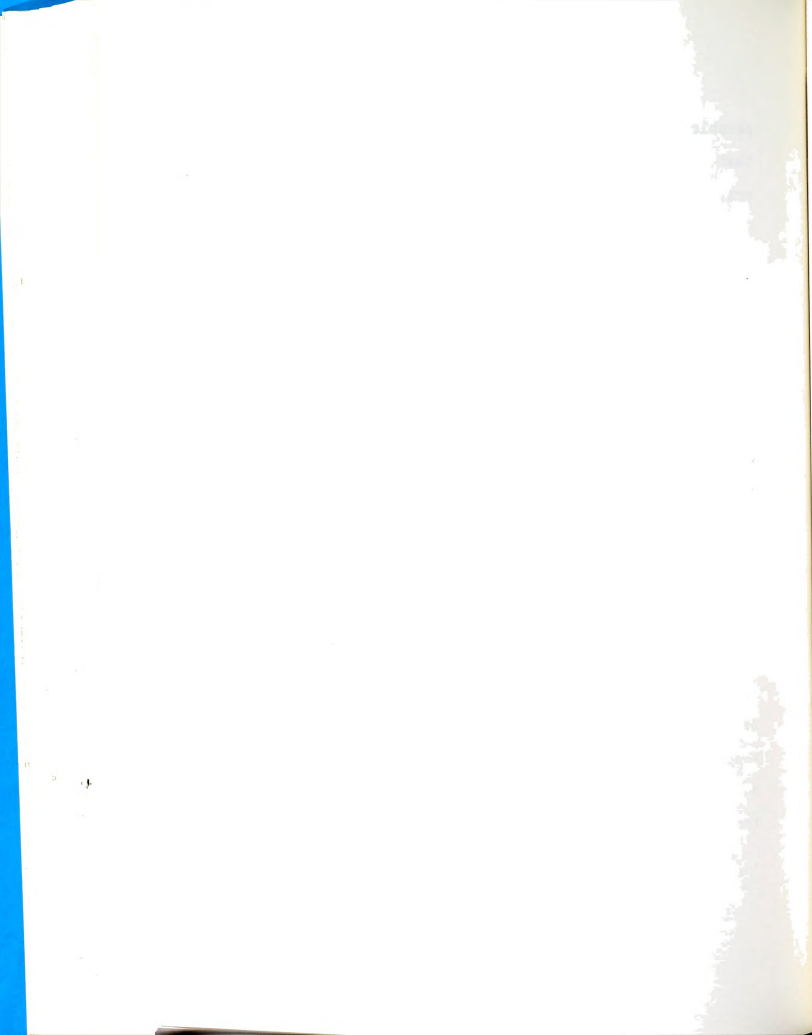
(8) Salaries were viewed as being low by most out-mobiles. A dissatisfaction with Michigan's policy of not transferring sick leave from one system to another system within the state was expressed.



One felt a comparison of wages of teachers with comparable occupations in the community would tend to indicate that wages earned are average or slightly higher for teachers.

(9) Reasons given by out-mobiles for leaving the profession were: low salary, a failure to make the decision to teach, a falseness of the school situation, and the insecurity of re-employment based on millage passage. Salary was the most frequent reason.

(10) Projected occupations of out-mobiles were personal business, construction and sales. Several indicated a desire to use skills obtained in industrial education in their new occupation. One indicated a desire to complete a degree in electrical engineering.



CHAPTER VII

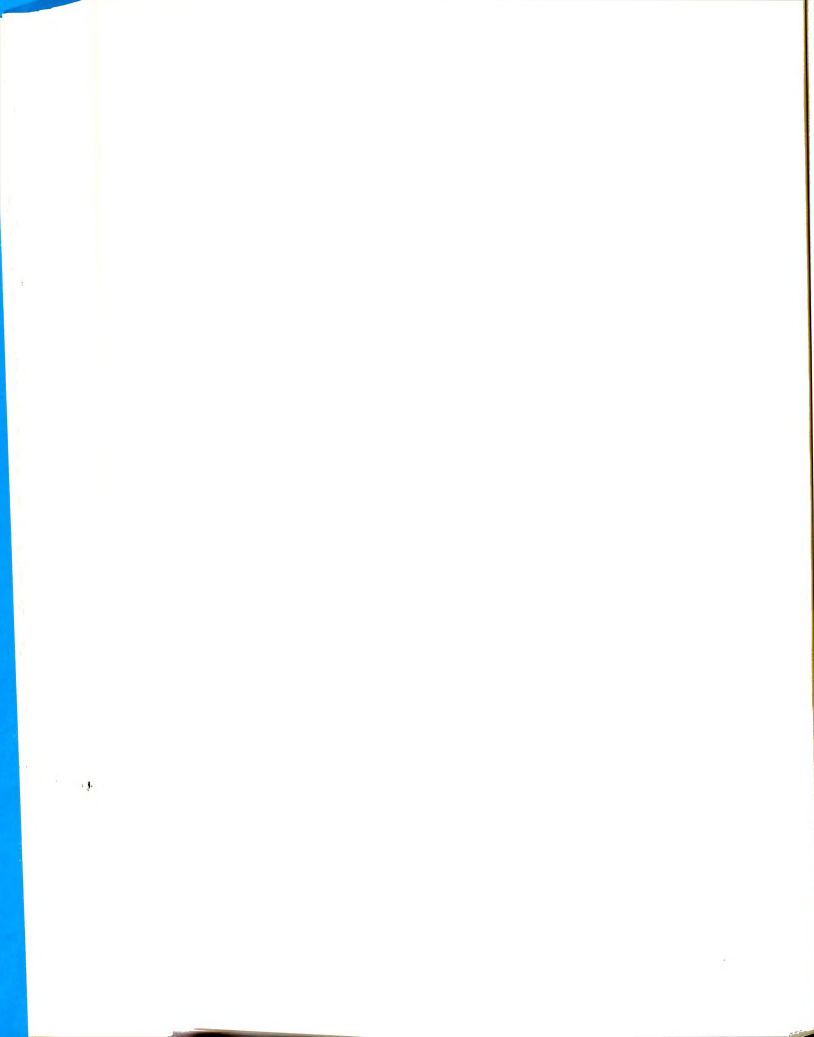
SUMMARY, CONCLUSIONS, RECOMMENDATIONS, DISCUSSION AND IMPLICATIONS

This chapter includes five sections. They are:

(1) a summary of the methodology used, (2) conclusions based on an analysis of data obtained from the test instrument, (3) recommendations for improvement of similar studies, (4) a discussion of the findings of this study as compared to other studies on mobility, and (5) implications for educators.

The summary includes the hypotheses examined, method of obtaining a representative sample, review of literature, development of a test instrument, analysis of data and interviews of out-mobiles. The primary steps in the development of each topic is presented.

Conclusions are given in three categories: (1) the percentage of out-mobiles and mobile industrial education teachers per annum, (2) statistical analysis of the test data, and (3) characteristics of out-mobiles obtained from interviews.



Recommendations for additional investigation of teacher out-mobility are presented. Included are the topics of sample selection, duration of the study, attitude test instrument and interviews of out-mobiles.

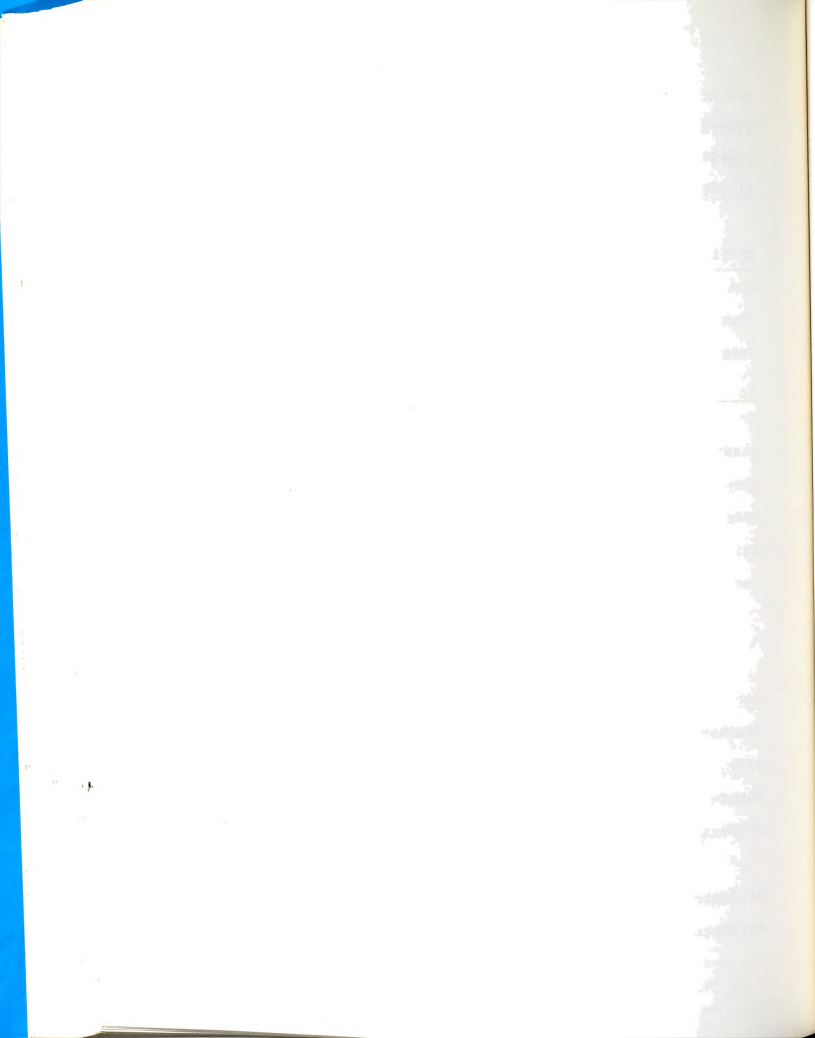
The discussion compares results of this study to pertinent studies discussed in the review of literature and footnoted in other portions of the dissertation. Emphasis is placed on the propensity of mobility and reasons for its occurrence.

Implications of this study are considered for teacher preparation and public school programs. Included are possible changes in the operation of university teacher preparation programs and the curriculum of the secondary school. The role of university and state department consultants and administrators of public schools may be factors in decreasing out-mobility.

Summation

The purpose of this study was to determine (1) the percentage of the sample of secondary industrial education teachers in Michigan who leave the profession in a given year, and (2) differences in pretested professional attitudes between active teachers and teachers who leave the profession.

Two basic assumptions were posited. One was that students in preparatory programs are not given sufficient evidence to formulate attitudes which are necessary to



become effective teachers and, two, conditions are not always conducive to supporting the development of attitudes necessary for effective teaching while participating in the profession.

Hypotheses examined in the study were:

Multivariate Test for Main Effect

Hypothesis for main effect.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers as measured by the attitude test instrument.

Univariate Tests of Subcategories

Hypothesis I.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward economic worth and wages paid.

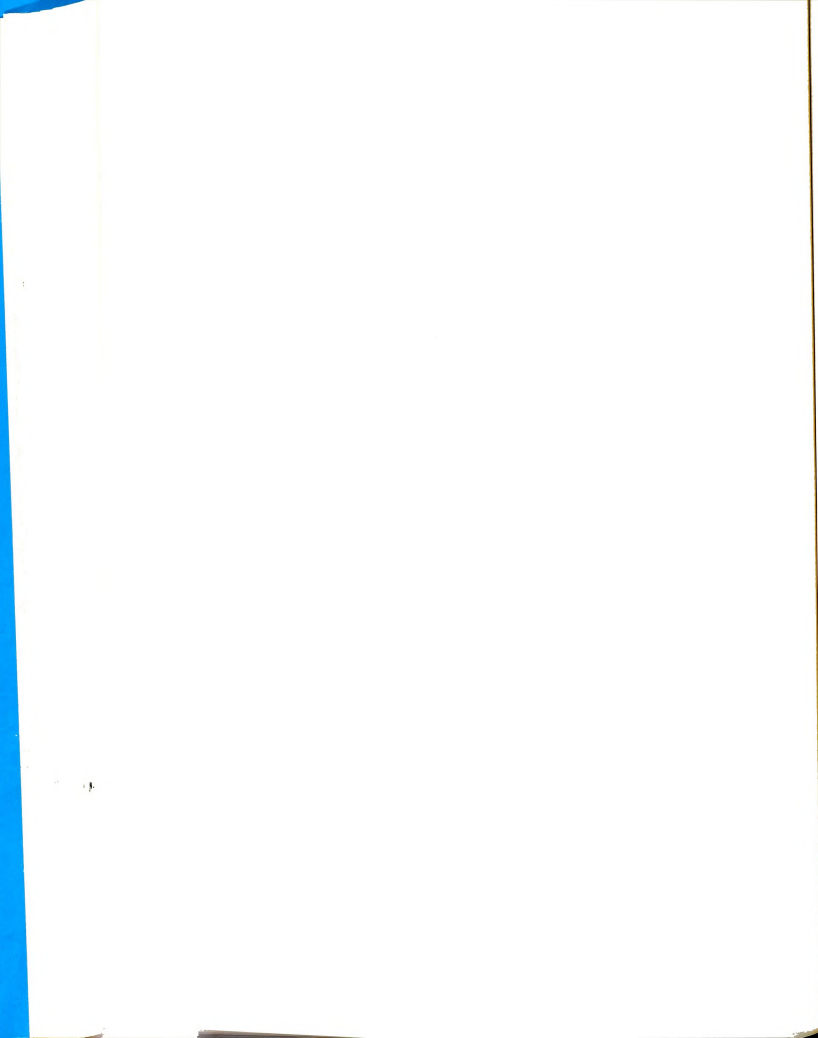
Hypothesis II.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward the work requirements of teaching.

Hypothesis III.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their community role.

Hypothesis IV.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward relations with administrators.

Hypothesis V.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their relations with students.

Hypothesis VI.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their opportunity for professional advancement.



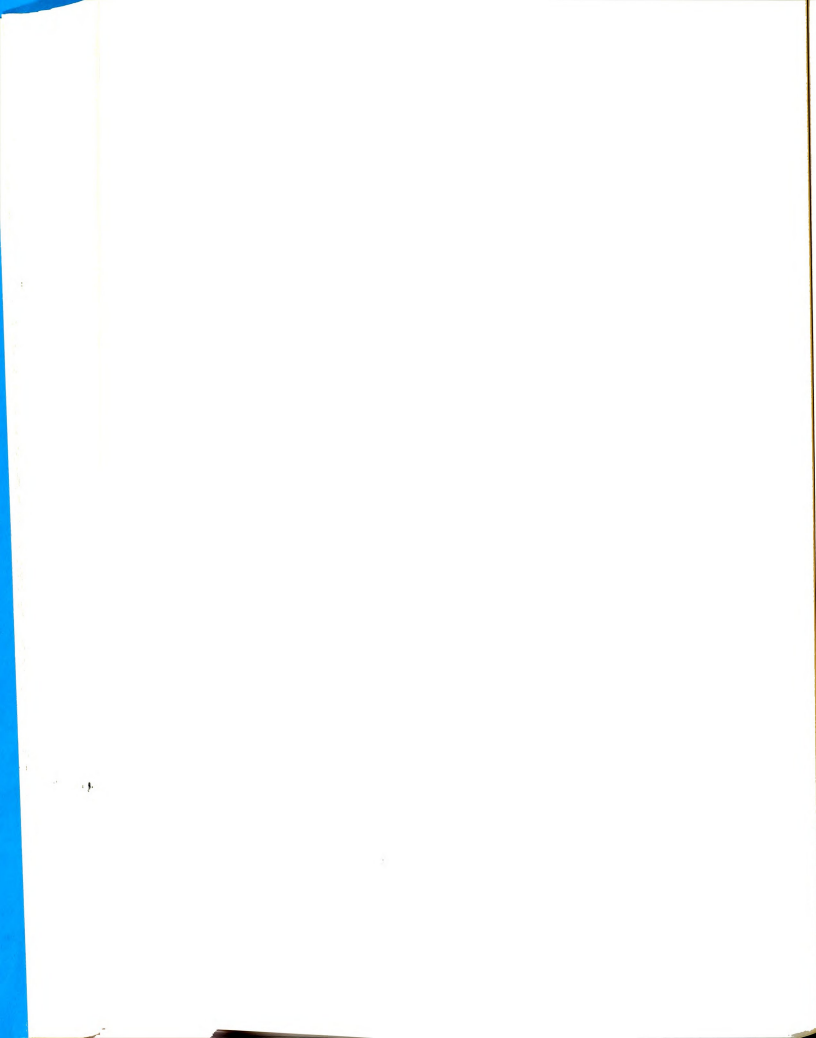
Hypothesis VII.--There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their capabilities as a teacher.

Hypothesis VIII. There is no significant difference in the attitudes of out-mobiles as compared to active industrial education teachers toward their professional satisfaction.

Six variables were examined for possible interaction with the main effect: (1) size of the school in which the individual teaches, (2) number of years of teaching experience, (3) age of the teacher, (4) those having taught and left the profession and later returned, (5) number of moves in the profession, and (6) attitudes of industrial arts teachers as compared to vocational education teachers. Each of the variables was tested as a multivariate and as a univariate for each of the eight subcategories of the test instrument.

The review of literature included selected writings on sociological concepts of mobility and current studies of teacher mobility and loss. Two questions commonly posed by educators and sociologists are the degree of mobility. Industrial educators have not researched these two questions in their subject area.

A sample of 200 active teachers in industrial education was drawn by a multistage stratified random method from active industrial education teachers in the State of Michigan. Steps used were these: (1) listing of all Michigan school systems, (2) classification of all systems

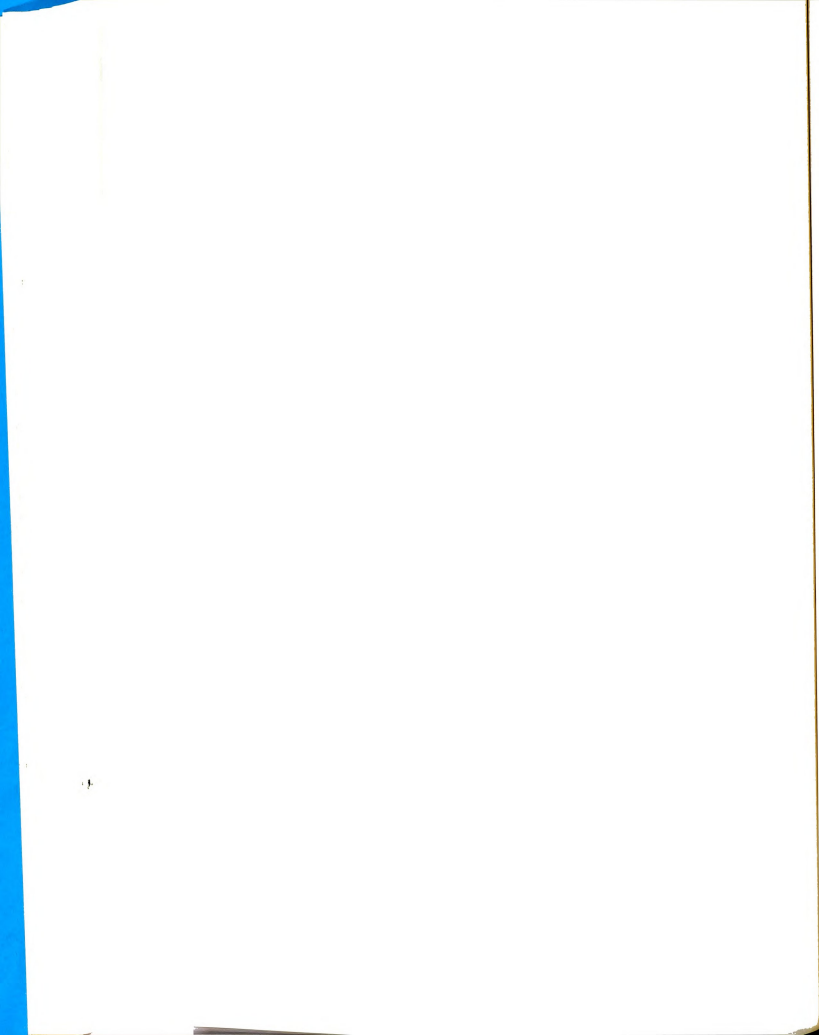


by total student enrollment into four strata, (3) random drawing of schools from each stratum, (4) listing of active teachers formulated from superintendents' returns, and (5) proportional random selection of active teachers from each stratum based on the projected number of teachers in the stratum.

Active teachers in the sample were asked to complete an attitude test instrument in January, 1969. The total return was 165 of 200 (82.5 per cent). The return of usable instruments was 135 of 200 (67.5 per cent).

The attitude test instrument was developed using conclusions from a 1955 Thorndike and Hagen study, Characteristics of Teachers Who Remained In and Left Teaching.¹ The instrument included seventy-two statements; a five-item Likert scale was used for responding. Eight sub-categories of the test instrument, each having nine statements, were: (1) economic worth and wages paid, (2) work requirements, (3) community role, (4) relations with administrators, (5) relations with students, (6) opportunity for professional advancement, (7) capabilities as a teacher, and (8) satisfaction with the profession. A Kuder-Richardson reliability index, based on 135 usable returned test instruments, was .93.

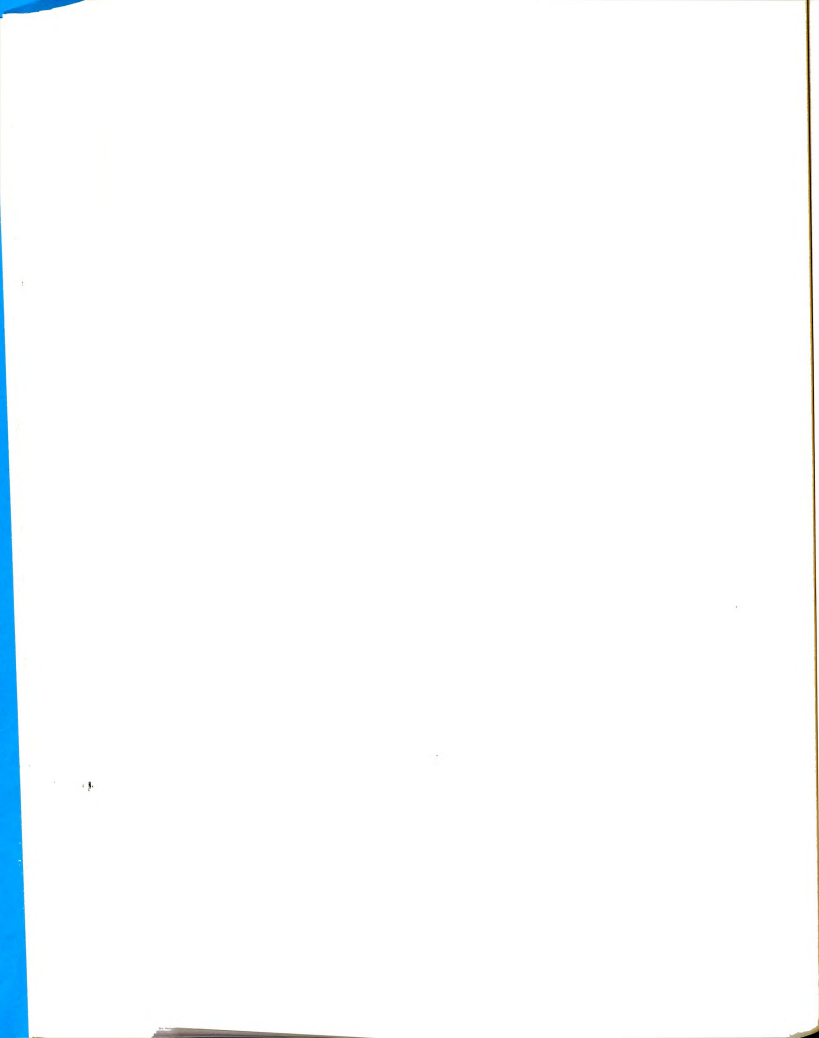
¹Robert Thorndike and Elizabeth Hagen, Characteristics of Men Who Remained In and Left Teaching, Cooperative Research Project No. 574, (SAE 8189), United States Office of Education, Department of Health, Education, and Welfare (New York: Teachers College, Columbia University, 1955), pp.1 ff.



A follow-up study was begun May 2, 1969, to determine active teachers designating themselves as out-mobiles. The request was sent to 197 active teachers of whom 172 (87.3 per cent) returned the follow-up check list. The number of out-mobiles identified was 10 of 200 (5 per cent). The total number of industrial education teachers not teaching industrial education courses and becoming out-mobile was 31 of 200 (15.5 per cent). The mobility was accounted for by retirement, becoming an administrator or coordinator, being inducted into the military service, returning to college and teaching different subject areas.

A Rao approximate F was used as the multivariate test of the six variables and main effect. A univariate, one-way analysis of variance, was calculated for each of the subcategories for the six variables and the main effect.

Characteristics of out-mobiles were determined from returned test instruments and from interviews with eight of the ten designates. The mean age of out-mobiles was 27.7 as compared to a mean age of 36.5 for active teachers. The mean number of years of teaching experience for out-mobiles was 4.9 as compared to 9.1 for active teachers. The mean number of moves for out-mobiles was 1.2, the same as for active teachers. Active industrial education teachers when compared to secondary men teachers in the State of Michigan on age, experience and moves were very similar. Respectively, the means were these: age, 36.5 to 36.7; experience, 9.1 to 7.7; and, moves, 1.2 to 2.0.



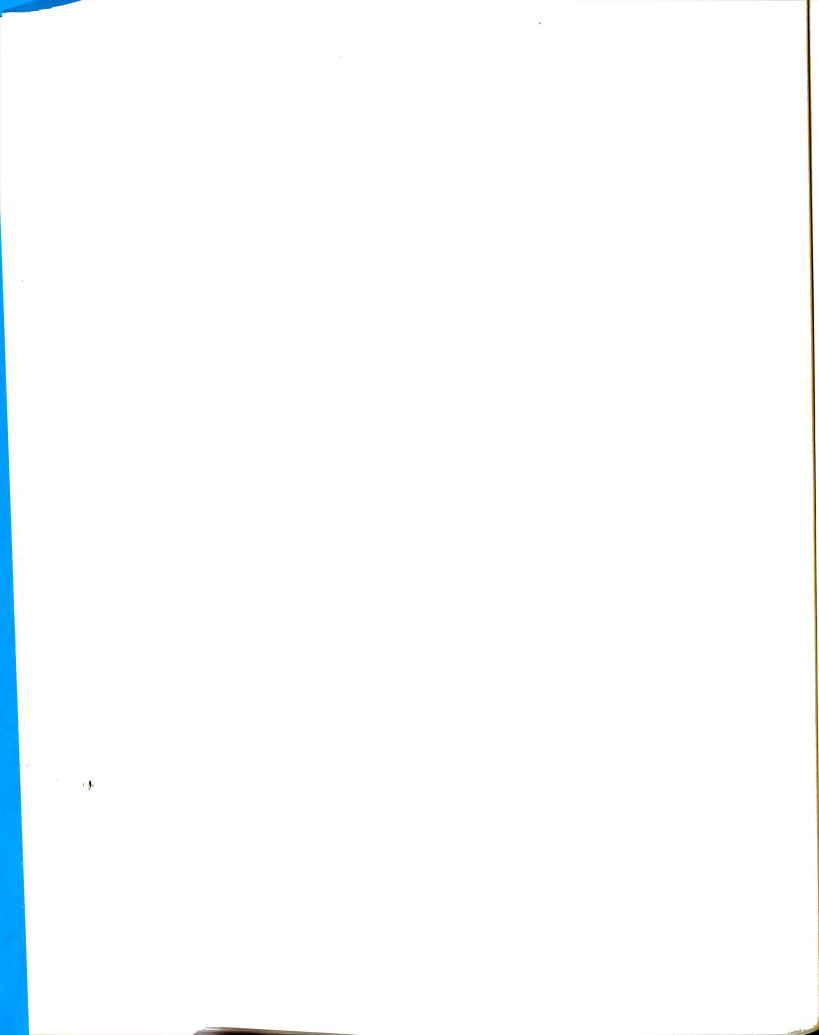
Interviews with out-mobiles indicated that reasons for leaving were lack of opportunity for professional advancement, salary, relations with students, inadequate facilities and a failure to develop a commitment to teaching. Positions which they desired were either in personal business or industry. An attempt to use skills developed in industrial education in their new occupation was evident.

Conclusions

The findings derived through the analysis of the data support the following conclusions. Application is made only to the sample of 200 active industrial education teachers surveyed in the State of Michigan during the 1968-1969 academic year.

A. The percentage of out-mobiles and mobiles per annum of active industrial education teachers in the State of Michigan, based on a scientifically drawn sample, was determined. Premised on a return of 87.3 per cent of the sample are these conclusions:

1. Five per cent of the sample of 200 active industrial education teachers during the 1968-1969 academic year designated themselves as becoming out-mobile for the coming year.

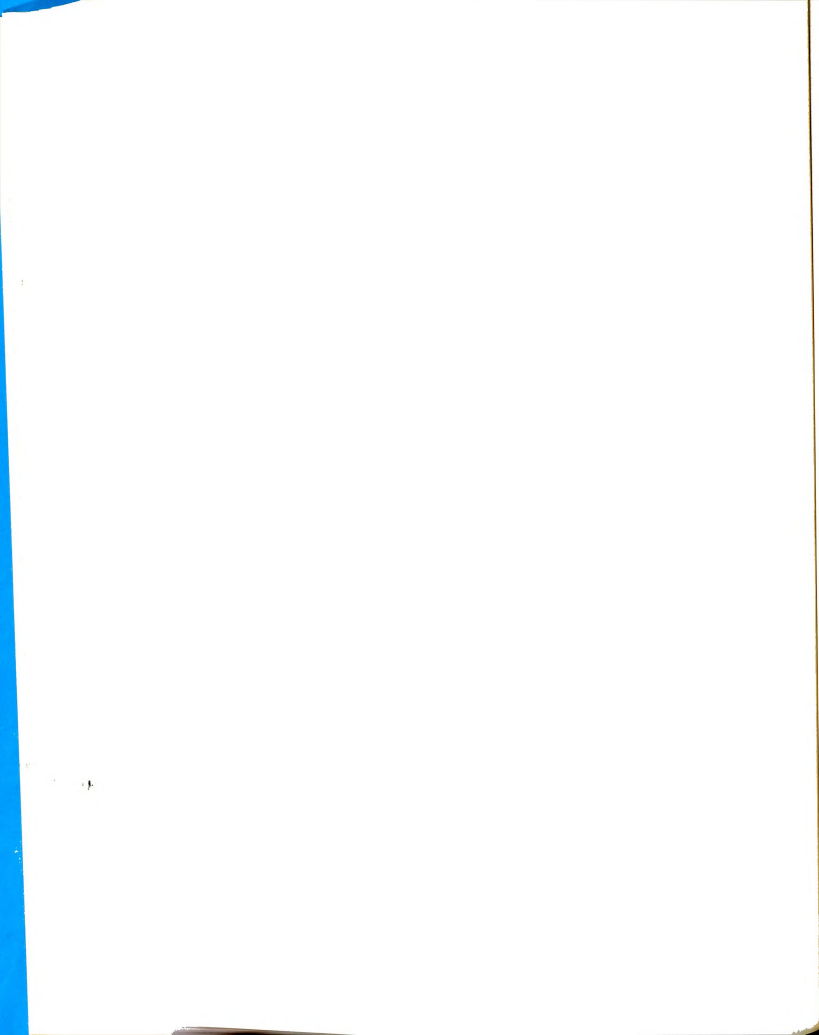


2. Ten and one-half per cent of the sample of 200 active industrial education teachers during the 1968-1969 academic year will not be teaching industrial education the coming year but will remain in education.
3. Fifteen and one-half per cent of the sample of 200 active industrial education teachers for the 1968-1969 academic year will not be teaching industrial education the coming year.

B. Data from the attitude test instrument administered to active teachers was analyzed. Analysis was based on 135 usable test instruments, 67.5 per cent of the sample. The number of out-mobiles for analysis was nine, as compared to 126 active teachers.² Extremely unequal N's may have affected the analysis.

1. Significant differences in attitudes of out-mobiles as compared to active teachers were measured by the test instrument.
2. Significant differences in attitudes of out-mobiles as compared to active teachers were identified in the subcategory, opportunity for professional advancement. This subcategory had significant interaction with the variable age. No direct inference is made for the subcategory.

²The number of out-mobiles identified in the study was ten. The number of usable data sheets from this group was nine.



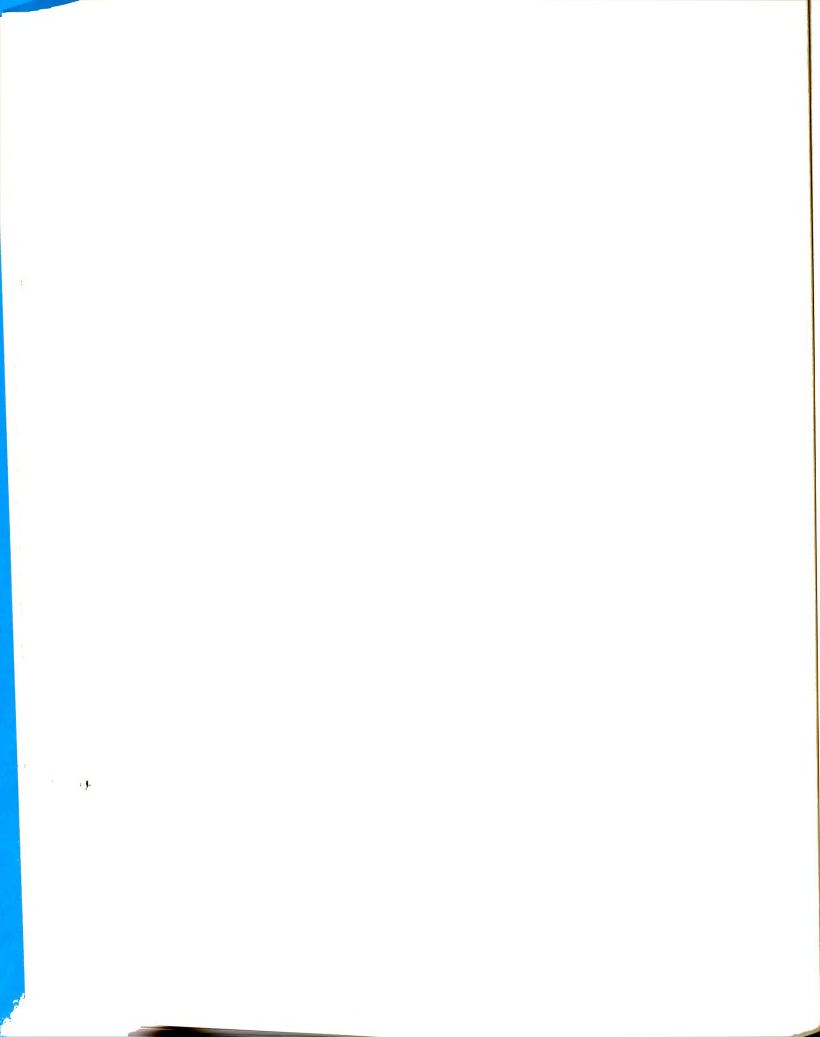
3. Significant differences in attitudes of active teachers were measured when teachers were grouped by age. This was the only variable having significant differences.³
4. Significant differences in attitudes of active teachers were measured in the subcategory of student relations when active teachers were grouped by age.
5. No significant interaction was present between the main effect and the variable age.

A significant Rao approximate F would tend to indicate that differences in measured attitudes do exist. The failure to reject additional null hypotheses for the eight subcategories, after a significant main effect, limits the specificity of identification of areas of attitude differences between out-mobiles and active teachers.

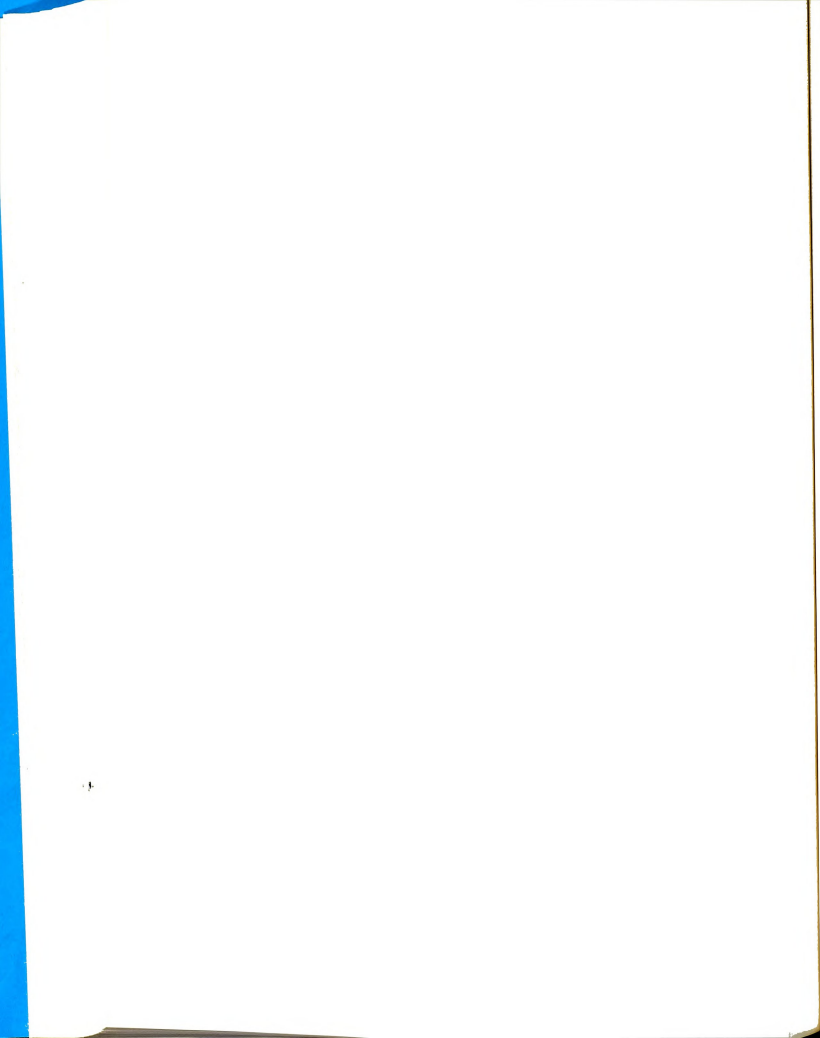
C. Interviews of eight of ten out-mobile designates were made by telephone. The bases of the interview format were the eight categories of the test instrument. It was concluded that:

1. Out-mobiles generally enjoyed their role as a teacher. They assessed themselves as being better than average teachers.

³The remaining univariate tests for subcategories of the variables were discarded after the multivariate F for the variable was not found significant.



2. Out-mobiles perceived the opportunity for professional advancement as non-existent. Advanced degrees did not appeal to out-mobiles as a means of upward mobility.
3. Out-mobiles generally felt accepted by other staff members.
4. Out-mobiles experienced ambiguous feelings about their administrators. Usually, they were viewed as not being helpful in the development of industrial education programs.
5. Out-mobiles felt their relations with students were good. They categorized industrial education students as having less than average ability. They felt disharmony between their assessment of the value of industrial education courses as compared to student assessment.
6. Out-mobiles could not define their role in the community with specificity.
7. Out-mobiles generally agreed that the work required of them was not excessive.
8. Out-mobiles thought the salary paid them was less than they desired.
9. Out-mobiles gave these reasons for leaving the profession: (a) salary, (b) inadequate commitment, (c) falseness of the school situation, and (d) insecurity of employment.

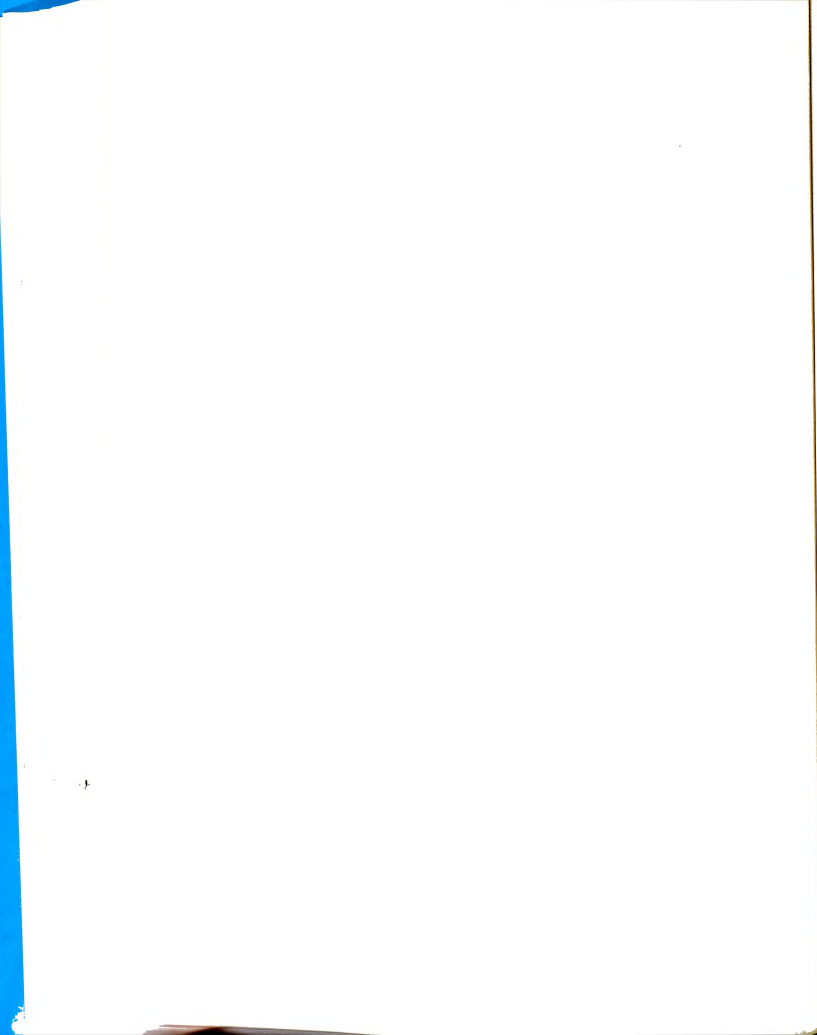


10. Out-mobiles indicated occupations in sales, real estate, construction and personal business after teaching.

Recommendations

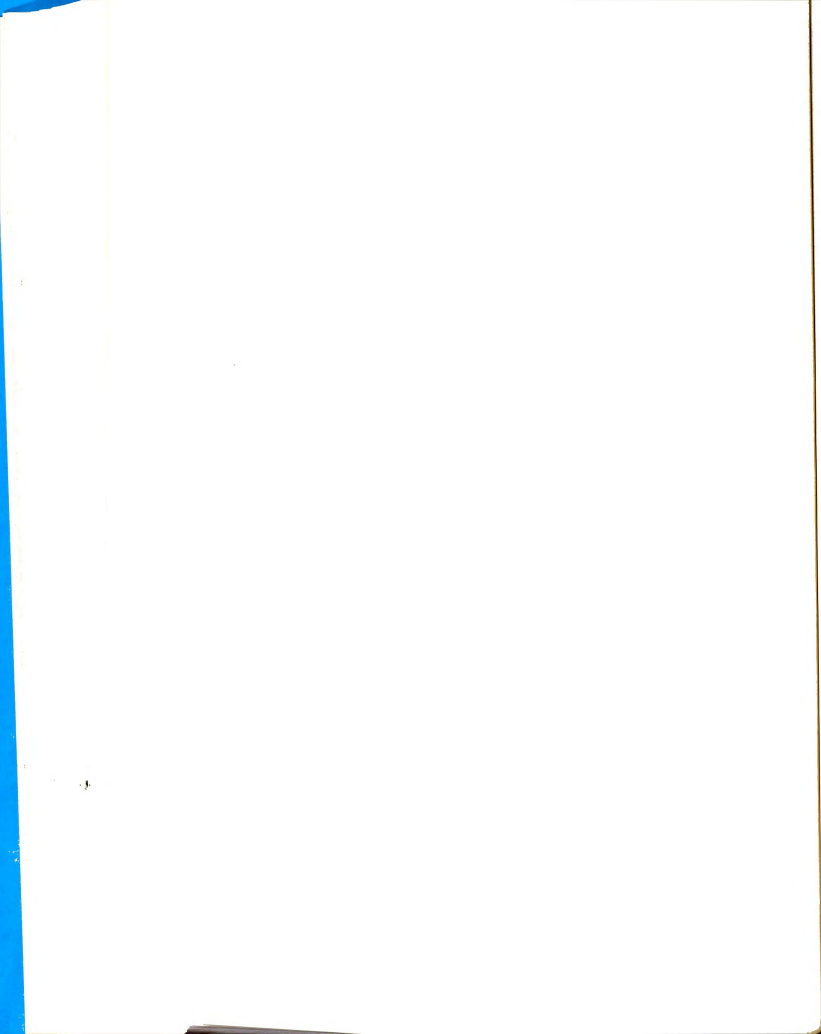
The following recommendations are offered for improving the design of this study.

1. Modification of the multistage stratified random sample may improve the validity of the sample.
 - A. Increase the number of schools drawn from the total number of schools in the State of Michigan.
 - B. Obtain a more current listing of active industrial education teachers for sample selection in Stratum IV.
 - C. Increase the number of school systems that participate in the study from Stratum III.
 - D. Increase the sample size to increase the number of out-mobiles used in the comparative attitudes of out-mobiles to active industrial education teachers.
 - E. Selection of a sample of active teachers ranging in age from twenty to thirty-five. Emphasis of a study on this grouping would increase the number of out-mobiles who would be identified.

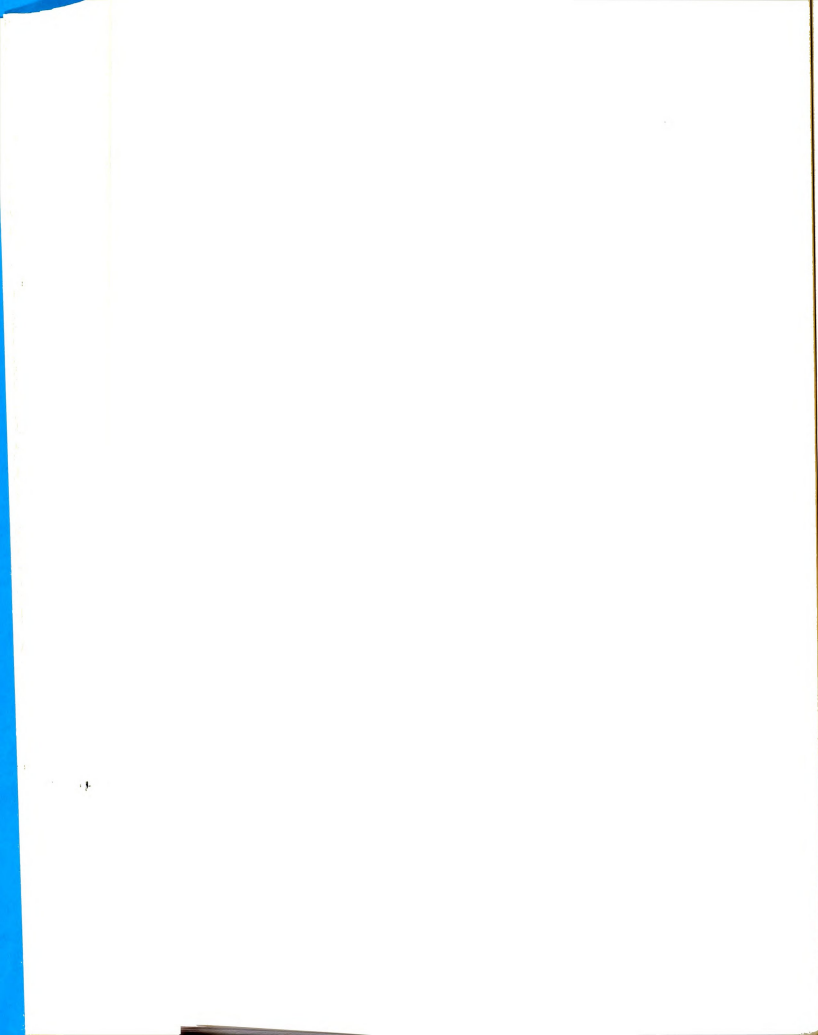


2. Increase the length of time the study is in progress to assure long-term attitude shifts and to validate the decision to become out-mobile.
 - A. Administer the attitude test instrument earlier in the school year. The intent was to determine attitudes prior to the time the decision to become out-mobile had been made. Once a positive commitment to become out-mobile had been made, changes in attitude may occur.
 - B. A follow-up study after summer vacation to determine if out-mobiles and active teachers actually complied with their intent.
3. A test instrument previously developed to measure teacher attitudes or improve reliability of the present test instrument should be considered.
 - A. Examination of the "Purdue Teacher Opinionnaire" as a possible test instrument for attitude assessment made on active teachers.⁴
 - B. Additional work on the present test instrument to improve the reliability of some of the subcategories.

⁴Ralph R. Bentley and Averno M. Rempel, "The Purdue Teacher Opinionnaire" (test instrument developed at Purdue University, West Lafayette: Indiana, 1967). This test instrument was located after the study was in progress. Revision of the present hypotheses may have made it applicable to the present study.



- C. Modification of some of the hypotheses so that other attitude test instruments may be applicable.
- 4. Modification of the present study methodology to a linear study for examination of attitude change and total mobility of a teacher group.
 - A. Assessment of attitudes of teachers at pre-determined intervals to validate predictability of attitudes as an indicator of out-mobility.
 - B. An annual follow-up study to determine the percentage of a preselected sample that became out-mobile over a period of years.
- 5. Interviews should be conducted with all out-mobiles as a means of considering additional aspects of the decision to leave the profession.
 - A. Interviews should be made by personal visitation of the out-mobile designate. Telephone interviews have limited value in lowering the degree of defense of out-mobiles when discussing reasons for leaving the profession.
 - B. The amount of time necessary to make an interview should be increased to assist the individual in becoming comfortable prior to discussion of his reasons for becoming out-mobile.



Discussion

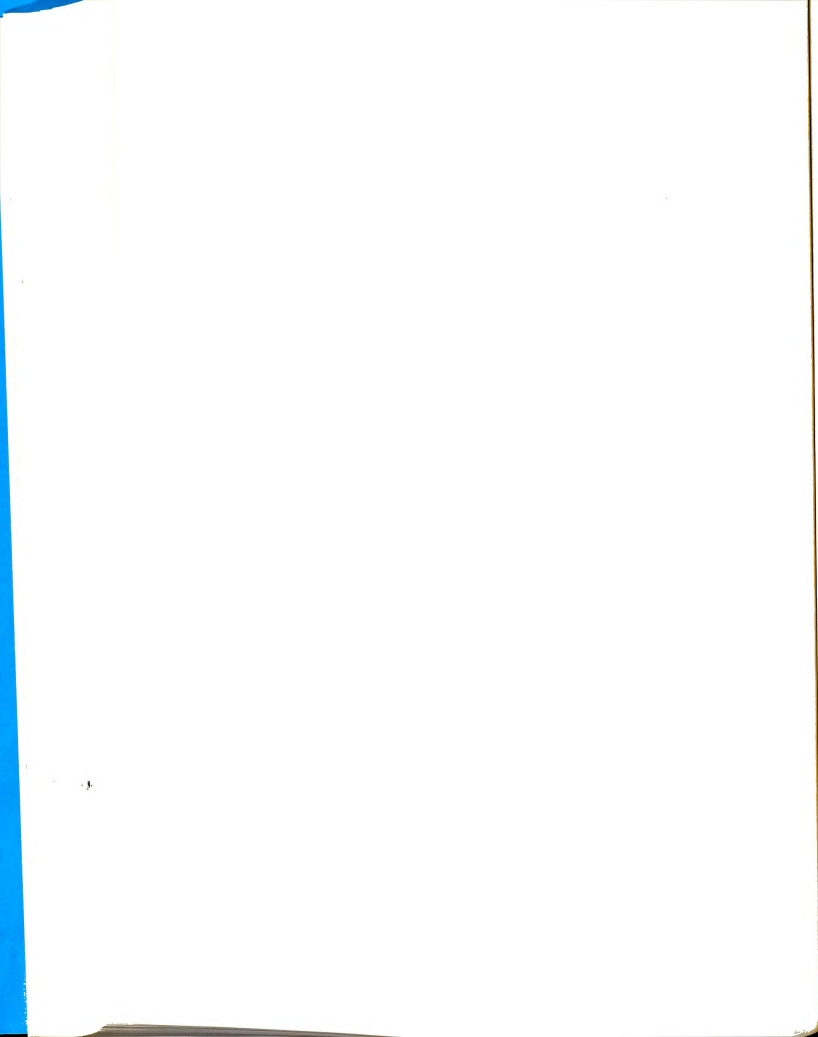
The NEA study of teacher mobility and loss made in 1967 places teacher loss to the profession at 5.8 per cent. This figure, when compared to the 5.0 per cent for out-mobile industrial education teachers, would tend to validate the generalization that mobility of industrial education teachers' is comparable to other teachers groups. The return on the NEA study was 86.5 per cent as compared to 87.3 per cent for this study. Both returns tend to be less than desirable for studies of teacher mobility and loss.⁵

The total mobility of the NEA study was 20.4 per cent as compared to 15.5 per cent for industrial education teachers in this study.⁶ A limitation of comparing results of a national study to a study of industrial education teachers is that differences between sexes and elementary and secondary teachers are unaccountable.

The problem of supply and demand in industrial education remains critical. Based on a NEA study report made in 1969, the number of industrial education graduates for 1966 in the State of Michigan was 235; for 1967, was 226;

⁵National Education Association, Research Division, "Teacher Mobility and Loss: Summary of Teacher Mobility and Turnover, 1965-1966 to 1966-1967," National Education Research Bulletin, 46:118-126, December, 1968.

⁶Ibid. p. 126.



and, for 1968, was 244.⁷ The 1968 NEA study on supply and demand gave the percentage of graduates entering the profession as 72.8.⁸ For this out-mobility study, the sample of industrial education teachers represents 7.3 per cent of the total projected number of teachers, 2,737. This projected number of teachers is very comparable to the number obtained by the Michigan Board of Education of 2,842.⁹ Results of this study would tend to indicate that the supply-demand problem will not be easily rectified.

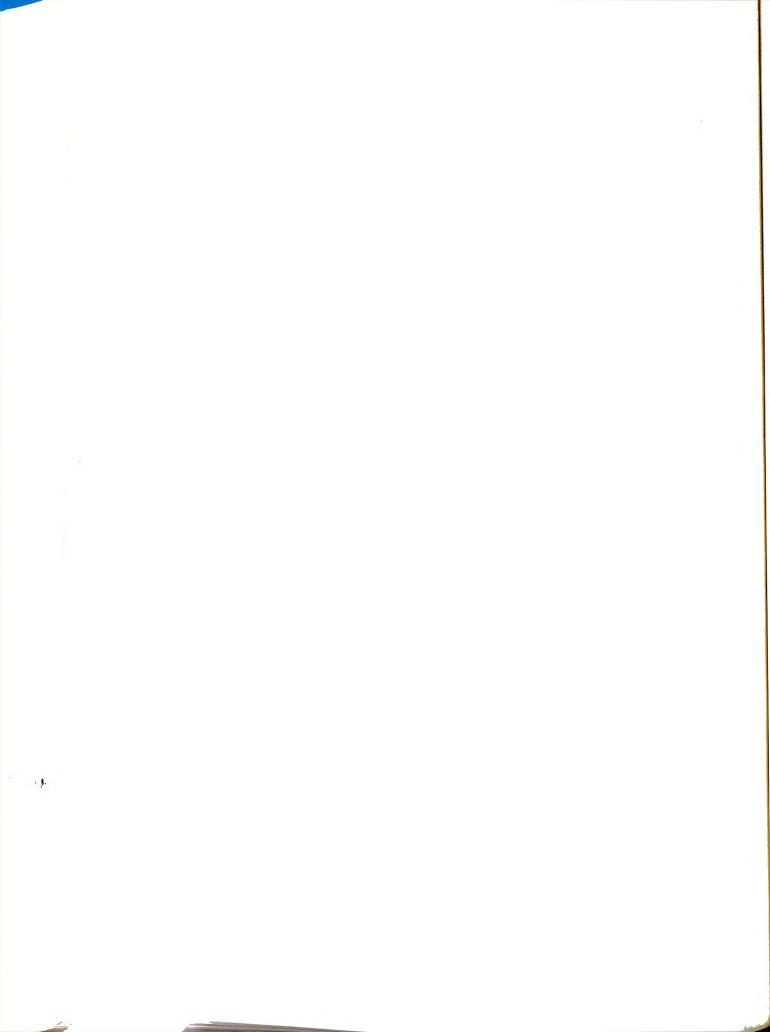
The Thorndike-Hagen study listed the reasons for teachers leaving the profession as salary, opportunity for advancement, different job, too many duties, difficulties with students, didn't like teaching, and lacking in abilities to teach.¹⁰ Interviews with out-mobiles would

⁷ National Education Association, Research Division Teacher Supply and Demand in Public Schools, 1968 (Research Report 1969-R4. Washington D. C.: National Education Association, 1969), p. 64.

⁸ Ibid.

⁹ Michigan Department of Education, Professional Personnel in Michigan Public Schools, Status Report 1967-1968 (Book Three, Assignment Patterns. Lansing, Michigan Department of Education, 1969), p. 54.

¹⁰ Robert Thorndike and Elizabeth Hagen, Characteristics of Men Who Remained In and Left Teaching, Cooperative Research Project No. 574, (SAE 8189), United States Office of Education, Department of Health, Education, and Welfare (New York: Teachers College, Columbia University, 1955), pp. 1 ff.

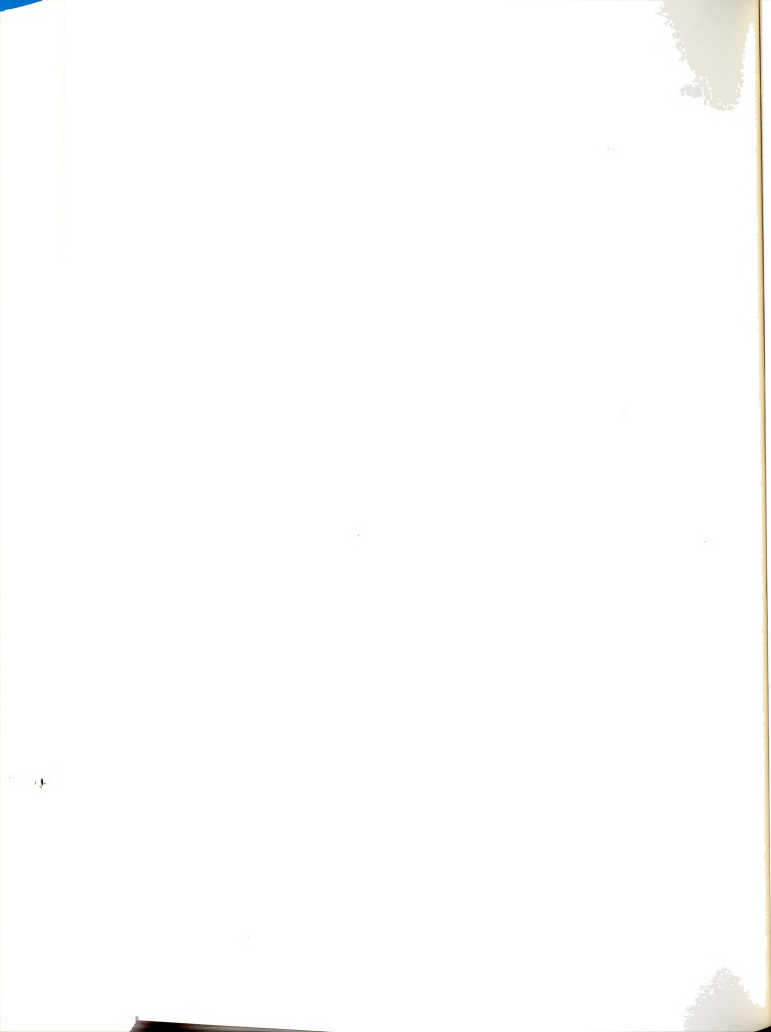


tend to reinforce these reasons. A majority of the out-mobiles indentified in this study indicated they felt they were better than average teachers. The limitation of significant conclusions in analysis of data from the test instrument aborts the possibility of further discussion of this portion of the study.

Implications

The preparation of teachers by the university has emphasized increased numbers. The quality and commitment of teachers may be improved thus decreasing the demand for quantity. Educators may consider these implications in the preservice professional preparation of teachers:

1. Experience with elementary and secondary students should be provided for potential teachers early in the preparatory program. This experience should serve the student as evidence in the vocational decision-making process.
2. Teaching experience should be provided to the teacher trainee periodically during the preparatory program. This experience should not be viewed as a selective process, but as a means of role development.
3. Flexibility and a feeling of security about changing norms should be viewed as desirable attributes of teacher trainees. Reinforcement and assistance in development of these characteristics should be promoted.

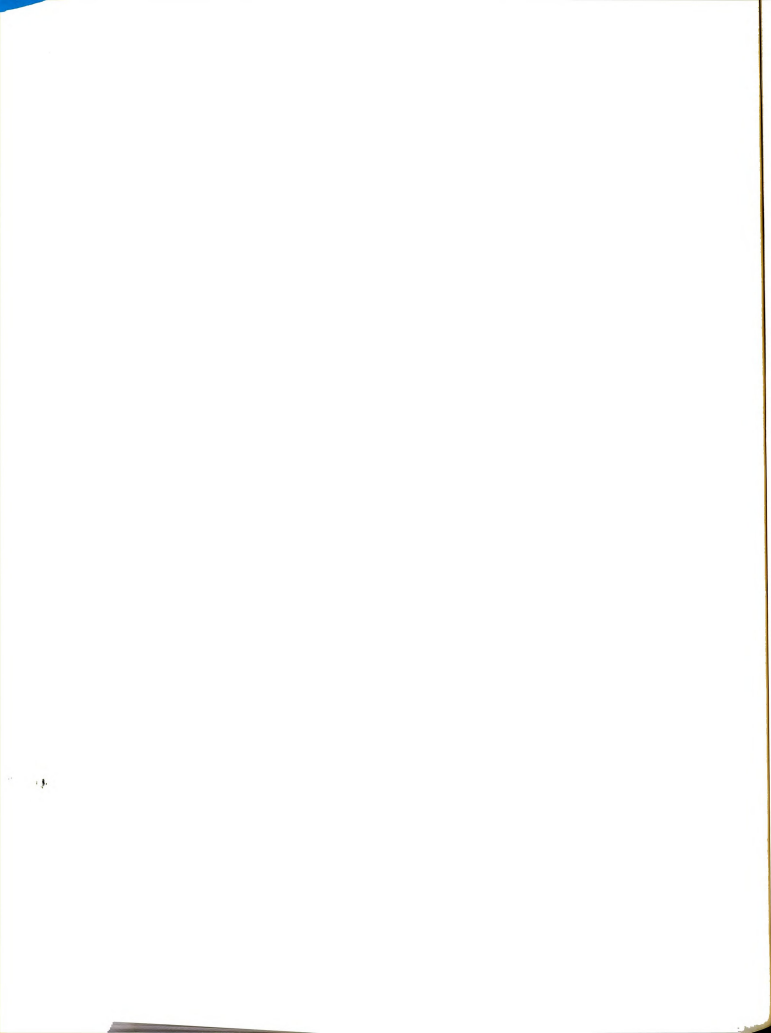


4. The teacher trainee should be given opportunity to experiment with the role of content in the development of youth. Content should be viewed as a means of promoting growth and not as an end product.
5. Opportunities for informal exchanges of ideas between teacher trainees and professors should be provided in the program. Formal relations between students and professors may not be conducive to role development.

Active teachers need support to participate more fully in the education of youth. Teachers in small schools, those operating a one-man laboratory, need recognition from other educators. This support could be an important aspect in the decision of the teacher to remain in the profession.

Implications which may be considered are these:

1. Multiarea programs allowing the teacher to perform as a part of a team should be developed in the curriculum. Identification with the total education program may enhance the industrial educator's perception of his role in the school.
2. University personnel and state department consultants could lend support to teachers during visitations to the school. Teacher trainees could interact with the teacher in the public school at regular intervals.

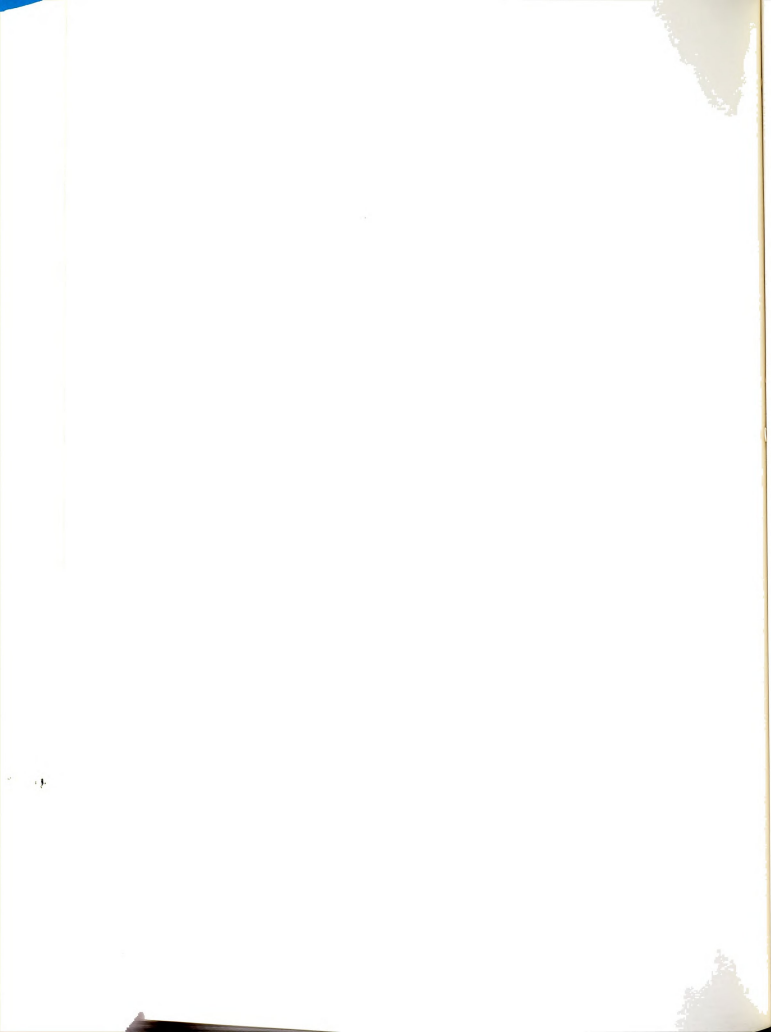


3. Administrators need to be sensitive to the industrial educator's role in the education of youth for society.
4. Programs which have adequate financial support should be developed in the school system. Obsolete equipment and inadequate supplies frustrate the capable teacher.
5. Opportunities for professional advancement within the system should be investigated. Differential staffing may be an alternative to present staffing techniques.

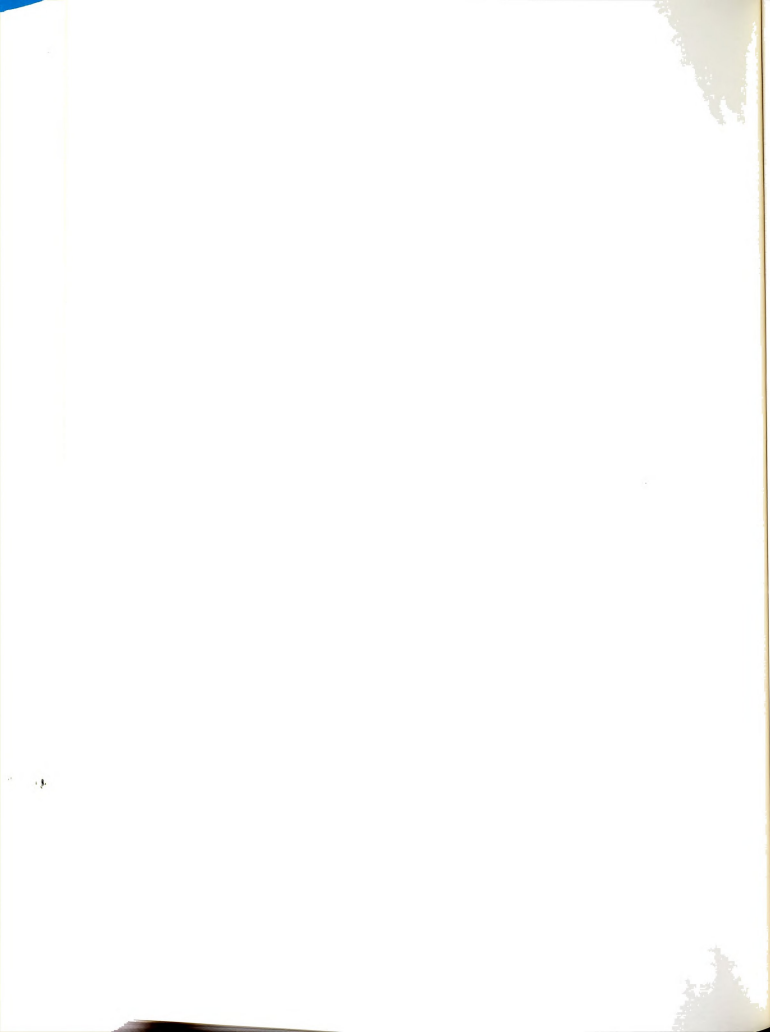
These implications could seemingly be implemented in the teacher preparatory programs and the public school. The individual teacher's attitudes, values and perceptions about himself must be considered.

Sociologists appear to reinforce the desirability of assuring workers the opportunity for mobility. Job dissatisfaction occurs when the worker perceives himself in a situation where he is unable to advance or move. Educators may consider mobility as an essential ingredient to the individual teacher.

Mobility is commonly viewed only in terms of consequences to the school structure. Items such as cost of recruitment, curriculum upheaval and faculty stability may be attributes to change in a system rather than deterrents. Both the system and the individual teacher may need mobility.



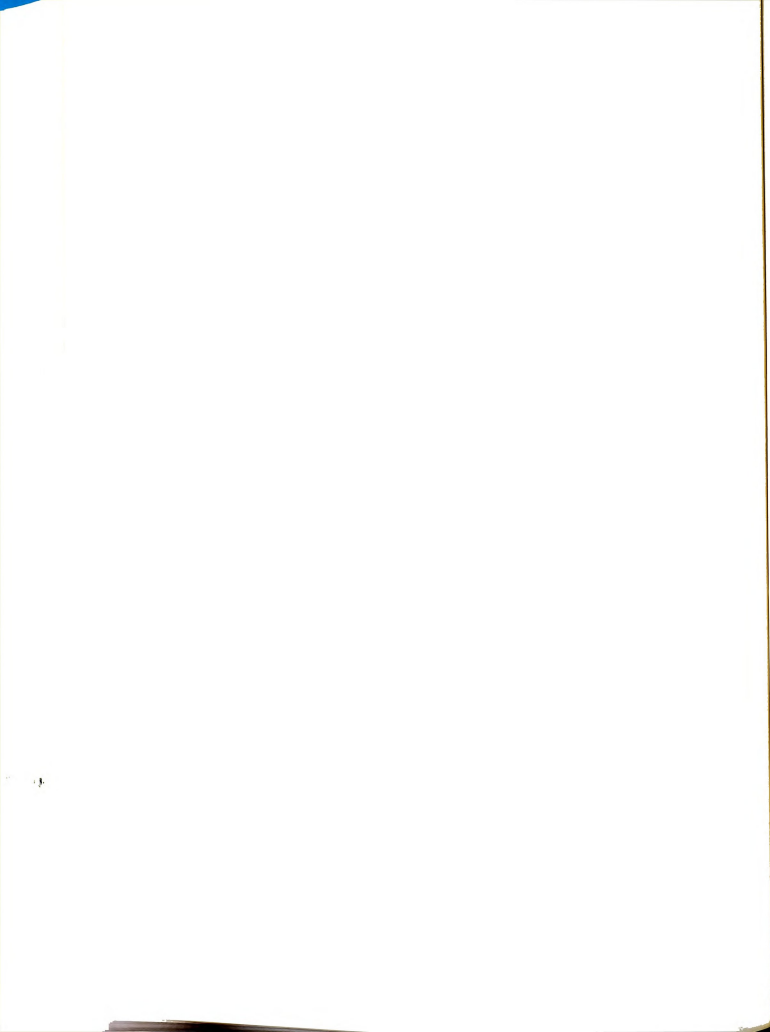
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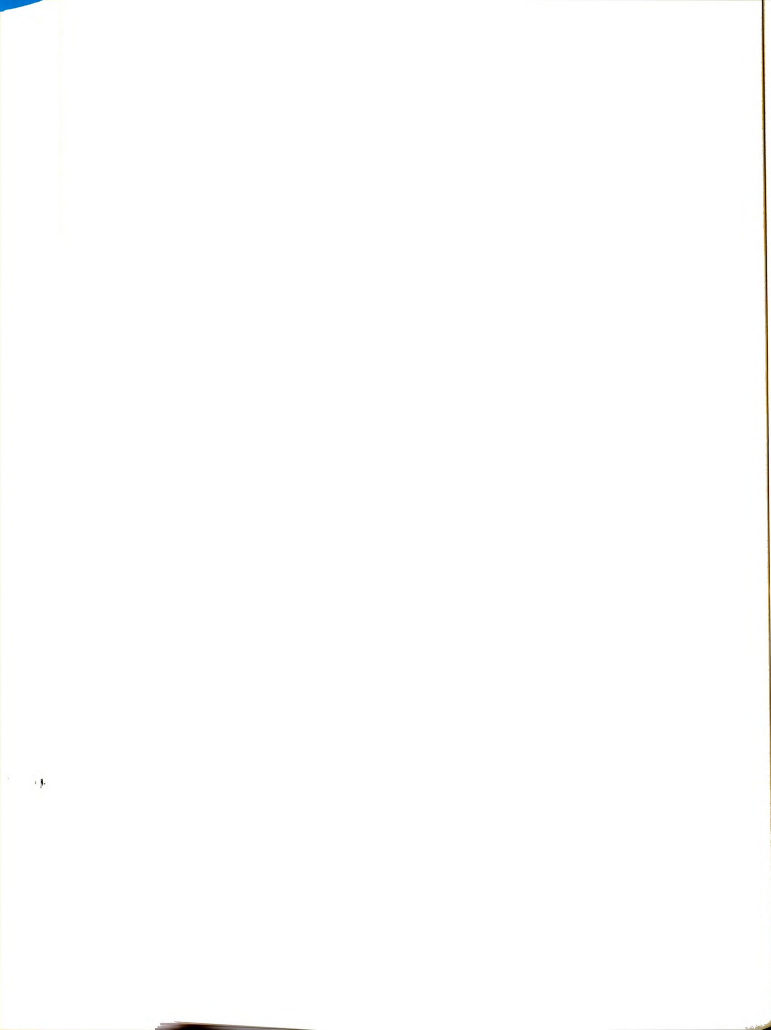
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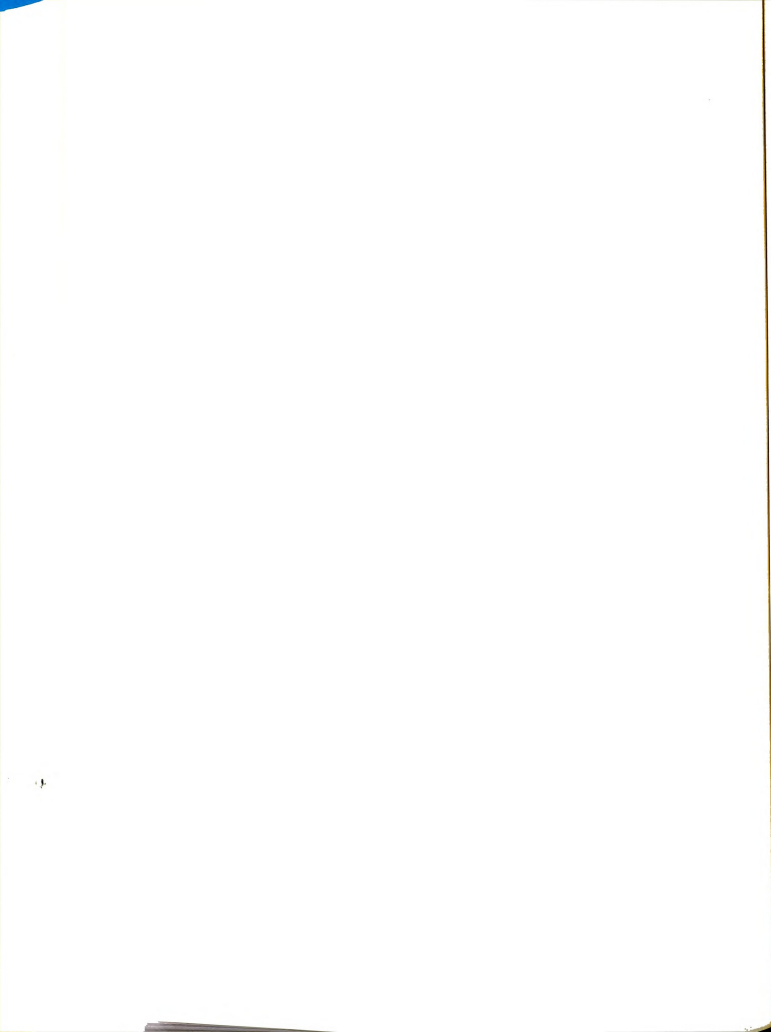
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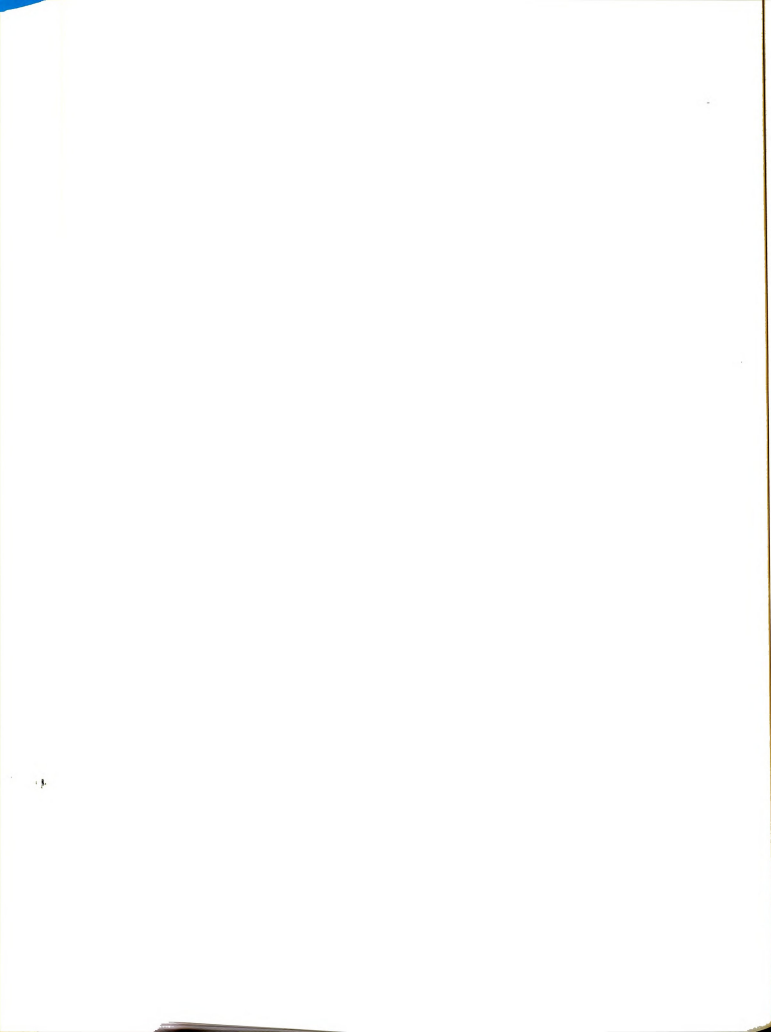
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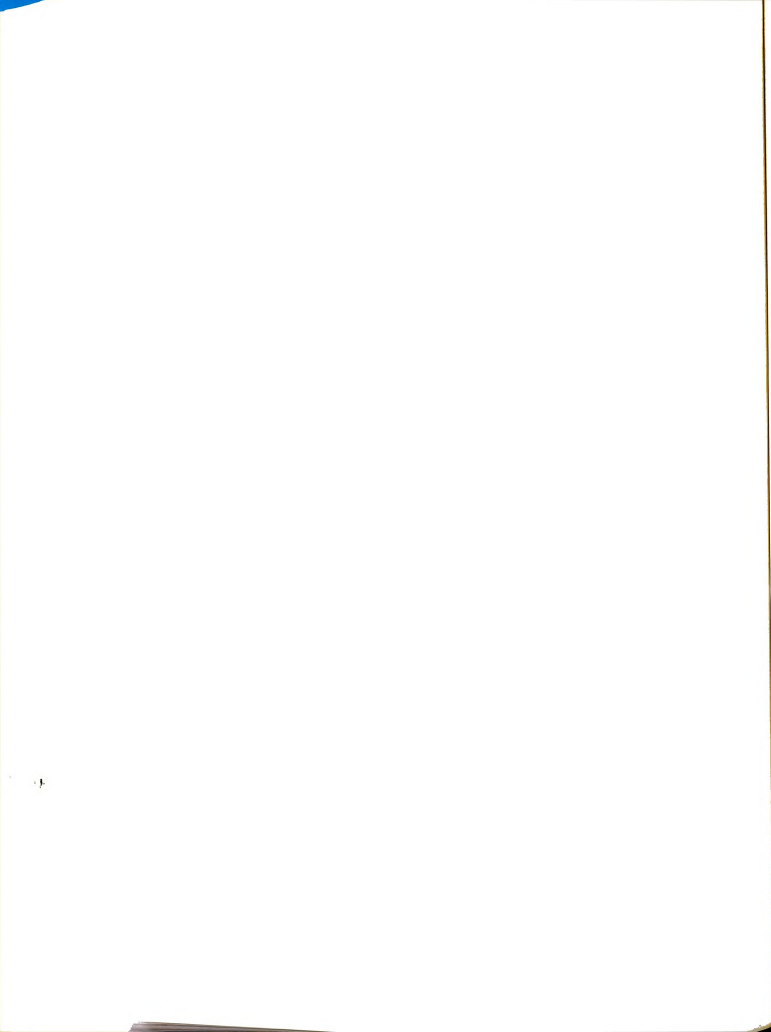
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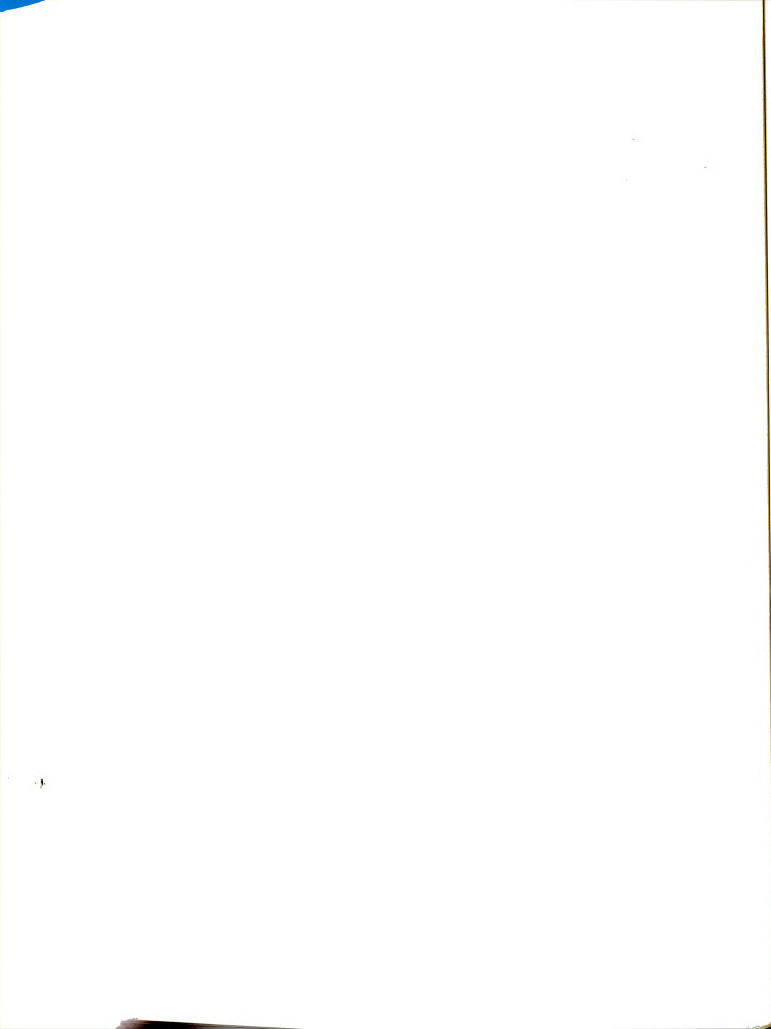
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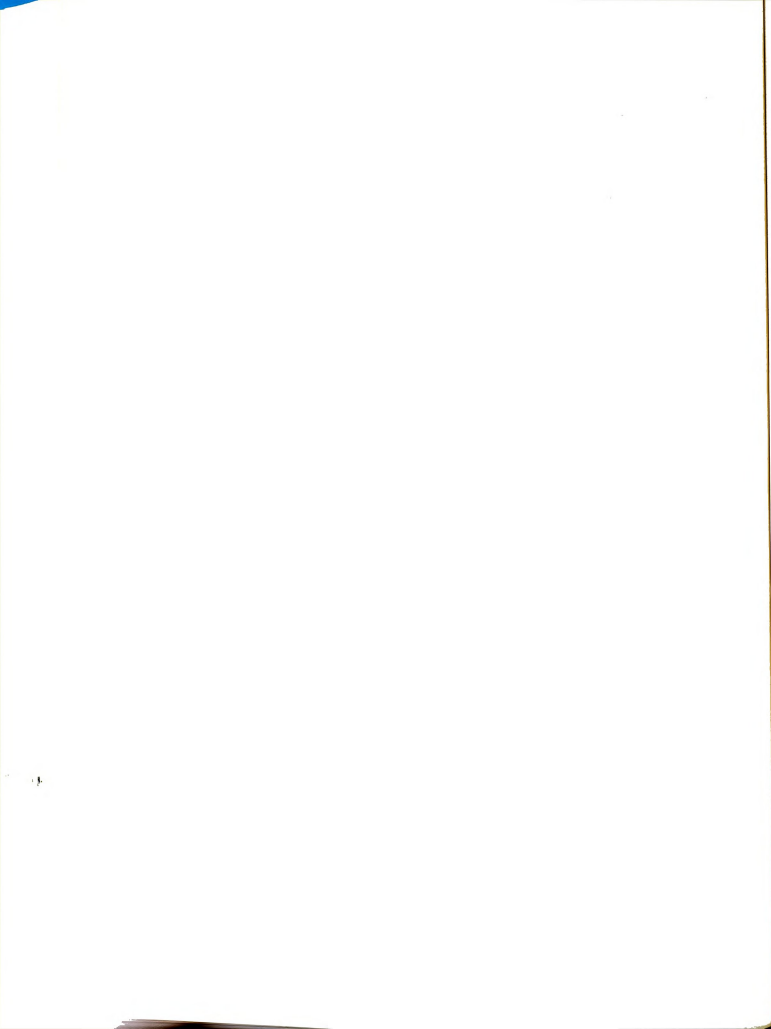
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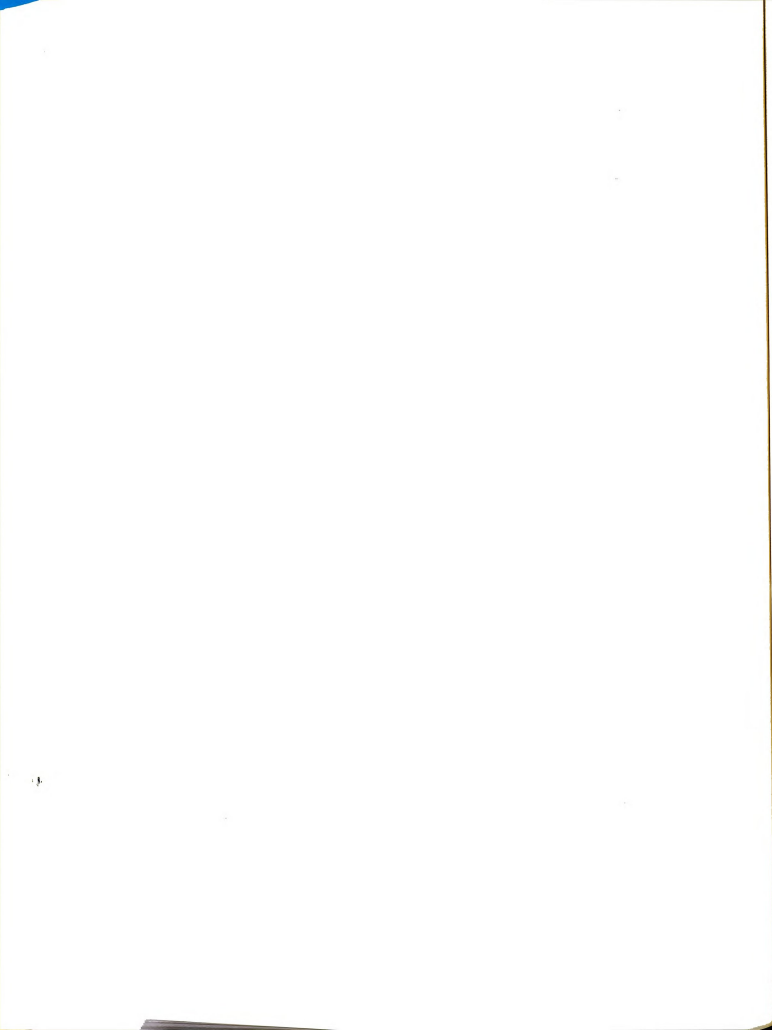
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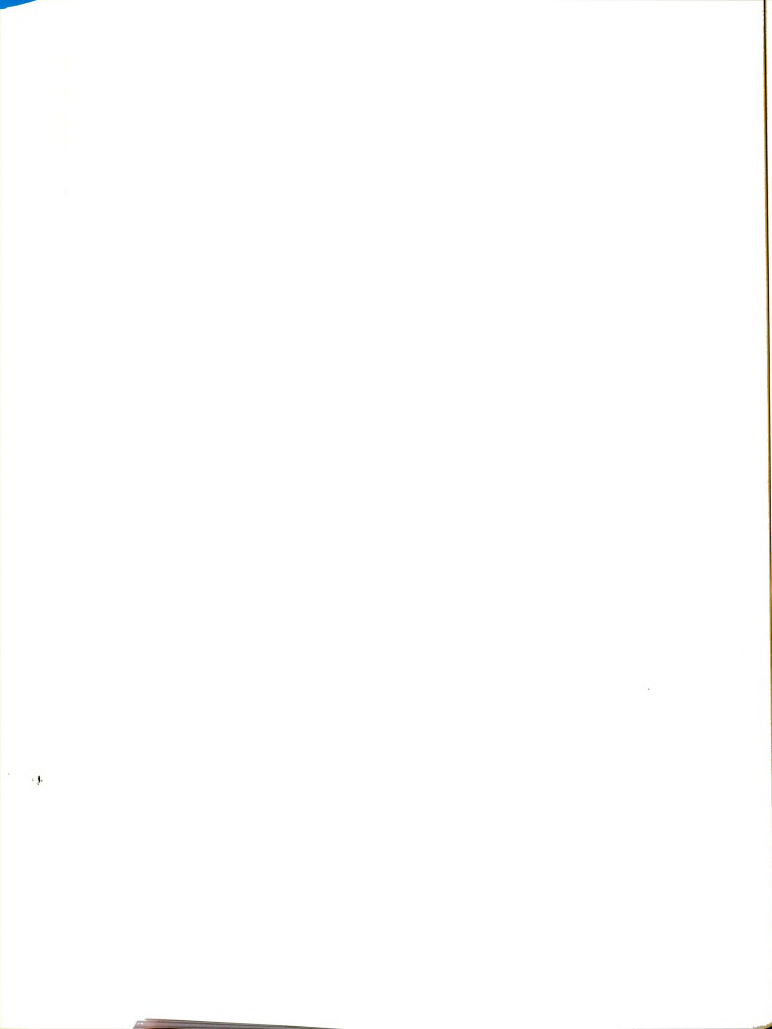
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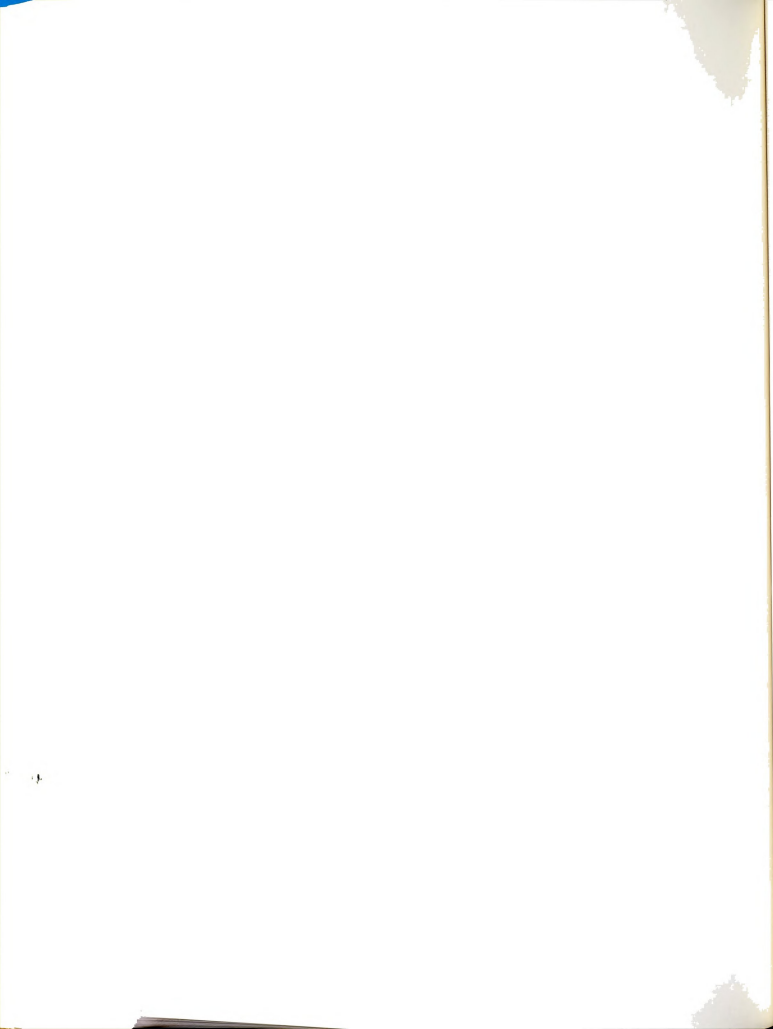
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APPENDICES



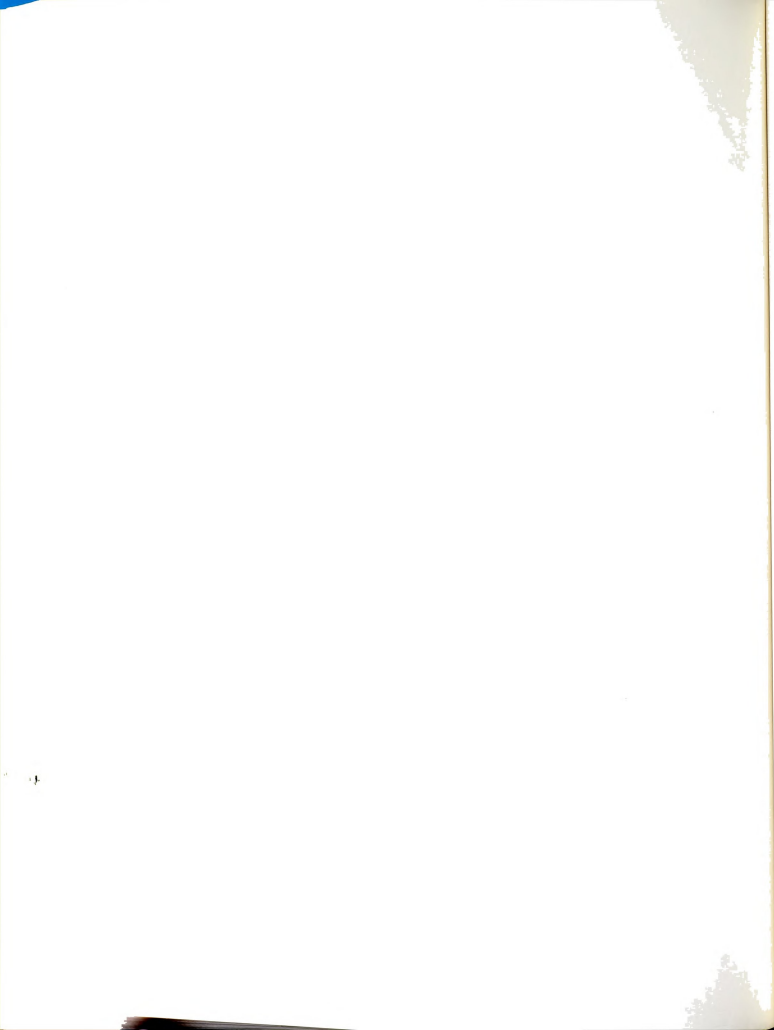
APPENDIX A

LETTERS SENT TO SUPERINTENDENT OF SCHOOL
SYSTEMS AND MEMBERS OF THE SAMPLE



APPENDIX A-1

LETTERS TO SUPERINTENDENTS OF
SCHOOL SYSTEMS



1428-I Spartan Village
East Lansing, Michigan 48823
September 6, 1968

Dear Mr.

Your school has been randomly selected to participate in a study of mobility of industrial education teachers in the State of Michigan. May I obtain the name and school address of all industrial education teachers in the system.

You, I am sure, are quite aware of the increasing difficulty in employing industrial education personnel. A study by Dr. Rex Ray, Michigan State University, listed this area as being the most critical in the secondary school. This preliminary research may assist in obtaining greater insight into the problem.

The data obtained in this study will be compiled into a dissertation topic as partial fulfillment for a doctoral degree at Michigan State University.

Your assistance in obtaining the name and address of all industrial education personnel in your school system will be appreciated.

Sincerely yours,

Lowell D. Anderson

encl: abstract of study

Title of Project: An Analysis of Out-Mobile Secondary Industrial Teachers for 1968-1969 in the State of Michigan

Principal Investigator: Lowell D. Anderson

Contacting Agency: Michigan State University

Requested Federal Funds: Not Funded

Date of Project: July 1, 1968 to August 31, 1969

ABSTRACT

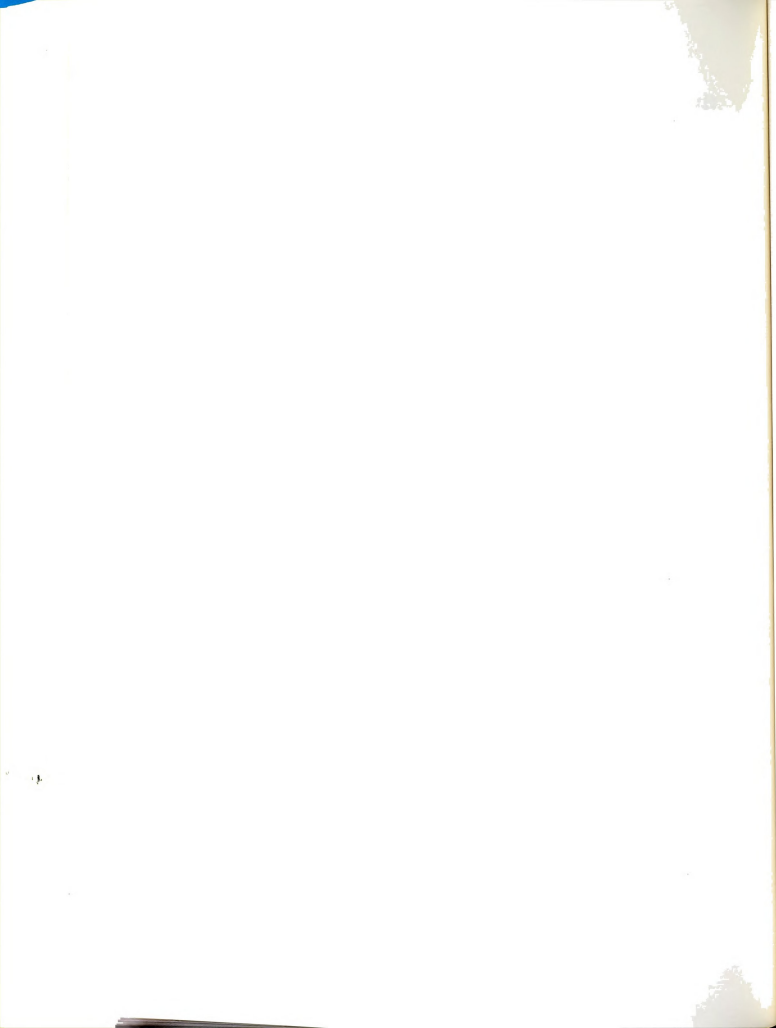
State of Purpose. The purpose of this study will be to determine (1) the percentage of out-mobile industrial education teachers in one year, and (2) the difference in self-perception between teachers remaining and teachers leaving the profession as revealed through a questionnaire and telephone interviews.

Importance of the Study. Teacher demand for industrial education personnel has become critical in the State of Michigan. Dr. Rex Ray, in a study which was done at Michigan State University to determine the area of highest teacher demand, concluded, ". . . the subject areas of industrial arts, English, and mathematics were those where the need for teachers was most critical in the state."

Out-mobility would appear to be one of the factors contributing to the problem of teacher shortage. Data to validate this as a problem is not presently available in the State of Michigan.

If out-mobility is a problem of significance and the self-percept of those individuals is different from individuals remaining in teaching then an evaluation of present methods of teacher preparation should be considered.

Method of Study. The population will be composed of secondary industrial education teachers in the State of Michigan. It will be determined by: (1) grouping of school systems by population categories, (2) random selection of school systems from the groups, (3) identification of all industrial education teachers in random selected groups, (4) random selection of equal proportions of teachers from the groupings forming a working population of 500. A questionnaire will be sent (September, 1968) to each member of the population. Data will be retained for one school year. A follow-up questionnaire will be sent to determine those who have become out-mobile. A comparative analysis will be made of the responses of the teacher to the out-mobile teacher.



APPENDIX A-2

FOLLOW-UP TO SUPERINTENDENTS



1428-I Spartan Village
East Lansing, Michigan 48823
September 13, 1968

Dear Mr.

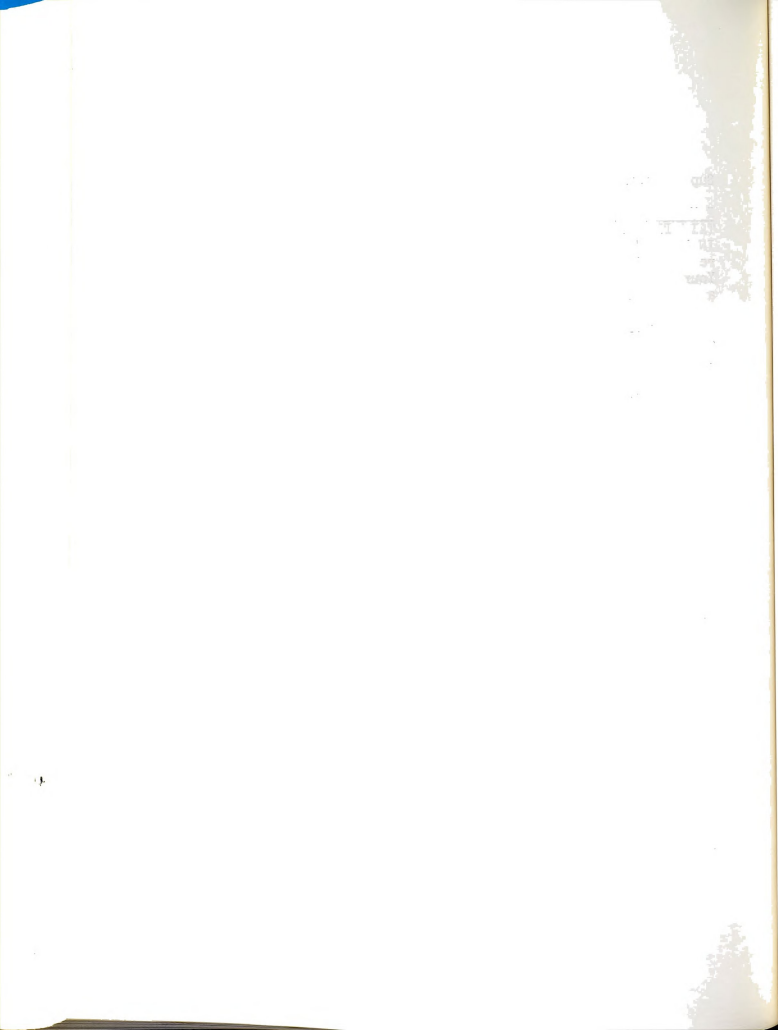
You received a letter dated September 6 requesting the name and address of all industrial education personnel in your school system. You possibly have begun processing to return the requested information. If you have not given this your attention, would you please do so.

The response to this request has been extremely good considering the amount of time required of the administration and staff in getting the new school year started. Your school becoming involved in this survey would of course increase the validity of the results.

Please help by returning the name and address of all industrial education personnel on your staff.

Sincerely yours,

Lowell D. Anderson



1428-I Spartan Village
 East Lansing, Michigan 48823
 September 20, 1968

Superintendent:

I HATE TO APPEAR A PEST-----BUT I WOULD REALLY LIKE TO OBTAIN THE NAME AND ADDRESS OF ALL INDUSTRIAL ARTS TEACHERS IN YOUR SCHOOL SYSTEM. Superintendents in the state have responded quite well-----but your help is really needed. Your time is most valuable-----but maybe you could find a little time for me.

Some interesting comments have been related to me in addition to that information requested. I wish to pass on to you what other superintendents have said.

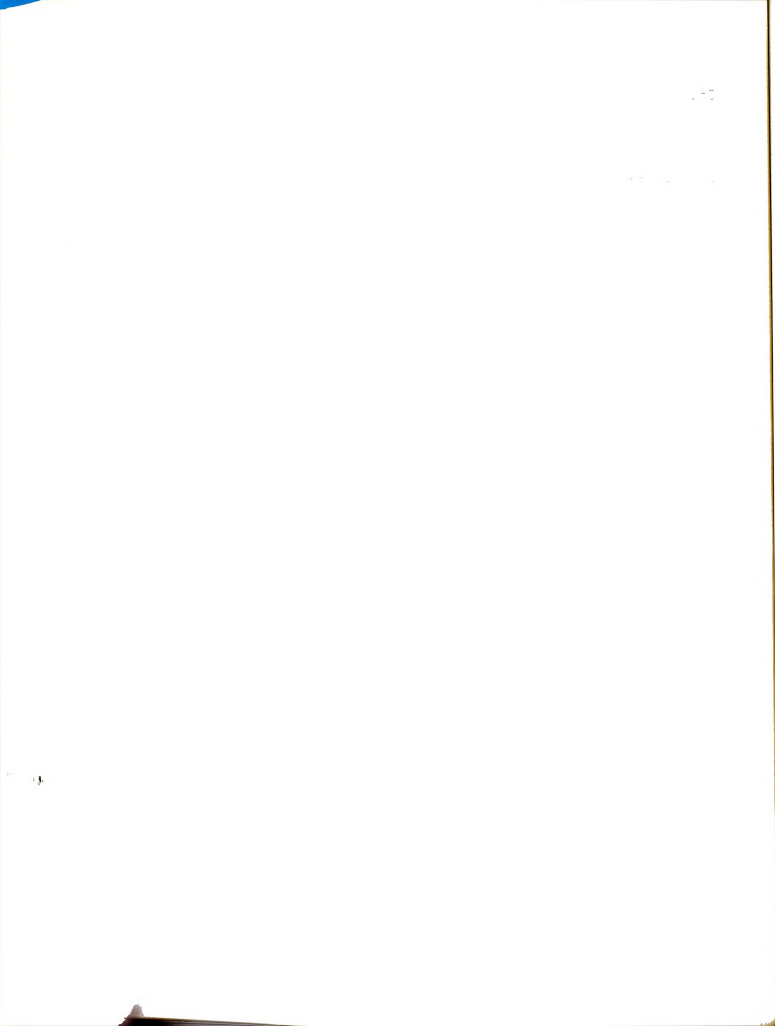
"_____ does not have all his education courses, he has been certified for 90 days due to the fact that we absolutely could not find a qualified teacher."

"YOUR TOPIC IS VALID AND TIMELY. . . Our industrial arts teacher resigned in July to accept a position in industry after being here three years. . . I'm sorry I do not have a name to submit."

. of course not all is rosey. . . . one says, "The lack of industrial arts teachers in the public schools is indeed critical. It has been for some time. We are aware of where these teachers go, in this area at least, and why. Most schools have this information. We fail to see any value in researching this aspect of the problem and decline to participate." This immediately elicited a response from me asking "WHY?" "PERCENTAGE?" and "WHERE" do they go?

. of course the less sure ask, "For our information, we would appreciate receiving a copy of any conclusions at which your study arrives." This school system was unable to fill two permanent positions.

Mr. Howard S. Decker, Executive Secretary of the American Industrial Arts Association says, "In reading the abstract of your study, it would seem to me that a study of the reasons why industrial arts teachers leave their positions would be extremely valuable to the profession in view of the critical shortage which exists in the field."



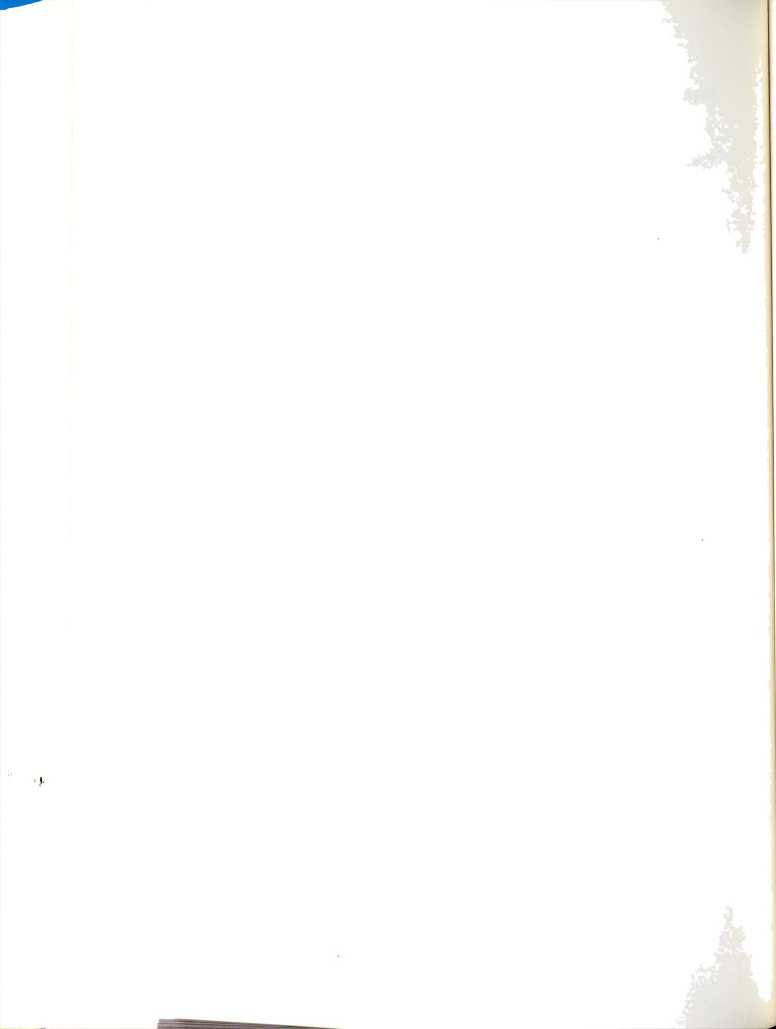
Page 2

September 20, 1968

Your response to my request, even as a quotable quote, is most valuable. Information will be used in such a manner as to eliminate any possibility of it being used as an indictment against you or your school system.

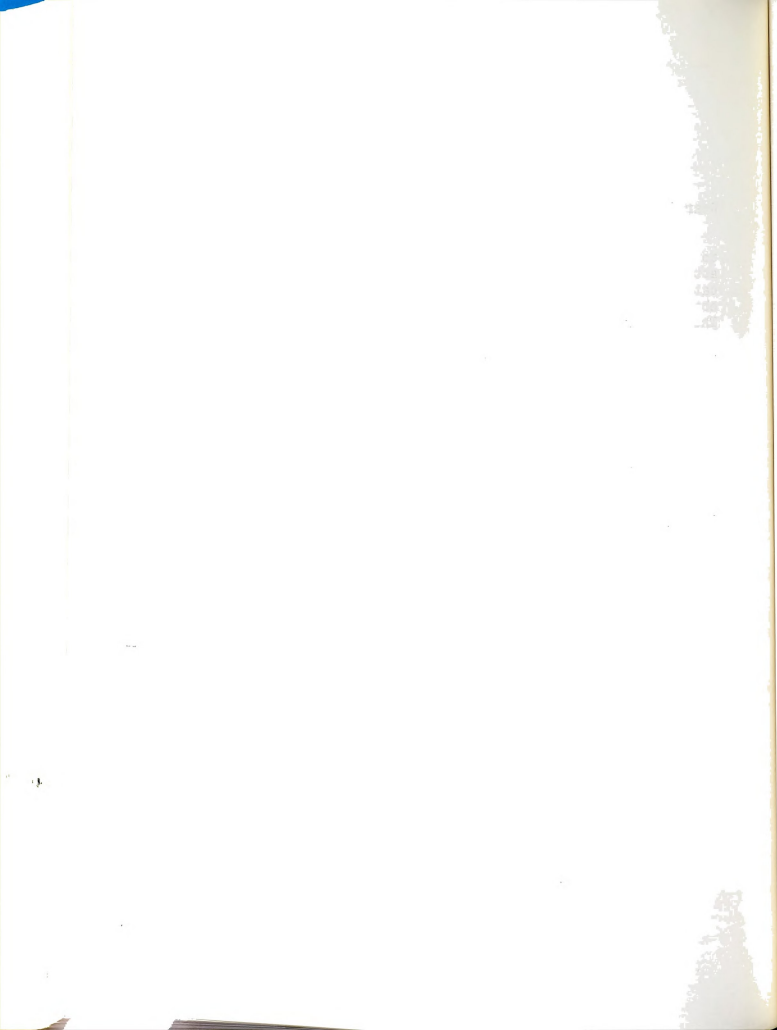
Sincerely yours,

Lowell D. Anderson



APPENDIX A-3

LETTER TO SAMPLE OF INDUSTRIAL
EDUCATION TEACHERS



January 12, 1969

Dear Industrial Education Teacher:

Through a sampling process, you have been selected to participate in a research project involving teacher attitudes. Prior to your selection, we identified and categorized the school districts of Michigan. Also, we obtained permission to do research work in your district. The superintendent, or another official in the school system, submitted to me a listing of all industrial education teachers. From the 754 industrial education teachers, you were selected to participate in this study.

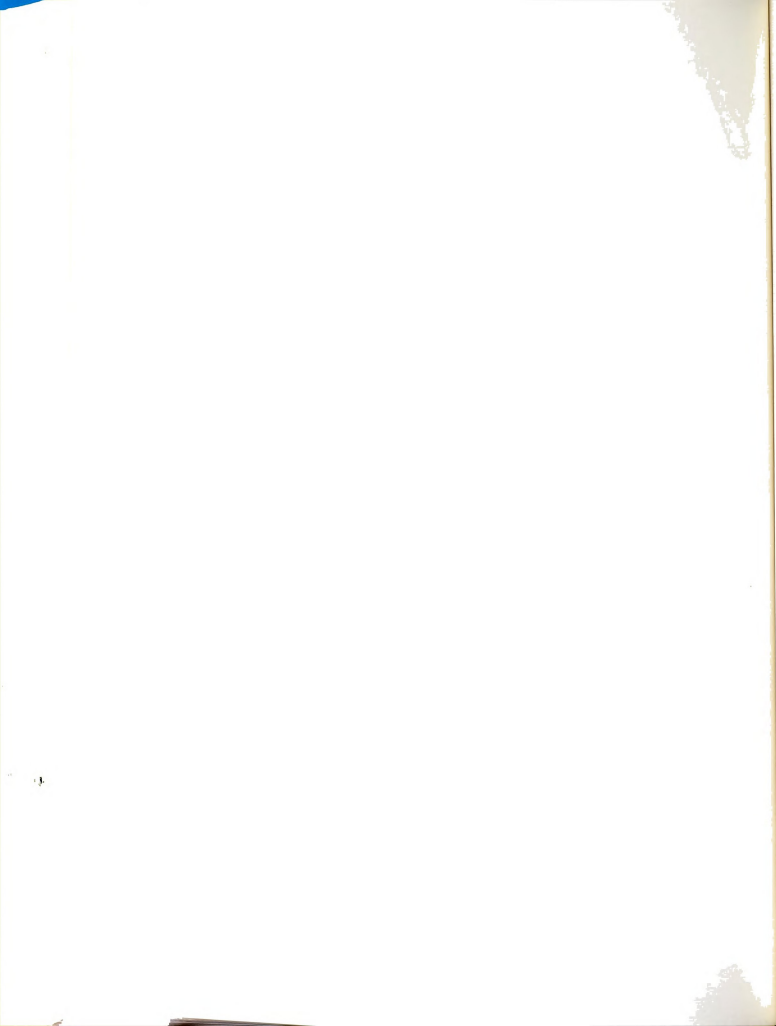
The enclosed questionnaire is a major portion of the research. Your responses are completely confidential and will not be published in any manner so that you or your school district may be identified. The code number at the top are for identification purposes; when I have received your questionnaire, only the code numbers are used and your name is no longer associated with the test instrument.

The teacher attitude questionnaire has been developed during the past six months. A preliminary sample of 54 teachers responded to it for validation. The present instrument has a reliability coefficient greater than .95.

Your help in making this study a success will be invaluable to the industrial education teaching profession. Sampling techniques require a high percentage of returns from members of the sample in order to validate the study. This study needs your best response to the questions on the instrument.

Sincerely yours,

Lowell D. Anderson
Industrial Education Teacher



APPENDIX A-4

FOLLOW-UP TO SAMPLE MEMBERS

January 22, 1969

Dear Industrial Education Teacher:

I realize that as a teacher in the public schools of Michigan you are busy with the many daily problems which confront the teacher. Teaching in the classroom is not presently my role, but you, the industrial education teacher, are of prime concern. In conjunction with obtaining a better understanding of you, I need, and would greatly appreciate your returning the questionnaire which you received from me quite recently.

I would also like to share with you a poem which I recently read while on a short trip to Kamp Kett. I hope you can enjoy it as much as I, with its many applications:

"Daddy's Tracks"
 Yea, las night, it snow a heap. . .
 On the level two feet deep. . .
 Daylight time or just before. . .
 I start out to do dem chore. . .
 My boy, Gus yell, me go too. . .
 I say, snow too deep for you. . .
 Right quick he answer back. . .
 I can step in "Daddy's tracks". . .
 Den his mother pat his head. . .
 "Gude boy, gus," was all she said. . .
 But I know she think lots more. . .
 When we start to do dem chore. . .
 . . . Little boys walk everday. . .
 Where the old man leads the way. . .
 Better walk straight like a crack. . .
 When boys step in "Daddy's Tracks."

A. G. Kettunen
 Poet and Philosopher

Your attention to the questionnaire and returning it to me as quickly as possible will be greatly appreciated. If you have accidentally misplaced the original questionnaire I would be most happy to send you a second.

Sincerely yours,

Lowell D. Anderson
 Industrial Education Teacher

January 28, 1969

Dear Industrial Education Teacher

Semester grades are possibly completed now and the second half of the year is in progress. This period is usually very demanding on time and leaves you exhausted at the days end. In this rush, maybe you have not had an opportunity to fill out and return the questionnaire which you received from me during the first week of this month.

Your return of this questionnaire is essential to this study. Presently the returns are slightly over 50 per cent. This percentage return could not be used with any degree of validity in projecting to the population. A study such as I am conducting does have justification in the present schema of the industrial education teacher in the State of Michigan.

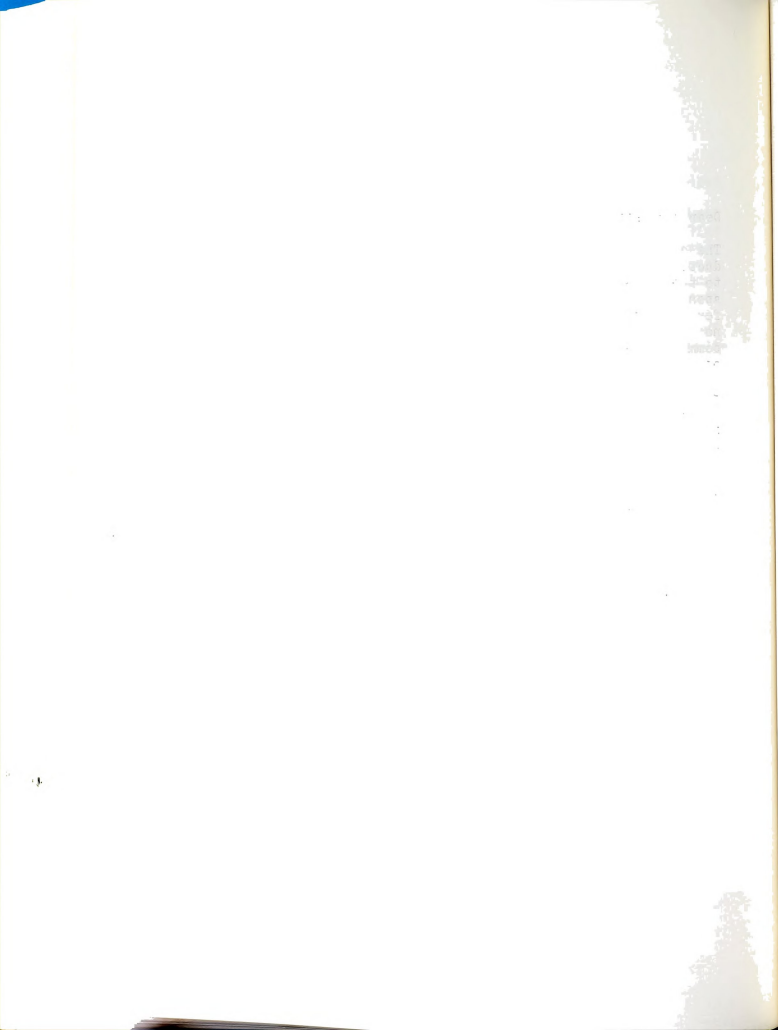
Howard Decker, Executive Secretary of the American Industrial Arts Association, stated after reading the abstract that this information, "... would be extremely valuable to the profession in view of the critical shortage (referring to teachers) which exists in the field." Lowell Burkett, Executive Director of the American Vocational Association, Inc. read the abstract with interest but due to regulational policy cannot officially endorse any research project. Frederick D. Kagy, American Council on Industrial Arts Teacher Education, "... encourages ... research which will add to our knowledge of teacher education and the technical fields."

I am sure that you are aware of the critical position of industrial education teachers in the State of Michigan. The past years have found the supply far short of the demand. A better understanding of the problem is of critical concern to the profession.

Your returning the questionnaire as quickly as possible will help in one phase of the total study. I assure you that in no way will the information be identified with you. It is highly confidential, not even I, after checking the code and group number, can again associate you with the results.

Sincerely yours,

Lowell D. Anderson
Industrial Education Teacher



February 2, 1969

Dear Industrial Education Teacher:

The construction of the study which I am presently conducting is dependent on your help. I need your response to the questionnaire. The questionnaire asks you to respond how you feel towards particular facets of your profession or how you think others feel towards you. In no way am I requesting you to go about the school or the community and ask others; this response is your best opinion.

Presently, the return to the questionnaire is only slightly above sixty per cent. This percentage is still too low to make any valid analysis. Your return is essential to the study.

If you are not presently an industrial education teacher, would you please indicate this; and, if possible, when you began your present profession.

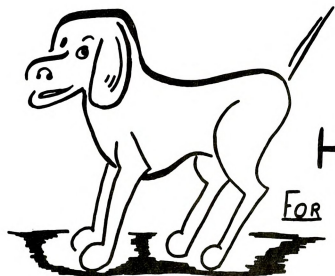
The questionnaire which I have enclosed is identical to the first one which you received. I thought possibly that the first has become misplaced or is not convenient at this time.

Your assistance in helping gain a greater understanding of industrial education teachers in the schools of Michigan will be appreciated.

Sincerely yours,

Lowell D. Anderson
Industrial Education Teacher

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I'VE HUNTED
AND
HOUNDED...
FOR YOUR RETURN!

I NEED YOUR RESPONSE _____
YOUR QUESTIONNAIRE IS
IMPORTANT—!

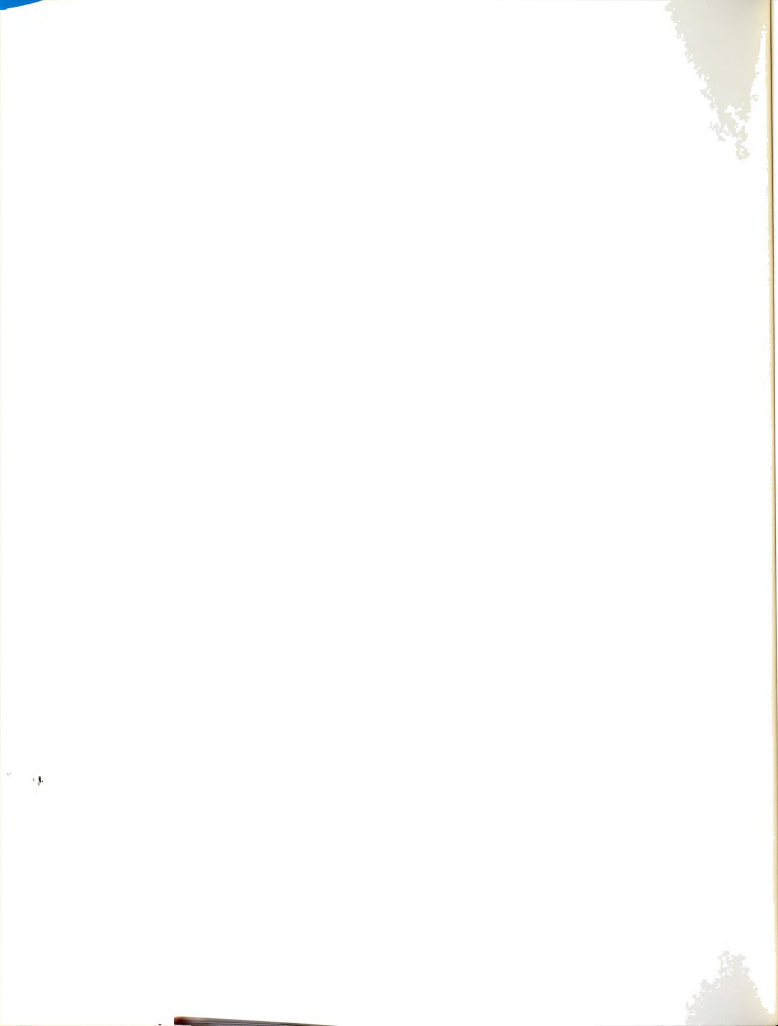
YES, RESPONDENTS HAVE SAID ©;:†!

— BUT YOUR OPINION
IS IMPORTANT.

PLEASE RETURN IT!

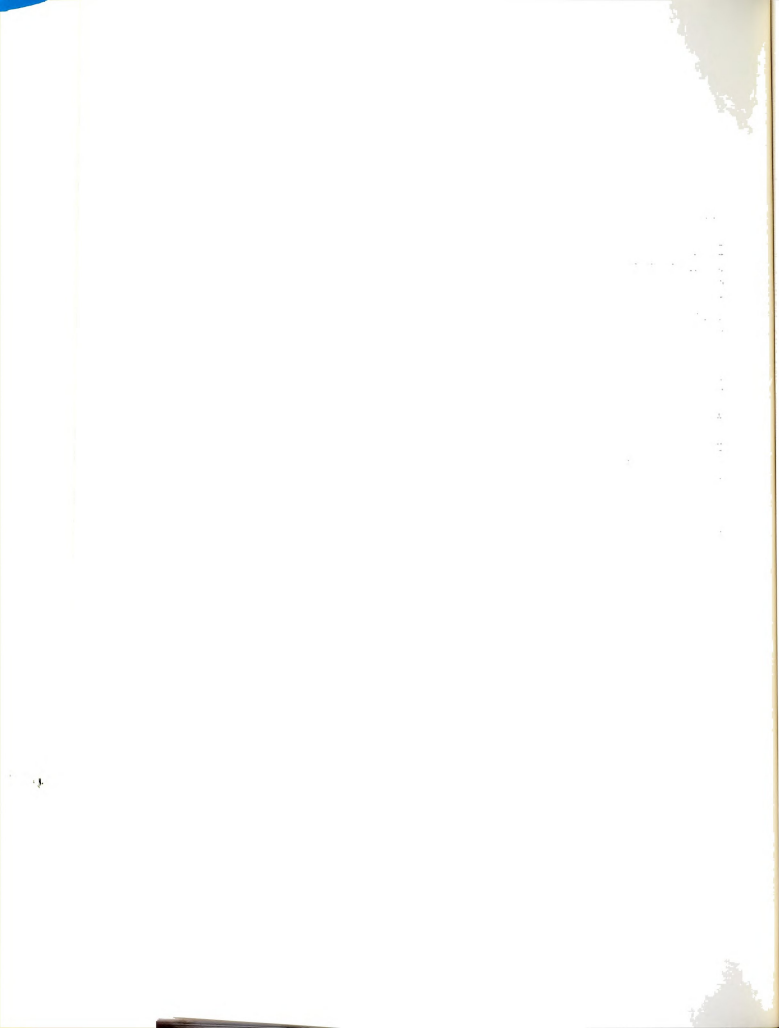
LOWELL D. ANDERSON





APPENDIX A-5

LETTER SENT TO IDENTIFY OUT-MOBILES



1428-I Spartan Village
East Lansing, Michigan 48823
May 2, 1969

Dear Industrial Education Teacher:

Thank you for responding to my questionnaire requesting teacher opinions. Your cooperation was greatly appreciated. Now I need your help again, for the second and final phase of the study. Please respond to the questions on the enclosed pink sheet. The questions ask whether you will be teaching industrial education courses next year, 1969-1970, or will be employed in a different capacity. Your response, whether you intend to teach or not, is essential.

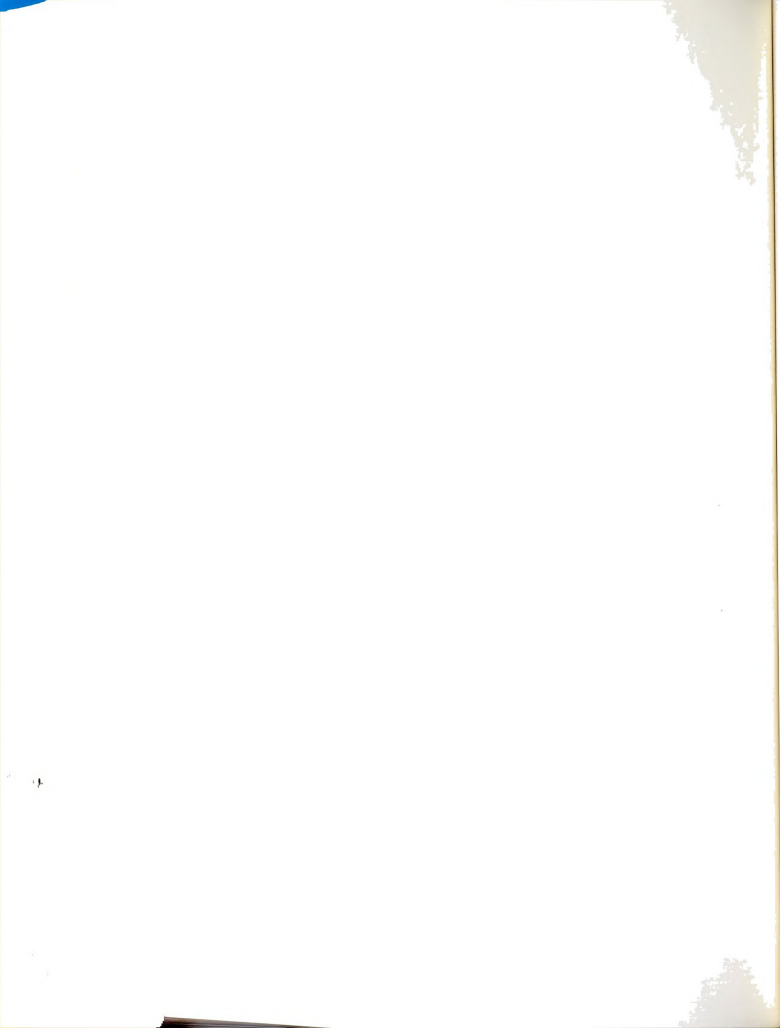
Indications are that a number of non-tenured staff will be released in some school districts. If you are being released because of school economic problems or similiar reasons, respond to the question according to your desired employment. For example, negotiations are presently in progress and some teachers may be released; but, your desire is to maintain your present occupational role as an industrial education teacher. Then, respond, "I will be teaching next year."

I need to know if your employment next year requires fifty per cent or more of your time as an administrator, coordinator or as a teacher in a different subject area. Please fill in the position you will have next year if it is different from your present employment. Indicate if you will be attending a college or university as a full-time student.

Your willingness to respond to these items is gratefully appreciated. An envelope is enclosed for the return. The information is confidential and will not be divulged in any manner making it identifiable with you.

Sincerely yours,

Lowell D. Anderson
Industrial Education Teacher



RESPONSE SHEET

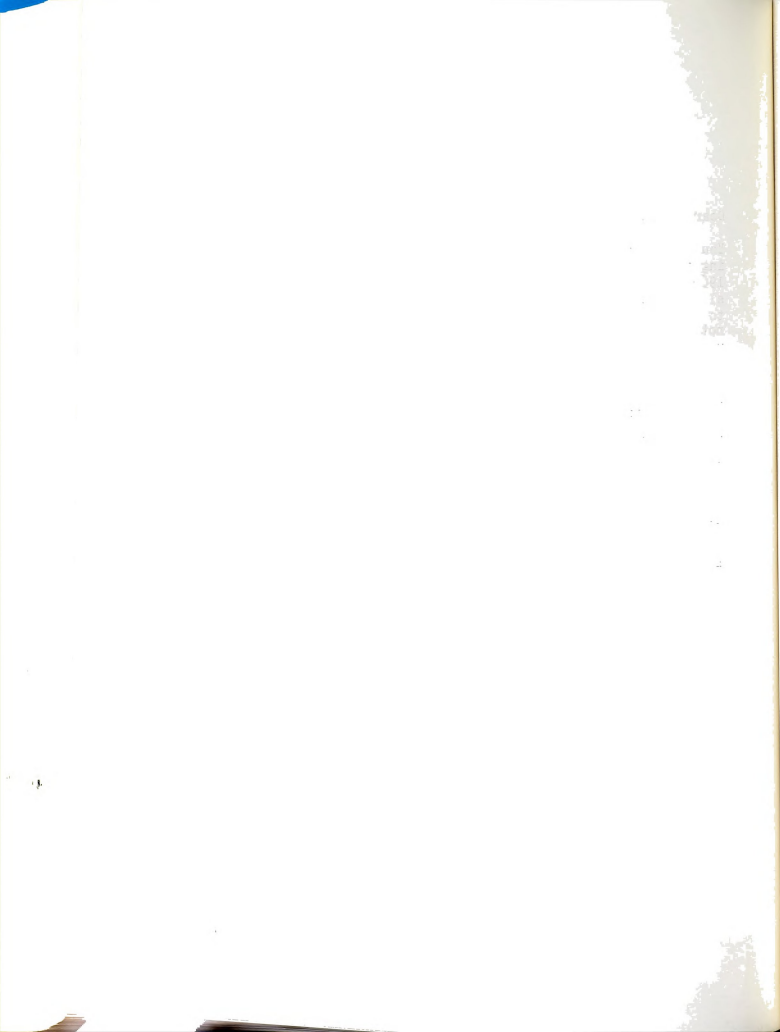
CODE NUMBER _____
GROUP NUMBER _____

A. CHECK THE STATEMENT WHICH BEST DESCRIBES YOU.

1. I will be employed to teach industrial education courses next year. ☐
2. I will not be in the teaching profession next year, 1969-1970. ☐
- a) I will be employed as an administrator, coordinator, counselor or teacher of another subject area for more than fifty per cent of my working time next year. ☐
- b) I will be a full-time student in a university or college next year. ☐

B. COMPLETE THE FOLLOWING STATEMENT.

1. Next year I will be employed as a: _____
- _____
- _____



1428-I Spartan Village
East Lansing, Michigan 48823
May 14, 1969

Dear Industrial Education Teacher:

You may recall having received my letter of May 2 requesting information about your plans for the next school year, 1969-1970. Your response should be recorded on the pink slip which was included. In some cases, you are unable to respond to these questions at this time. Reasons for not making a decision could be very different for individuals in different school systems.

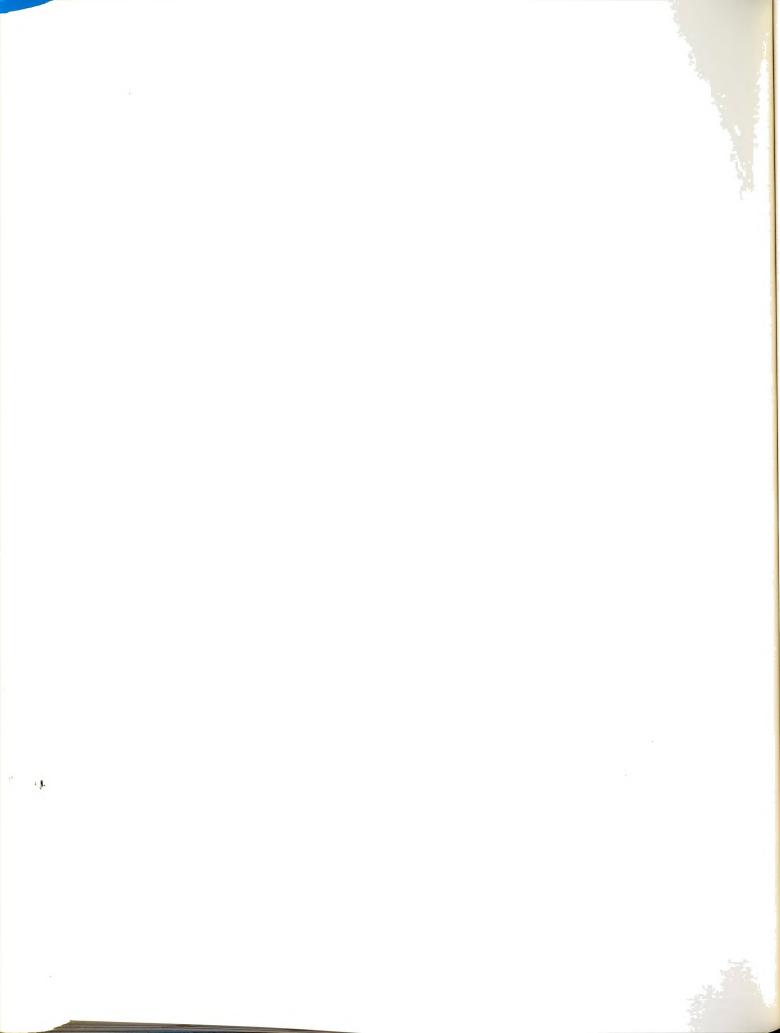
If you are unable to complete the pink slip at this time, please retain it and inform me of your decision at the earliest possible time. Your reply through the first several weeks of June will be valuable to the study. If the problem is a question of school millage, respond in terms of what you desire to do next year.

If you have not responded to any requests which have been sent since the beginning of the year, I would still desire that you complete the pink slip and return it. If you are not intending to teach next year, your response is still needed.

Your help is needed. All information is confidential. Identification of you as an individual will not occur in the final analysis.

Sincerely yours

Lowell D. Anderson



APPENDIX A-6

FOLLOW-UP LETTERS TO IDENTIFY
OUT-MOBILES

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1428-I Spartan Village
East Lansing, Michigan 48823
May 26, 1969

Dear Industrial Education Teacher:

This is just a short note to bring to your attention that the pink slip on which you may indicate your next year's plan has not been received. Returning this slip at the earliest possible date will be helpful.

I have enclosed a second pink slip and return envelope which you could use to indicate your present state of planning. Retain the first envelope and pink slip to report your final plan. Your response will be very useful to the study until the second week of June.

This study has been entirely financed by myself. Present indications are that the returns are lower than would be desired to make a valid study. You can help by returning your pink slip.

I am looking forward to hearing from you in the near future.

Sincerely yours,

Lowell D. Anderson

1428-I Spartan Village
East Lansing, Michigan 48823
June 6, 1969

Dear Industrial Education Teacher:

The final week of school is presently in progress for most teachers in the State of Michigan. This is usually an extremely busy period for the industrial education teacher. Hopefully your plans for next year have been finalized.

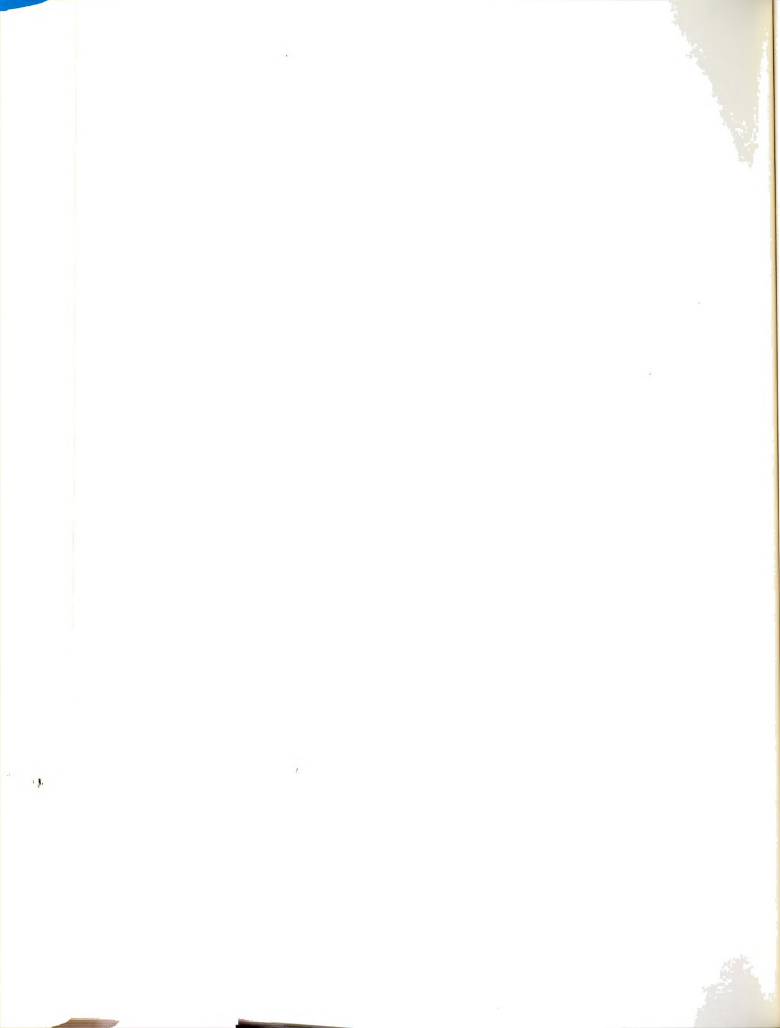
My records indicate that you have not returned the pink slip stating your plans. If you do not intend to teach your return is still essential to the study.

Please return this slip to me this week. Your response from a sample of industrial education teachers is necessary to make a valid study on the degree of mobility of industrial education teachers in the state.

Any assistance you can give me is appreciated. Your response is entirely confidential.

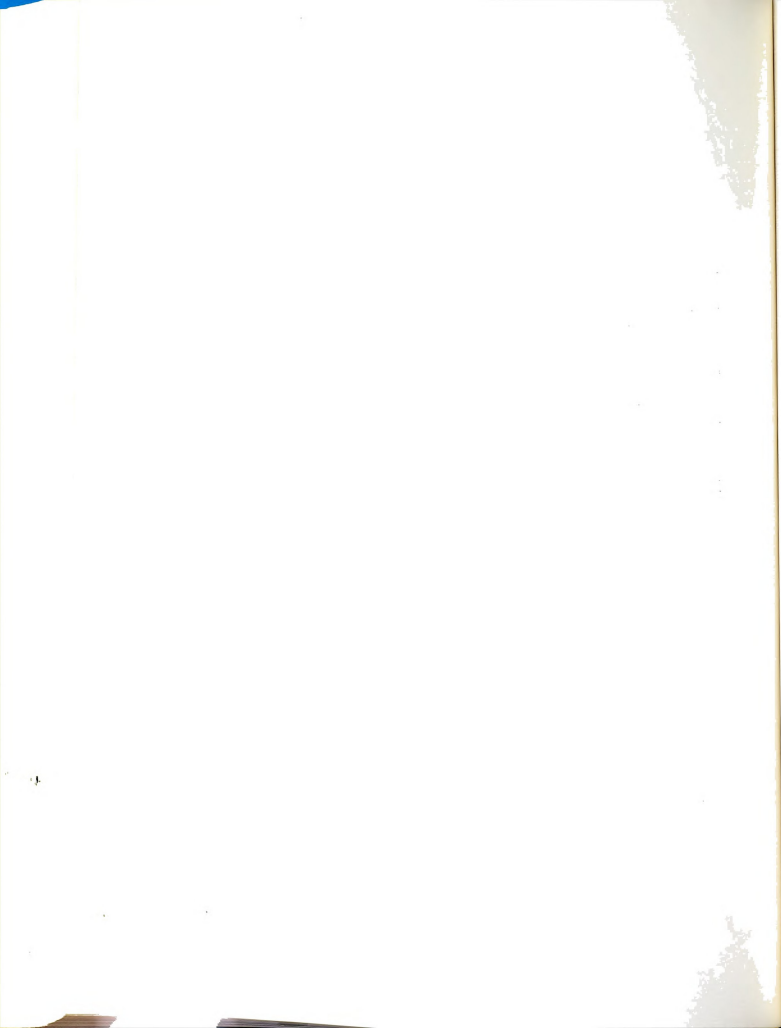
Sincerely yours,

Lowell D. Anderson



APPENDIX A-7

INTERVIEW REQUEST WITH OUT-
MOBILE DESIGNATES



May 20, 1969
1428-I Spartan Village
East Lansing, Michigan
Ph. 355-1042

Dear

I received your pink slip indicating that you possibly will not be teaching this coming school year. You may have surmised that the purpose of this study in which you are participating is to identify persons who are leaving the teaching profession. Examination of reasons "why" you have made this decision are of considerable interest.

I would like to obtain a time when I may either visit you in person or else speak with you on the telephone. I shall be contacting you by phone either Thursday or Friday of this week. An appointment for when we might get together would be desirable. I will not be visiting all persons from the sample who are leaving the profession but will talk with them by phone.

Topics which you and I may discuss regarding your decision are possibly best identified by you. Additional topics which we may consider are given as open ended statements on the enclosed sheet.

It is hoped that the information which you can give will be of assistance in development of a teacher preparation program which will better assist the individual in his role as a teacher. This is not to assume that fault lies with the teacher, but apparent limitations make it difficult to consider the student or the school system.

Your assistance has been greatly appreciated. Information which you can give me is confidential. No means of identification of you with the data shall be made.

Looking forward to talking with you.

Sincerely yours,

Lowell D. Anderson



APPENDIX A-8

INTERVIEW TOPICS WITH OUT-MOBILES

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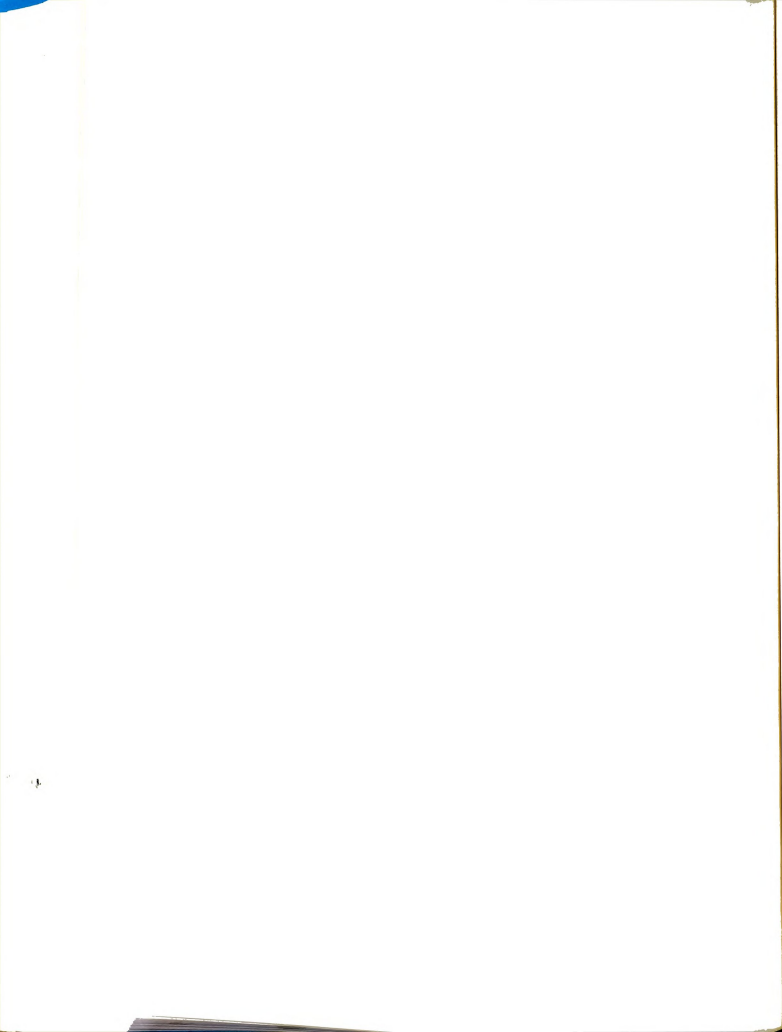
Possible Discussion Topics

1. When teaching in a classroom I feel
2. I think the faculty thought of me as
3. Teaching is the type of work which I
4. My abilities as a teacher I think are
5. I think of my status as a teacher as
6. I think of myself as being involved in
7. I think my opportunities for advancement are
8. If I were to remain in education I would want to
9. I think administrators in my school are
10. I needed from the administrators
11. I think of the students I taught as
12. The subject I taught to the students was
13. I felt my role in the community was
14. I think the community felt I was
15. I thought the work required from me as a teacher was
16. The wages paid me were
17. I think the relation between the wages paid me and
other people in the community were
18. I think the main reasons for my leaving teaching are
19. Other reasons for leaving teaching are
20. I would like to (project yourself into the future)
 - A. In five years
 - B. In ten years



APPENDIX B

TEST INSTRUMENTS AND T-SCORES
FOR ITEM SELECTION



APPENDIX B-1

PRETEST INSTRUMENT

Code number

Group number

Directions:

Classified

request

By

The number

position

The name

number

year

1944

1945

1946

1947

1948

1949

1950

1951

1952

1953

1954

1955

1956

1957

1958

1959

1960

1961

1962

1963

1964

1965

1966

1967

1968

1969

1970

1971

1972

1973

1974

1975

Code number _____

Group number _____

TEACHER QUESTIONNAIRE

DIRECTIONS: The following information is necessary for classification of the responses. Please fill out the requested information.

My age is _____. The number of years I have taught is _____.

The number of times which I have moved from one teaching position to another teaching position is _____.

The number of times I have moved from teaching to another occupation (other than teaching) and then returned to teaching in a public school system is _____.

I teach industrial arts. Yes _____ No _____. I teach technical industrial vocational education Yes _____ No _____. I teach in both capacities (an industrial arts teacher and a technical-vocational teacher). Yes _____ No _____.

The portion of time which I spend teaching industrial arts is GREATER THAN _____ LESS THAN _____ one-half of my total work load.

The portion of time which I spend as an administrator or coordinator is GREATER THAN _____ LESS THAN _____ one-half of my total work load.

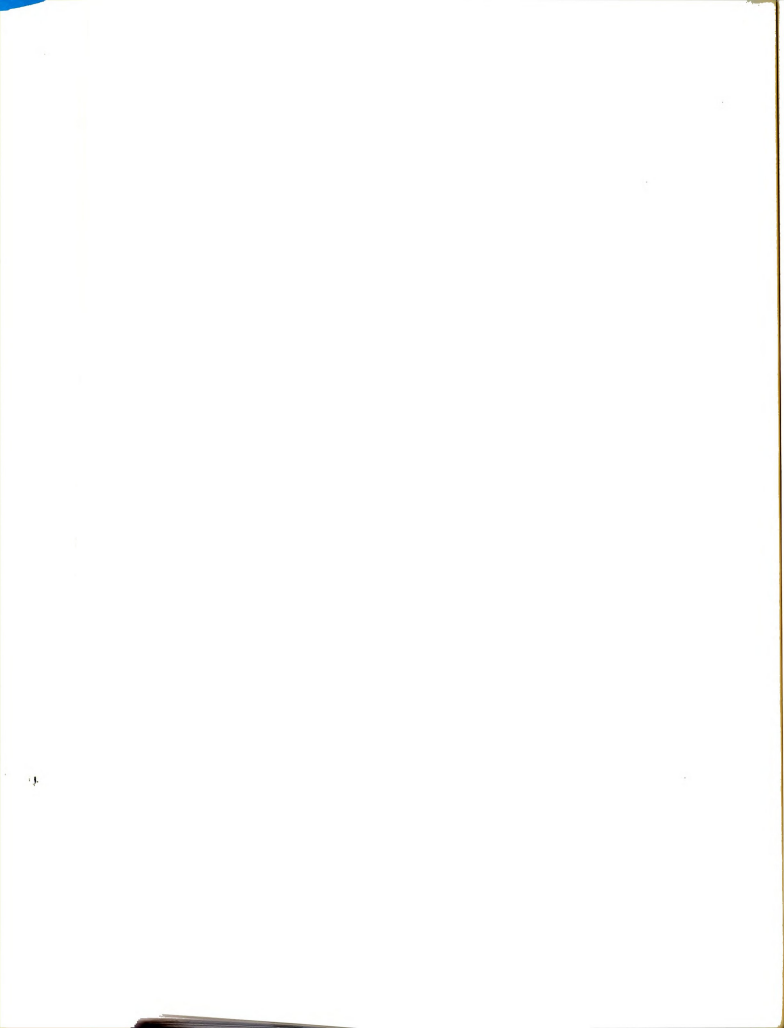
1. My relations with the administration in class scheduling is good.
2. My wages based on my formal education, in preparation for teaching, are adequate.
3. My general leadership ability is poor.
4. The faculty thinks the proportion of my work load spent in organization of facilities is average.
5. My present occupation does not give me the opportunity to do the type of work I enjoy most.
6. The administration views me as having average organizational abilities.
7. My relations with my neighbors are satisfactory.
8. The proportion of my work load spent in meetings and on organizations is excessive.

SA-STRONGLY AGREE, A-AGREE, U-UNDECIDED, D-DISAGREE, SD-STRONGLY DISAGREE

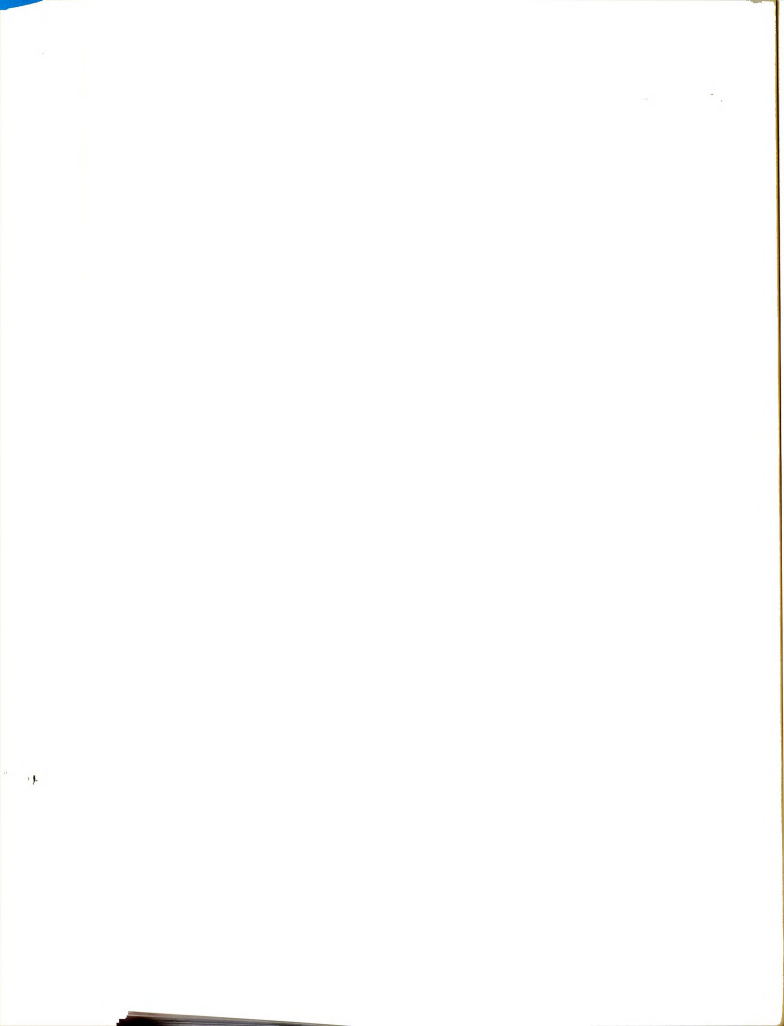
9. Members of the community think my relations with neighbors are satisfactory.
10. My opportunity to obtain an administrative position is excellent.
11. The administration thinks it is being fair in assignment of duties.
12. The administration thinks the number of preparations I am required to do is less than the average number required in our school.
13. The administration views my wages as being adequate for the amount of work required.
14. My contribution to the education of youth is essential.
15. The majority of the faculty think most students are understanding of other people's problems.
16. My present occupation does not provide me the opportunity to present the types of materials which are interesting to students.
17. I think of my intelligence as being average.
18. The administration thinks the employment procedures used in my employment were very good.
19. Members of the community think of me as being of average intelligence for teachers.
20. My wage, earned as a teacher, compared with other occupations, is not adequate.
21. The administration thinks of my wages, compared to the wages of other staff members, as adequate.
22. My capabilities as an organizer are poor.
23. The administration thinks that teaching is the work I enjoy most.
24. My productivity as a teacher is better than average.
25. The administration thinks my work load as determined by the length of the school year is adequate.



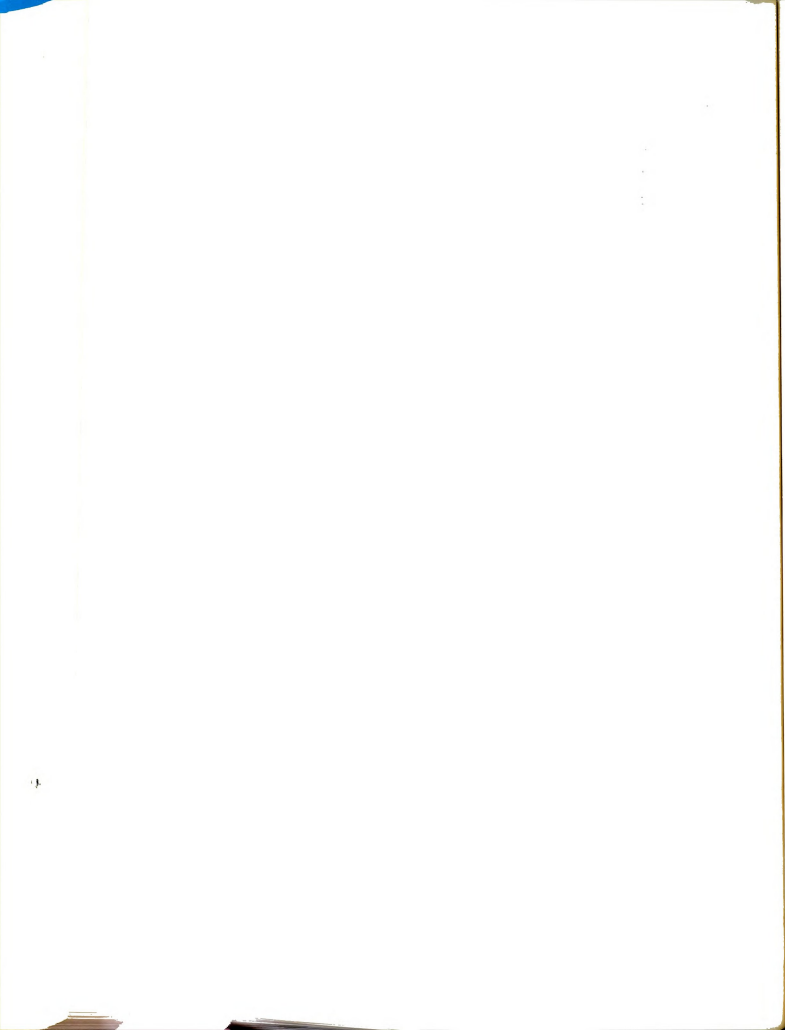
26. My present position, as a teacher, does not give me the status I desire.
27. A majority of the faculty think most of the students are well-adjusted.
28. I obtain a high level of social recognition in my present occupation.
29. The community thinks the wages paid me as compared to other occupations are adequate.
30. I have a good personality for teaching.
31. My association with church organizations is very good.
32. A majority of the teaching faculty think I have a personality which is well-suited for teaching.
33. A majority of the faculty think of me as performing a necessary part in the education of youth.
34. The community thinks the wages paid me for the work required are very good.
35. I think the administration is not helpful in solution of my individual problems.
36. My wages as compared to other staff members are adequate.
37. The administration thinks of me as having excellent teaching abilities.
38. The administration thinks it is helpful in solution of my individual problems.
39. A majority of the faculty think the students in our school are quite intelligent.
40. The behavior of the students I teach is good.
41. The possibility of my obtaining a college position is good.
42. The wages paid me for the amount of work I am required to do are adequate.
43. The community views me as having an excellent opportunity for advancement.



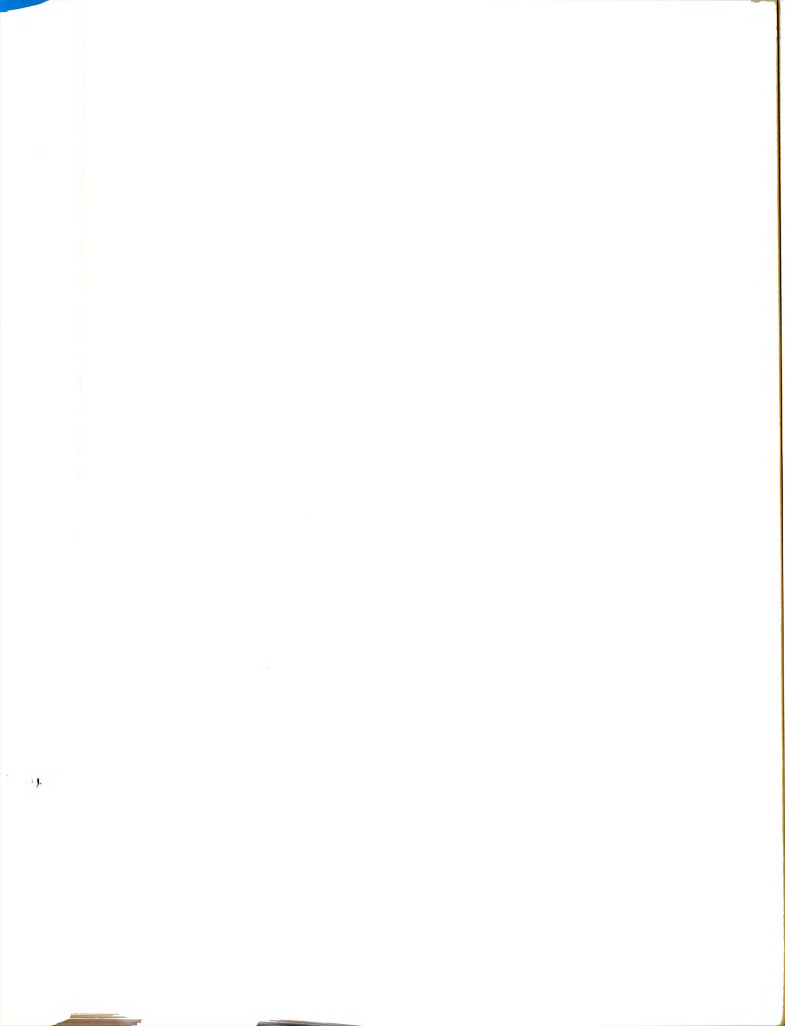
44. The administration thinks the portion of my work load, as determined by the number of classes I teach, is normal.
45. The administration thinks the probability of my obtaining a college position is very good.
46. The community thinks of me as having prestige in the community.
47. The proportion of my work load spent in organization of facilities is higher than average.
48. The community thinks my wages based on my formal education to become a teacher are adequate.
49. A majority of the faculty think the behavior of the students is poor.
50. A majority of the faculty think my relations with parents of the students are satisfactory.
51. I do not receive the amount of professional recognition I desire in my present occupational position.
52. The probability of my remaining in my present position is very high.
53. The administration thinks I will probably remain in my present position.
54. My students are industrious.
55. Members of the staff think the students are quite lazy.
56. The administration is helpful in solution of my classroom problems.
57. My teaching techniques are poor.
58. The teaching staff think of me as having prestige in my present position.
59. My students are uncooperative.
60. The students I teach are not very intelligent.
61. The administration thinks they are being fair in allocation of funds to subject areas.
62. My relations with community leaders are satisfactory.



63. My participation in clubs and organizations in the community is poor.
64. The administration thinks our relations relative to class scheduling are good.
65. The probability of my achieving a desirable level of economic earning in my present occupation is excellent.
66. Members of the community think my relations with community leaders are satisfactory.
67. The administration thinks our relations relative to class scheduling are good.
68. The opportunity for me to advance in my profession is not increased by moving within the profession.
69. A majority of the faculty think the students are cooperative.
70. The number of classes I teach, as a portion of my total work load, is normal.
71. Members of the community think my relations with business men of the community are very good.
72. Members of the community think my relations with business men of the community are very good.
73. My wages are not adequate for the type of student I teach.
74. Members of the community think my relations with church organizations are satisfactory.
75. The administration views me as having a personality well-suited for teaching.
76. The administration thinks I am very satisfied in my present occupation.
77. Most students are understanding of other people's problems.
78. The administration thinks my class size is comparable to other subject areas.
79. My required number of different preparations is normal for our school.



80. The wages paid me, based on the number of years I have taught, are adequate.
81. Members of the teaching staff think I am satisfied in my present occupation.
82. Budget allocations determined by the administration for my subject area are not adequate.
83. My present occupation gives me considerable satisfaction.
84. The teaching staff thinks the wages paid me, based on the number of years I have taught, are not adequate.
85. The administration thinks my opportunity to obtain an administrative position is poor.
86. My work load as determined by the length of the school year is comparable to other occupations.
87. My relations with businessmen in the community are satisfactory.
88. Most of the students in our school are well-adjusted.
89. My administration is very conscientious in assignment of duties.
90. The employment procedures used by the administration during my employment were good.
91. My present position is challenging.
92. The staff thinks of me as being quite intelligent.
93. My relations with parents of students are excellent.
94. I must change occupations in order to advance to the socio-economic position which I desire.
95. The number of students in my classes are comparable to other subject areas in our school.
96. The administration thinks the proportion of my work load spent in organization of facilities is above average for our staff.



APPENDIX B-2

T-SCORES FOR TEST STATEMENTS

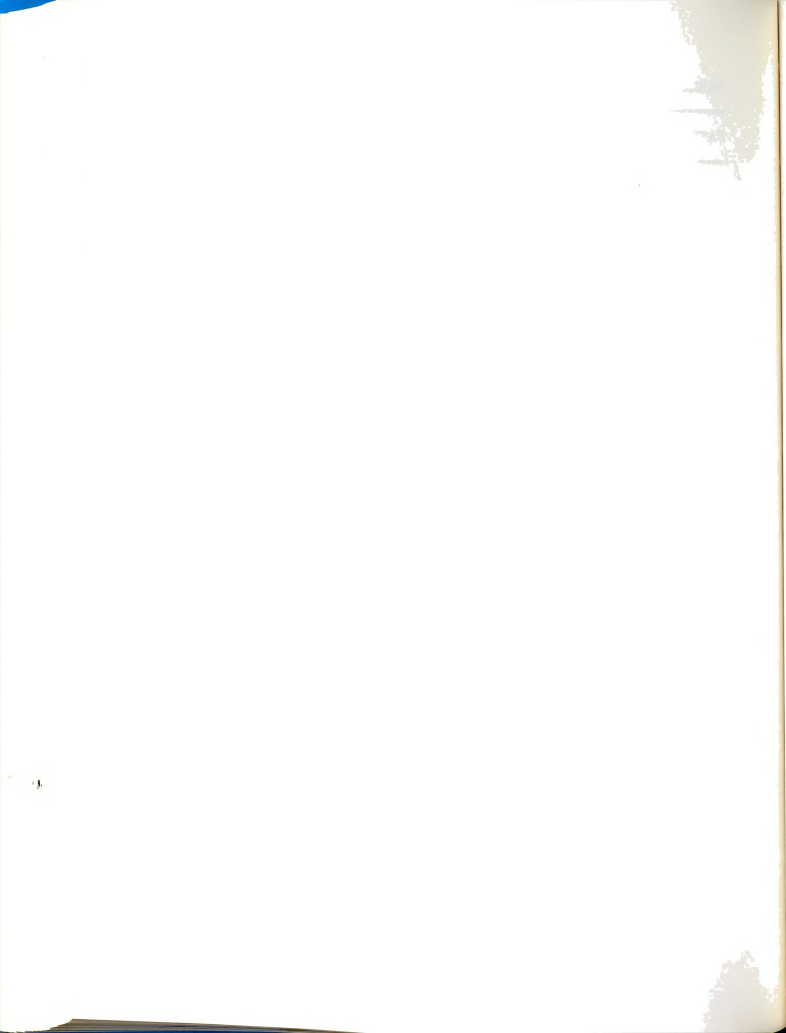
1000

1000

TABLE B.2--T-scores for test statements.

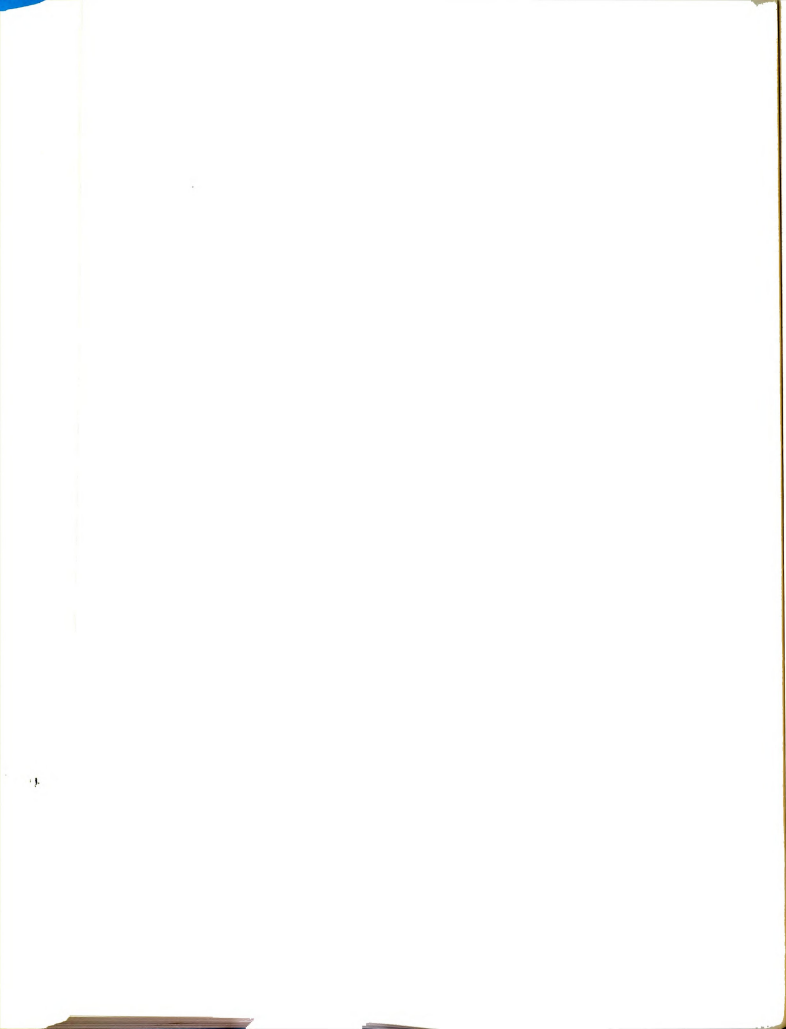
CATEGORY	ITEM	T-SCORE	ITEM	T-SCORE	ITEM	T-SCORE
1	2	3.88*	13	5.07*	20+	.47
	21-	.60	29-	.23	34	3.16*
	36	1.19	42	3.93*	48	2.76
	73-	.70	80	1.78*	84+	.46
2	4+	.97	8+	.52	12	1.56
	25	1.89*	44	1.37	47-	.92
	70-	.00	78	1.97*	79	1.94*
	86	1.56	95	5.12*	96-	.88
3	7-	.40	9	1.21	31	1.45
	50+	.00	62-	.22	63+	.47
	66	1.27	71	1.42	72-	.70
	74	1.71	87	2.09*	93	1.62
4	1-	.63	11	2.22*	18	2.17*
	35	1.29	38	2.82*	56-	.00
	61	2.00*	64	1.15	67	1.48
	82-	.65	89	1.16	90	1.73
5	15+	.31	27	1.56	39+	.00
	40-	.41	49	1.48	54+	1.00
	55+	.37	59-	.20	60+	1.00
	69+	.15	77	1.22	88-	.93
6	10+	.29	28-	.59	41+	.13
	43	1.42	45-	.46	51	2.30*
	52	2.57*	53	1.77*	65	1.59
	68	2.13*	85-	.38	94+	.19
7	3	2.48*	6	1.98*	17-	.56
	19	1.38	22	1.50	24	2.05*
	30	3.57*	32-	.25	37	4.22*
	57-	.25	75	1.53	92	1.70
8	5	1.49	14	2.14*	16	1.53
	23	2.37*	26	1.11	33	3.15*
	46-	.00	58-	.80	76-	.37
	81	1.97*	83	1.14	91	1.24

Legend: *Significant at the .05 level
 -Items dropped from instrument
 +Items reconstructed



APPENDIX B-3

THE TEST INSTRUMENT



Code number _____

Group number _____

TEACHER QUESTIONNAIRE

DIRECTIONS: The following information is necessary for classification of the responses. Please fill out the requested information.

My age is _____. The number of years I have taught is _____.

The number of times which I have moved from one teaching position to another teaching position is _____. (A move is from one school district to another district.)

The number of times I have moved from teaching to another occupation (other than teaching) and then returned to teaching in a public school system is _____. (Leaving and returning count as one move.)

I teach industrial arts. YES _____ NO _____ I teach technical-industrial vocational education. YES _____ NO _____ I teach in both capacities, an industrial arts teacher and a technical-vocational teacher. YES _____ NO _____.

CHECK ONE BOX. The portion of my total work load spent in teaching industrial-technical vocational education is:

Greater
than
one-half

☐

Equally
Divided

☐

Less
than
one-half

☐

The portion of my total work load spent teaching industrial arts is:

Greater
than
one-half

☐

Equally
Divided

☐

Less
than
one-half

☐

The portion of my total work load spent in an administrative or coordinator capacity is:

Greater
than
one-half

☐

Equally
Divided

☐

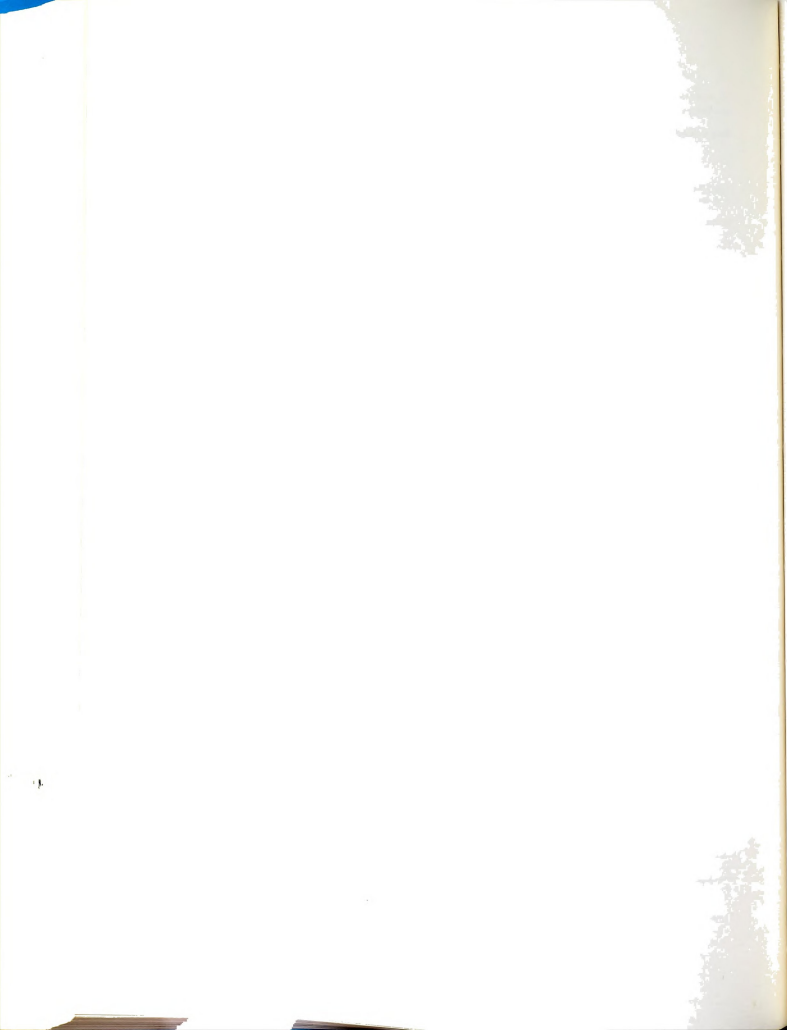
Less
than
one-half

☐

DIRECTIONS: Please respond to each question by darkening in the desired response. Possible responses are: SA-strongly agree, A-agree, U-undecided, D-disagree and SD-strongly disagree.

MAKE A BEST RESPONSE FOR EACH ITEM. DO NOT SKIP ANY ITEMS.

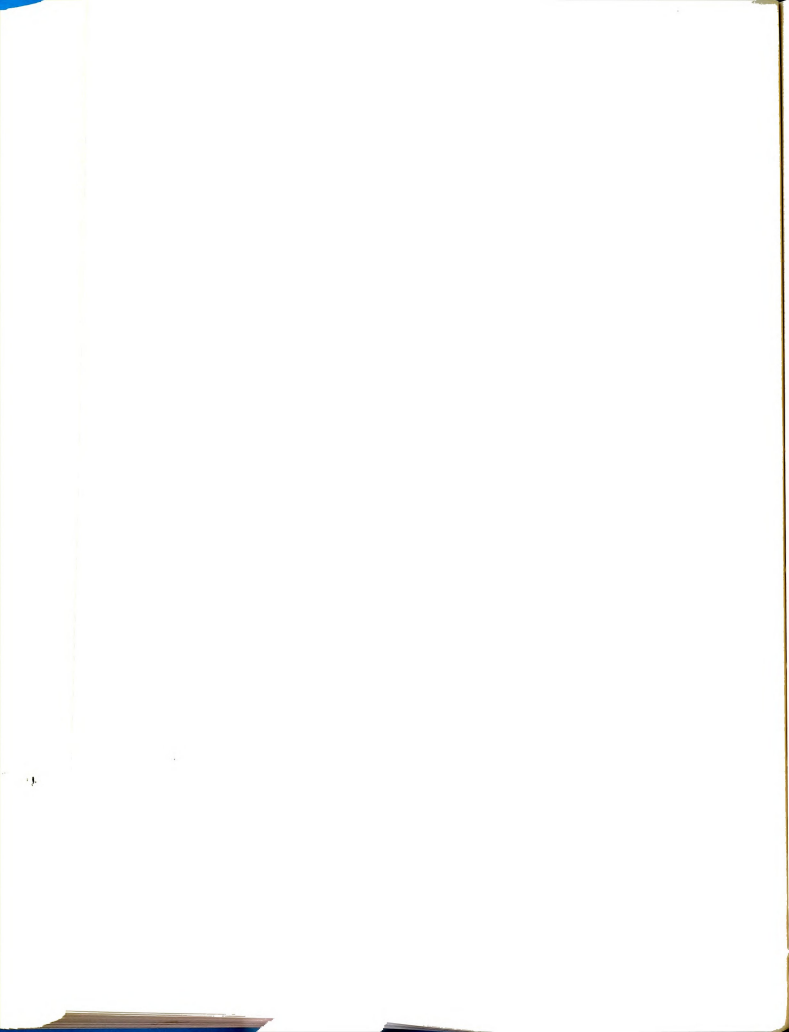
- | | SA | A | U | D | SD |
|--|----|---|---|---|----|
| 1. My wages based on my formal education, in preparation for teaching, are adequate. | | | | | |
| 2. My general leadership ability is poor. | | | | | |
| 3. The faculty thinks the proportion of my work load spent in organization of facilities is average. | | | | | |
| 4. My present occupation does not give me the opportunity to do the type of work I enjoy most. | | | | | |
| 5. The administration views me as having average organizational abilities. | | | | | |
| 6. The proportion of my work load spent in meetings and on organizations is normal. | | | | | |



7. Members of the community think my relations with neighbors are satisfactory.	SA	A	B	SU
8. My opportunity to obtain an administrative position is excellent.				
9. The administration thinks it is being fair in assignment of duties.				
10. The administration thinks the number of preparations I am required to do is less than the average number required in our school.				
11. The administration views my wages as being adequate for the amount of work required.				
12. My contribution to the education of youth is essential.				
13. Most students are understanding of other people's problems.				
14. My present occupation does not provide me the opportunity to present the types of materials which are interesting to students.				
15. The administration thinks the employment procedures used in my employment were very good.				
16. Members of the community think of me as being of average intelligence for teachers.				
17. I think that my wage, earned as a teacher, compared with other occupations, is adequate.				
18. My capabilities as an organizer are poor.				
19. The administration thinks that teaching is the work I enjoy most.				
20. My productivity as a teacher is better than average.				
21. The administration thinks my work load as determined by the length of the school year is adequate.				
22. My present position, as a teacher, does not give me the status I desire.				
23. A majority of the faculty think most of the students are well-adjusted.				
24. I have a good personality for teaching.				
25. My association with church organizations is very good.				
26. A majority of the faculty think of me as performing a necessary part of the education of youth.				
27. The community thinks the wages paid me for the work required are very good.				
28. I think the administration is not helpful in solution of my individual problems.				
29. My wages as compared to other staff members are adequate.				
30. The administration thinks of me as having excellent teaching abilities.				
31. The administration thinks it is helpful in solution of my individual problems.				
32. A majority of the faculty think that most of the students in our school are quite intelligent.				
33. The possibility of my obtaining a college teaching position is very good.				
34. The wages paid me for the amount of work I am required to do are adequate.				
35. The community views me as having an excellent opportunity for advancement.				
36. The administration thinks the portion of my work load, as determined by the number of classes I teach, is normal.				



	SA	A	U	D	SD
37. The community thinks my wages, based on my formal education to become a teacher, are adequate.					
38. A majority of the faculty think the behavior of the students is poor.					
39. The faculty and administration think my relations with parents of the students are satisfactory.					
40. I do not receive the amount of professional recognition I desire in my present occupational position.					
41. The probability of my remaining in my present position is very high.					
42. The administration thinks I will probably remain in my present position.					
43. My students are very industrious.					
44. A majority of the staff think the students are quite lazy.					
45. The administration thinks they are being fair in allocation of funds to subject areas.					
46. My participation in clubs and organizations in the community is poor.					
47. The administration thinks our relations relative to class scheduling are good.					
48. The probability of my achieving a desirable level of economic earning in my present occupation is excellent.					
49. Members of the community think my relations with community leaders are satisfactory.					
50. The administration think our relations relative to class scheduling are good.					
51. The opportunity for me to advance in my profession is not increased by moving within the profession.					
52. A majority of the faculty think the students are very cooperative.					
53. Members of the community think my relations with business men of the community are very good.					
54. Members of the community think my relations with church organizations are satisfactory.					
55. The administration views me as having a personality well suited for teaching.					
56. Most students are understanding of their own problems.					
57. The administration thinks my class size is comparable to other subject areas.					
58. My required number of different preparations is normal for our school.					
59. The wages paid me, based on the number of years I have taught, are adequate.					
60. Members of the teaching staff think I am satisfied in my present occupation.					
61. My present occupation gives me considerable satisfaction.					
62. The teaching staff thinks the wages paid me, based on the number of years I have taught, are very adequate.					
63. My work load, as determined by the length of the school year, is comparable to other occupations.					



	SA	A	D	P	SD
64. My relations with businessmen in the community are satisfactory.					
65. My administration is very conscientious in assignment of duties.					
66. The employment procedures used by the administration during my employment were good.					
67. My present position is challenging.					
68. The staff thinks of me as being quite intelligent.					
69. My relations with parents of students are excellent.					
70. I desire to change occupations in order to achieve greater self-satisfaction.					
71. The number of students in my classes are comparable to other subject areas in our school.					
72. The students in my classes are interested in learning the materials I teach.					



APPENDIX C

KUDER-RICHARDSON RELIABILITY SOURCE
TABLES FOR PRE-TESTS AND
TEST INSTRUMENT

APPENDIX C-1

PRETEST TOTAL TEST RELIABILITY
AND SUBCATEGORY RELIABILITY

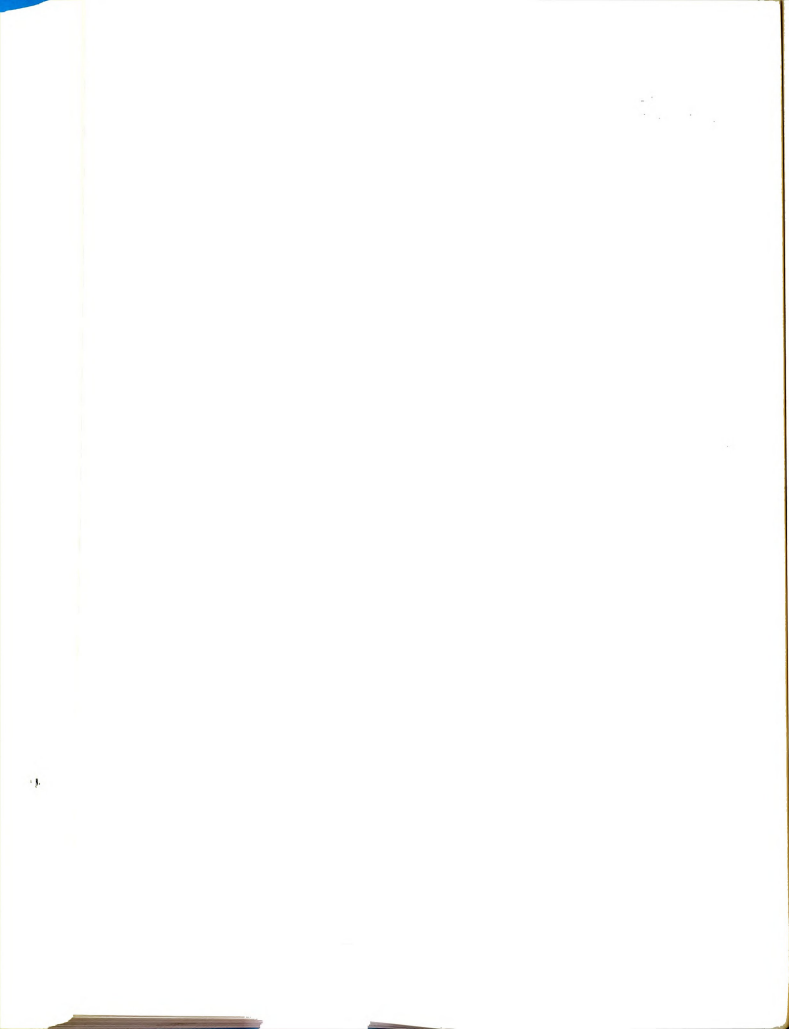
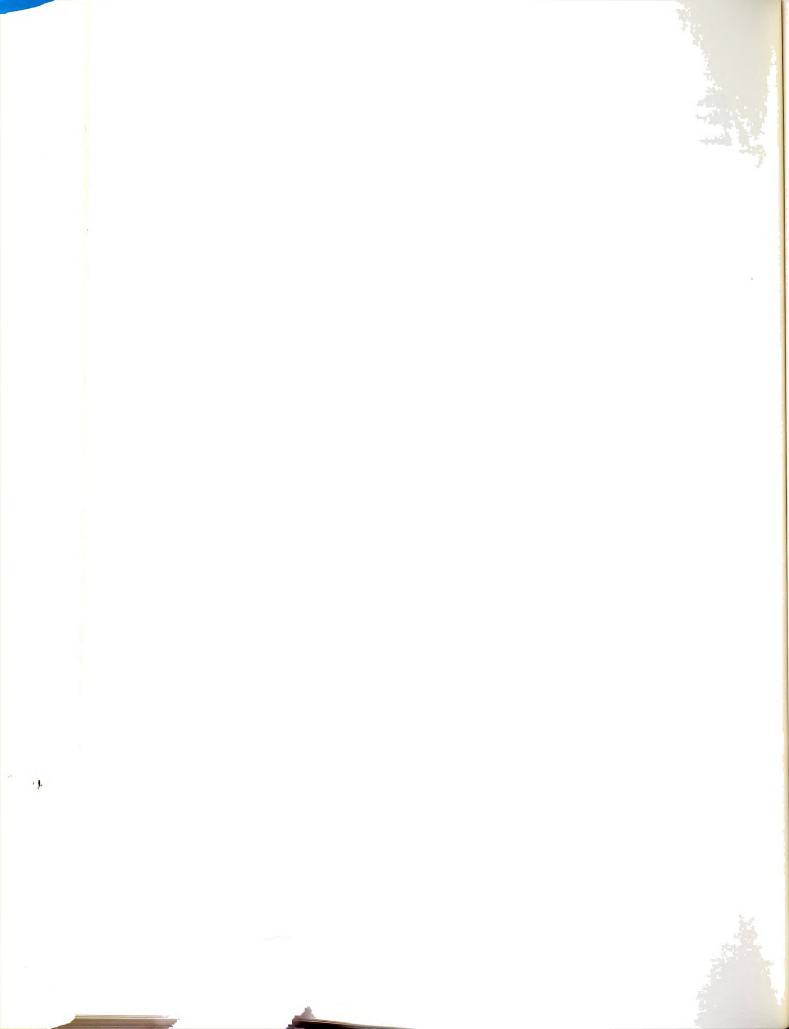


TABLE C.1--Source table Kuder-Richardson reliability on ninety-six item pre-test.

Source	SS	df	MS	F	Rel.
Ind	1.45	53	2.74	2.49	.96
Items	2.38	95	2.51	2.28	
Error	5.53	5035	1.10		
Total	7.22	5183			



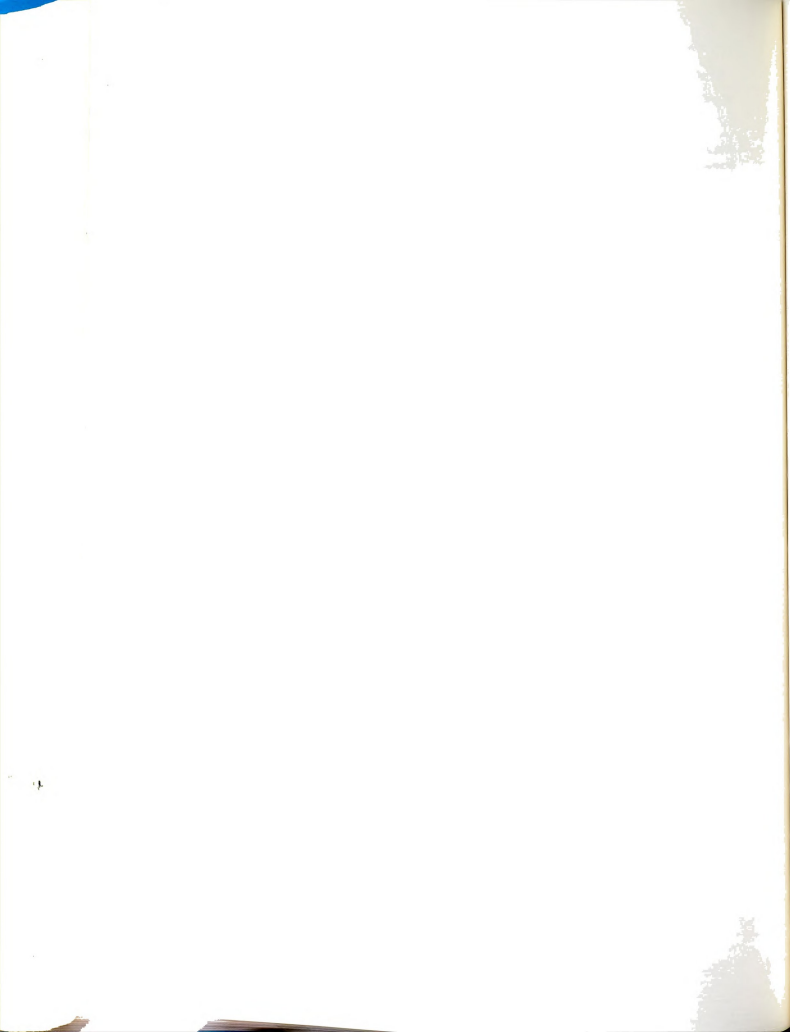
APPENDIX C-2

SOURCE TABLE KUDER-RICHARDSON
RELIABILITY ON NINETY-SIX
STATEMENT PRE-TEST



TABLE C.2.--Source table Kuder-Richardson reliability on ninety-six statement pre-test.

Source	SS	df	MS	F	Rel.
Sub Test #1--Wages					
Ind	1.40	53	2.64	2.42	.59
Items	1.07	11	9.72	8.89	
Error	6.37	583	1.09		
Total	8.84	647			
Sub Test #2--Work					
Ind	1.22	53	2.31	2.32	.57
Items	1.03	11	9.35	9.39	
Error	5.80	583	9.95		
Total	8.05	647			
Sub Test #3--Community Role					
Ind	9.71	53	1.83	3.07	.67
Items	5.46	11	4.96	8.32	
Error	3.48	583	5.97		
Total	5.00	647			
Sub Test #4--Administrative Relations					
Ind	8.22	53	1.55	1.84	.46
Items	5.76	11	5.23	6.23	
Error	4.90	583	8.40		
Total	6.30	647			
Sub Test #5--Student Relations					
Ind	1.07	53	2.03	2.03	.51
Items	1.34	11	1.22	1.22	
Error	5.82	583	9.99		
Total	8.23	647			
Sub Test #6--Professional Advancement					
Ind	1.38	53	2.60	2.07	.52
Items	2.74	11	2.49	1.98	
Error	7.34	583	1.26		
Total	8.99	647			
Sub Test #7--Teacher Capabilities					
Ind	9.90	53	1.87	2.38	.58
Items	3.69	11	3.35	4.28	
Error	4.57	583	7.84		
Total	9.25	647			
Sub Test #8--Professional Capabilities					
Ind	9.51	53	1.79	1.85	.46
Items	1.88	11	1.71	1.77	
Error	5.66	583	9.70		
Total	8.49	647			



APPENDIX C-3

SOURCE TABLE KUDER-RICHARDSON
RELIABILITY FOR FIFTY SEVEN
ITEM PRE-TEST

TABLE C.3--Source table Kuder-Richardson reliability for fifty-seven item pre-test.

Source	SS	df	MS	F	Rel.
Ind	1.18	53	2.22	1.51	.93
Items	2.31	57	4.12	2.79	
Error	4.38	2968	1.47		
Total	5.79	3079			



APPENDIX C-4

SOURCE TABLE KUDER-RICHARDSON
RELIABILITY ON FIFTY-SEVEN
STATEMENT PRE-TEST

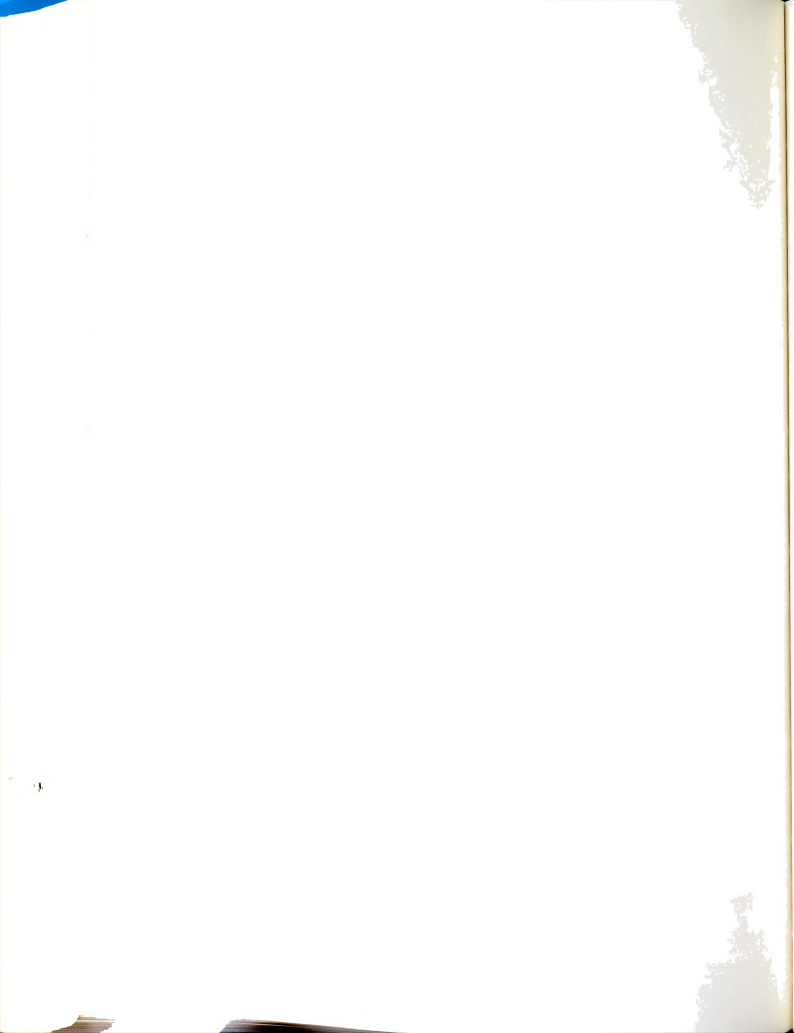


TABLE C.4--Source table Kuder-Richardson reliability on fifty-seven statement pre-test.

Source	SS	df	MS	F	Rel.
Sub Test #1--Wages					
Ind	2.14	53	4.04	4.78	.79
Items	5.07	6	8.44	1.00	
Error	2.68	318	8.43		
Total	5.33	377			
Sub Test #2--Work					
Ind	1.07	53	2.02	2.57	.61
Items	7.50	6	1.25	1.59	
Error	2.50	318	7.87		
Total	4.32	377			
Sub Test #3--Community Role					
Ind	8.24	53	1.55	3.05	.67
Items	2.60	6	4.33	8.52	
Error	1.62	318	5.09		
Total	2.70	377			
Sub Test #4--Administrative Relations					
Ind	8.32	53	1.57	2.52	.60
Items	3.45	6	4.31	6.91	
Error	2.64	424	6.23		
Total	3.82	485			
Sub Test #5--Student Relations					
Ind	6.41	53	1.21	9.67	.03
Items	8.64	2	4.32	3.45	
Error	1.33	106	1.25		
Total	1.97	161			
Sub Test #6--Professional Advancement					
Ind	1.32	53	2.48	2.08	.52
Items	1.75	5	3.49	2.92	
Error	3.17	265	1.19		
Total	4.66	323			
Sub Test #7--Teacher Capabilities					
Ind	7.68	53	1.45	2.01	.50
Items	2.85	8	3.56	4.94	
Error	3.06	424	7.22		
Total	6.68	485			
Sub Test #8--Professional Capabilities					
Ind	1.40	134	1.05	1.15	.13
Items	6.51	8	8.14	8.92	
Error	9.78	1072	9.12		
Total	1.77	1214			



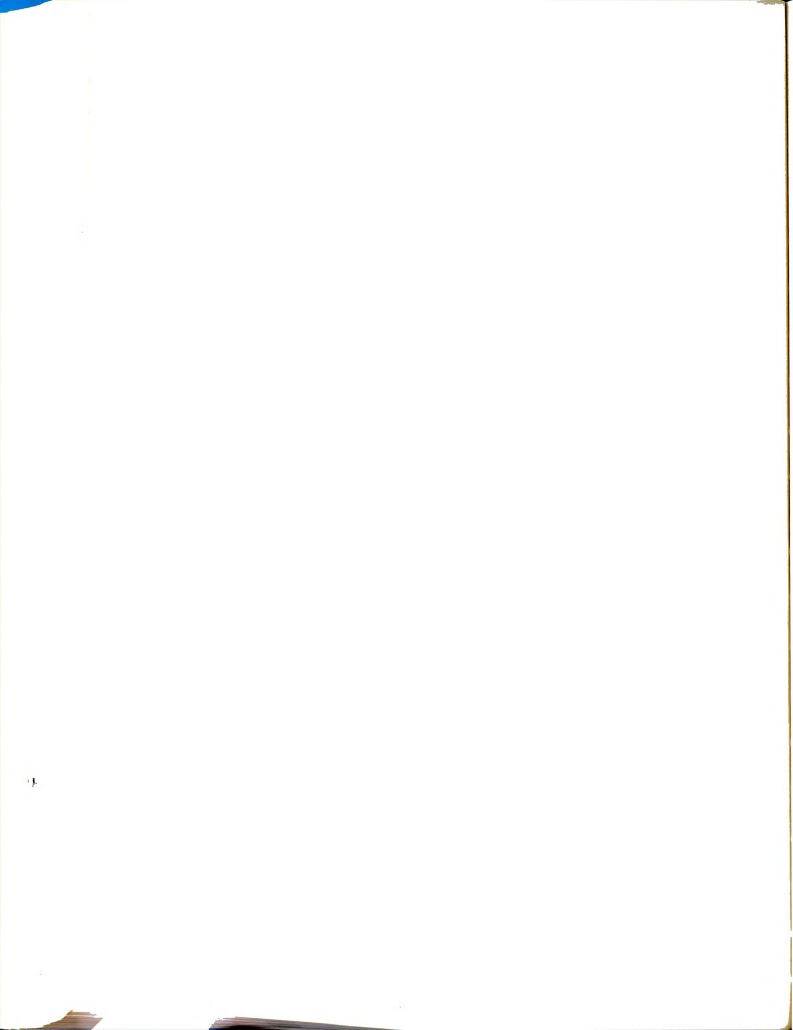
APPENDIX C-5

RELIABILITY OF THE TEST INSTRUMENT

TABLE 1
Source
Individual
Item
Price
Value

TABLE C.5--Reliability of the test instrument.

Source	SS	df	MS	F	Rel.
Individuals	3.03	134	2.26	1.49	.93
Items	5.57	71	7.84		
Error	1.45	9514	1.52		
Total	1.80	9719			



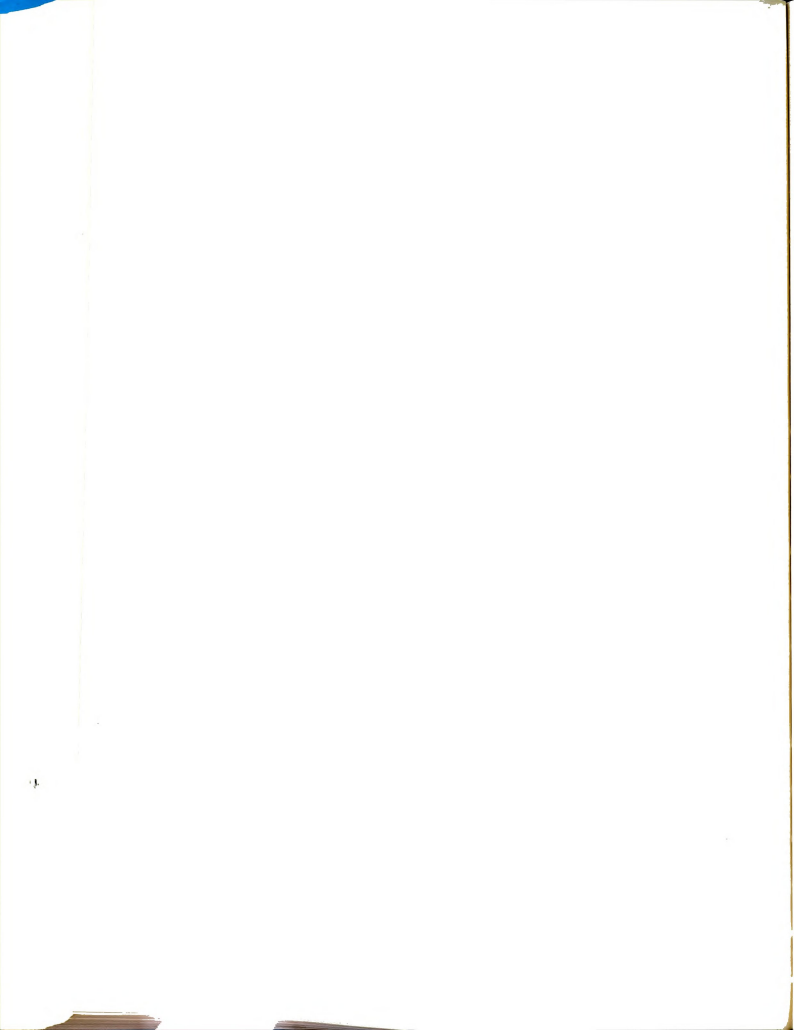
APPENDIX C-6

SOURCE TABLE KUDER-RICHARDSON
RELIABILITY FOR TEST INSTRU-
MENT SUBCATEGORIES



TABLE C.6--Source table Kuder-Richardson reliability for test instrument subcategories.

Source	SS	df	MS	F	Rel.
Sub Test #1--Wages					
Individuals _b	4.49	134	3.36	4.47	.77
Items	4.80	8	6.00	7.99	
Error _w	1.74	1072	7.51		
Total	1.74	1214			
Sub Test #2--Work					
Individuals	1.68	134	1.25	1.52	.34
Items	1.50	8	1.87	2.26	
Error	8.85	1072	8.25		
Total	1.20	1214			
Sub Test #3--Community Role					
Individuals	2.32	134	1.73	2.54	.60
Items	9.07	8	1.13	1.67	
Error	7.30	1072	6.81		
Total	1.05	1214			
Sub Test #4--Administrative Relations					
Individuals	1.60	134	1.19	1.74	.43
Items	1.13	8	1.42	2.06	
Error	7.36	1072	6.87		
Total	1.01	1214			
Sub Test #5--Student Relations					
Individuals	2.64	134	1.97	1.85	.45
Items	6.46	8	8.08		
Error	1.14	1072	1.07		
Total	1.47	1214			
Sub Test #6--Professional Advancement					
Individuals	2.75	134	2.06	1.89	.47
Items	1.29	8	1.62	1.49	
Error	1.16	1072	1.09		
Total	1.57	1214			
Sub Test #7--Teacher Capabilities					
Individual	1.33	134	9.90	1.40	.28
Items	6.90	8	9.63	1.22	
Error	7.59	1072	7.08		
Total	1.58	1214			
Sub Test #8--Professional Satisfaction					
Individual	1.40	134	1.05	1.15	.12
Items	6.51	8	8.14	8.92	
Error	9.78	1072	9.12		
Total	1.77	1214			



APPENDIX D

SOURCE TABLES FOR UNIVARIATE F TESTS
FOR VARIABLES, MAIN EFFECT AND
INTERACTION OF AGE AND
MAIN EFFECT



APPENDIX D-1

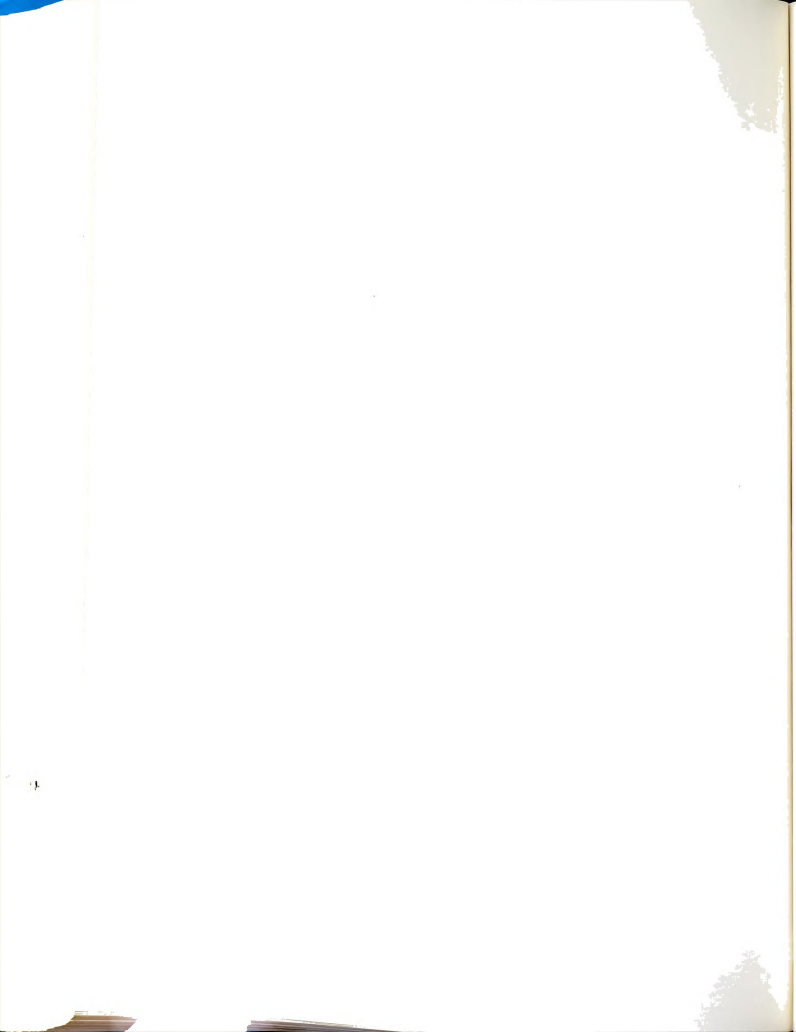
SOURCE TABLE POPULATION
CENTER SIZE



TABLE D.1--Source table population center size.

Source	SS	df	MS	F	Sig
Sub Test #1--Wages					
Pop. Cent.		3	62.47	2.54	N.S.*
Within		131	24.62		
Total		134			
Sub Test #2--Work					
Pop. Cent.		3	3.41	3.33	N.S.
Within		131	10.28		
Total		134			
Sub Test #3--Community Role					
Pop. Cent.		3	14.30	1.12	N.S.
Within		131	12.74		
Total		134			
Sub Test #4--Administrative Relations					
Pop. Cent.		3	6.75	0.78	N.S.
Within		131	8.63		
Total		134			
Sub Test #5--Student Relations					
Pop. Cent.		3	11.10	0.84	N.S.
Within		131	12.52		
Total		134			
Sub Test #6--Professional Advancement					
Pop. Cent.		3	8.20	0.68	N.S.
Within		131	11.98		
Total		134			
Sub Test #7--Teacher Capabilities					
Pop. Cent.		3	.053	0.07	N.S.
Within		131	7.19		
Total		134			
Sub Test #8--Professional Satisfaction					
Pop. Cent.		3	4.04	0.50	N.S.
Within		131	7.94		
Total		134			

*N.S.--not significant



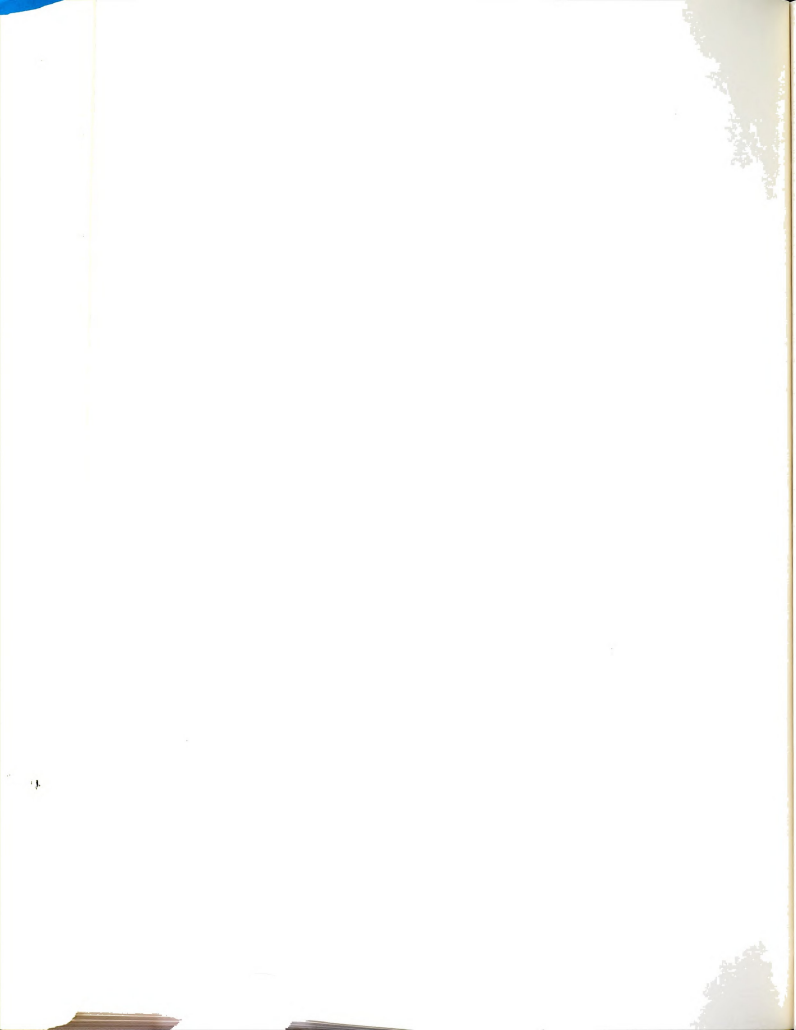
APPENDIX D-2

SOURCE TABLE OUT-RETURNED



TABLE D.2--Source table out-returned.

Source	SS	df	MS	F	
Sub Test #1--Wages					
Out-Returned _b		1	17.46	0.68	N.S.
Within _e		133	25.33		
Total		134			
Sub Test #2--Work					
Between		1	3.16	-.31	N.S.
Within		133	10.18		
Total		134			
Sub Test #3--Community Role					
Between		1	3.82	0.03	N.S.
Within		133	12.84		
Total		134			
Sub Test #4--Administrative Relations					
Between		1	.09	0.01	N.S.
Within		133	8.65		
Total		134			
Sub Test #5--Student Relations					
Between		1	.51	0.04	N.S.
Within		133	12.58		
Total		134			
Sub Test #6--Professional Advancement					
Between		1	8.49	0.71	N.S.
Within		133	11.93		
Total		134			
Sub Test #7--Teacher Capabilities					
Between		1	8.05	1.14	N.S.
Within		133	7.03		
Total		134			
Sub Test #8--Professional Satisfaction					
Between		1	3.08	0.39	N.S.
Within		133	7.89		
Total		134			



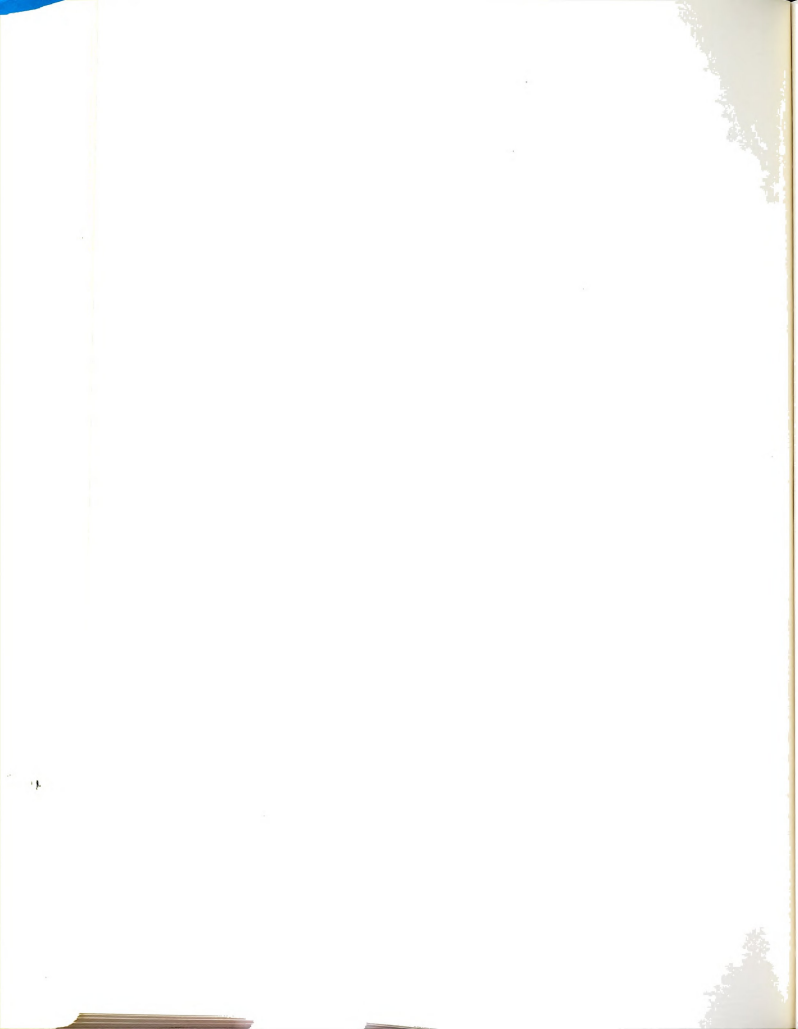
APPENDIX D-3

SOURCE TABLE FOR INDUSTRIAL ARTS
AND VOCATIONAL EDUCATION



TABLE D.3--Source table for industrial arts and vocational education.

Source	SS	df	MS	F	Sig
Sub Test #1--Wages					
Ind. Art-Voc. Ed.		1	19.43	0.758	N.S.
Within		133	25.51		
Total		134			
Sub Test #2--Work					
Between		1	94.61	9.97	S*
Within		133	9.49		
Total		134			
Sub Test #3--Community Role					
Between		1	3.46	.27	N.S.
Within		133	12.84		
Total		134			
Sub Test #4--Administrative Relations					
Between		1	2.86	.33	N.S.
Within		133	8.63		
Total		134			
Sub Test #5--Student Relations					
Between		1	9.61	.77	N.S.
Within		133	12.5		
Total		134			
Sub Test #6--Professional Advancement					
Between		1	0.15	.01	N.S.
Within		133	11.99		
Total		134			
Sub Test #7--Teacher Capabilities					
Between		1	0.05	.01	N.S.
Within		133	7.09		
Total		134			
Sub Test #8--Professional Satisfaction					
Between		1	4.55	.57	N.S.
Within		133	7.88		
Total		134			



APPENDIX D-4

SOURCE TABLE MOVES



TABLE D.4--Source table moves.

Source	SS	df	MS	F	Sig
Sub Test #1--Wages					
Moves		4	19.19	0.75	N.S.
Within		130	25.66		
Total		134			
Sub Test #2--Work					
Between		4	12.79	1.27	N.S.
Within		130	10.05		
Total		134			
Sub Test #3--Community Role					
Between		4	16.28	1.29	N.S.
Within		130	12.66		
Total		134			
Sub Test #4--Administrative Relations					
Between		4	4.78	0.55	N.S.
Within		130	8.71		
Total		134			
Sub Test #5--Student Relations					
Between		4	7.36	0.58	N.S.
Within		130	12.65		
Total		134			
Sub Test #6--Professional Advancement					
Between		4	9.54	1.37	N.S.
Within		130	12.15		
Total		134			
Sub Test #7--Teacher Capabilities					
Between		4	9.54	1.37	N.S.
Within		130	6.06		
Total		134			
Sub Test #8--Professional Satisfaction					
Between		4	6.31	0.80	N.S.
Within		130	7.91		
Total		134			



APPENDIX D-5

SOURCE TABLE EXPERIENCE

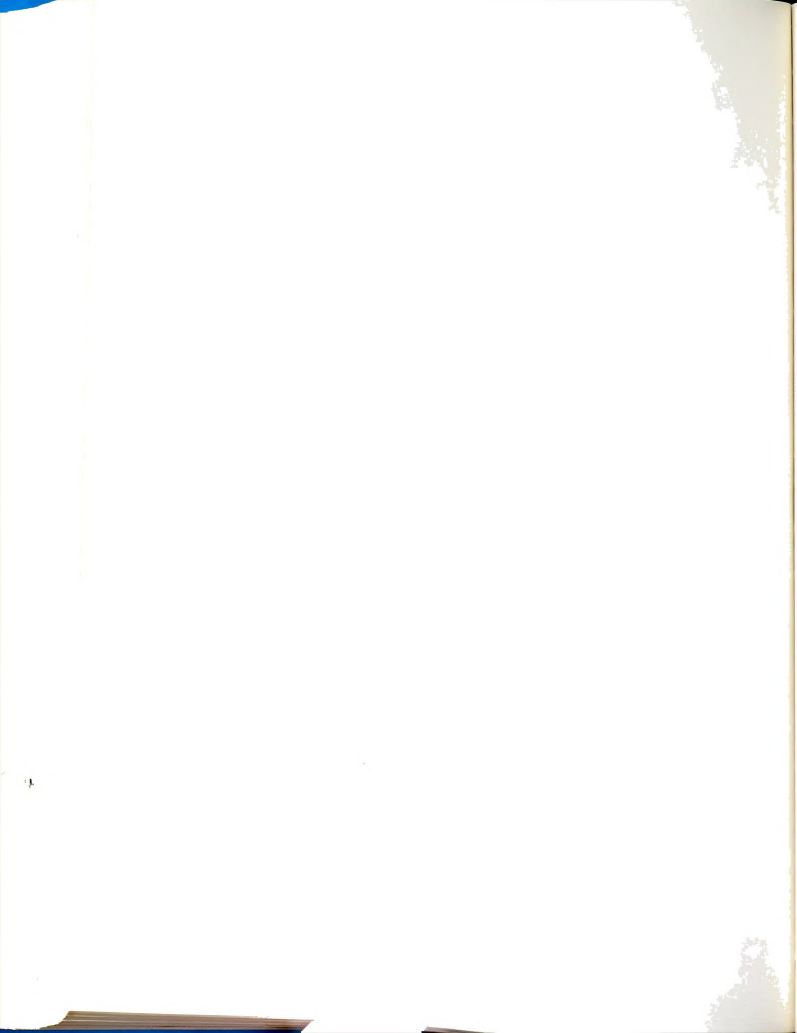
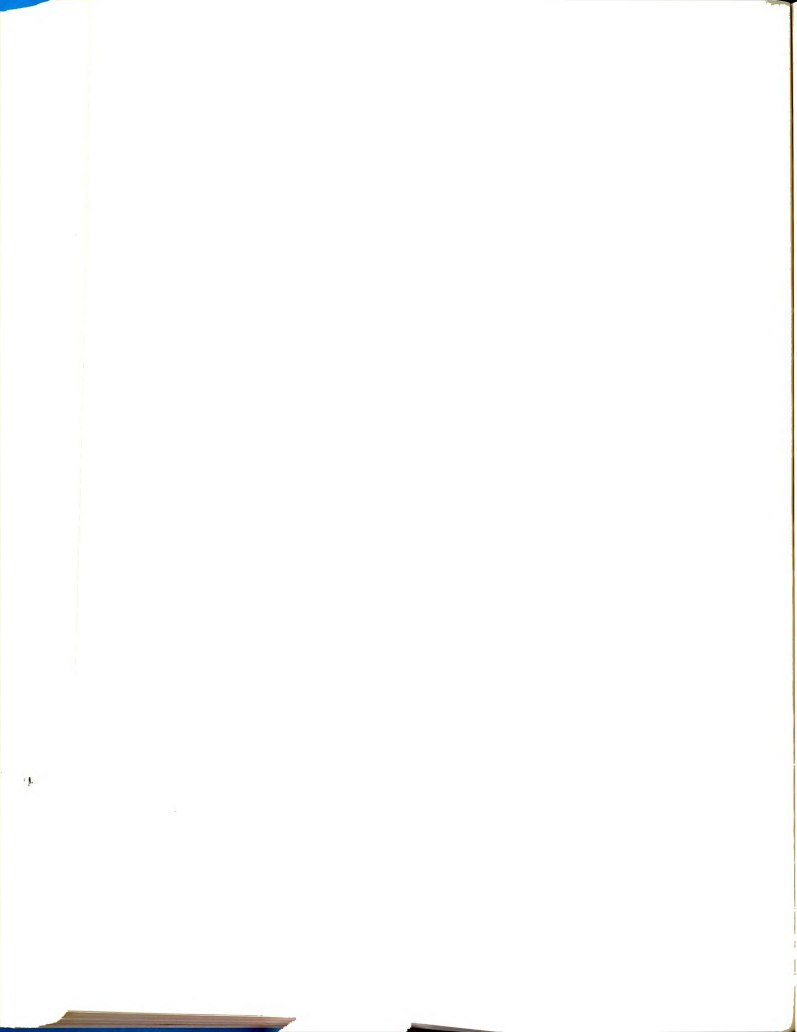


TABLE D.5--Source table experience.

Source	SS	df	MS	F	Sig
Sub Test #1--Wages					
Experience _b		4	80.00	3.36	S**
Within		130	23.79		
Total		134			
Sub Test #2--Work					
Between		4	19.92	2.03	N.S.
Within		130	9.83		
Total		134			
Sub Test #3--Community Role					
Between		4	19.47	1.55	N.S.
Within		130	12.56		
Total		134			
Sub Test #4--Administrative Relations					
Between		4	7.82	0.91	N.S.
Within		130	8.61		
Total		134			
Sub Test #5--Student Relations					
Between		4	5.33	0.42	N.S.
Within		130	12.71		
Total		134			
Sub Test #6--Professional Advancement					
Between		4	23.04	1.99	N.S.
Within		130	11.56		
Total		134			
Sub Test #7--Teacher Capabilities					
Between		4	4.52	0.63	N.S.
Within		130	7.12		
Total		134			
Sub Test #8--Professional Satisfaction					
Between		4	15.13	1.98	N.S.
Within		130	7.63		
Total		134			



APPENDIX D-6

SOURCE TABLE AGE

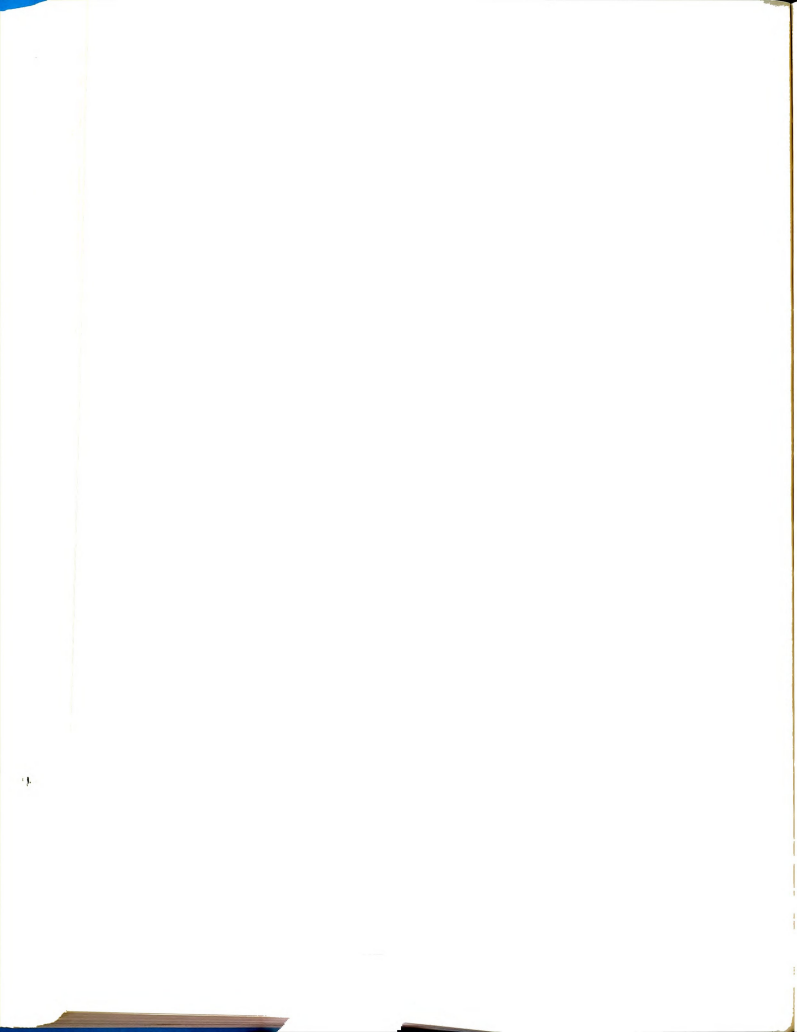
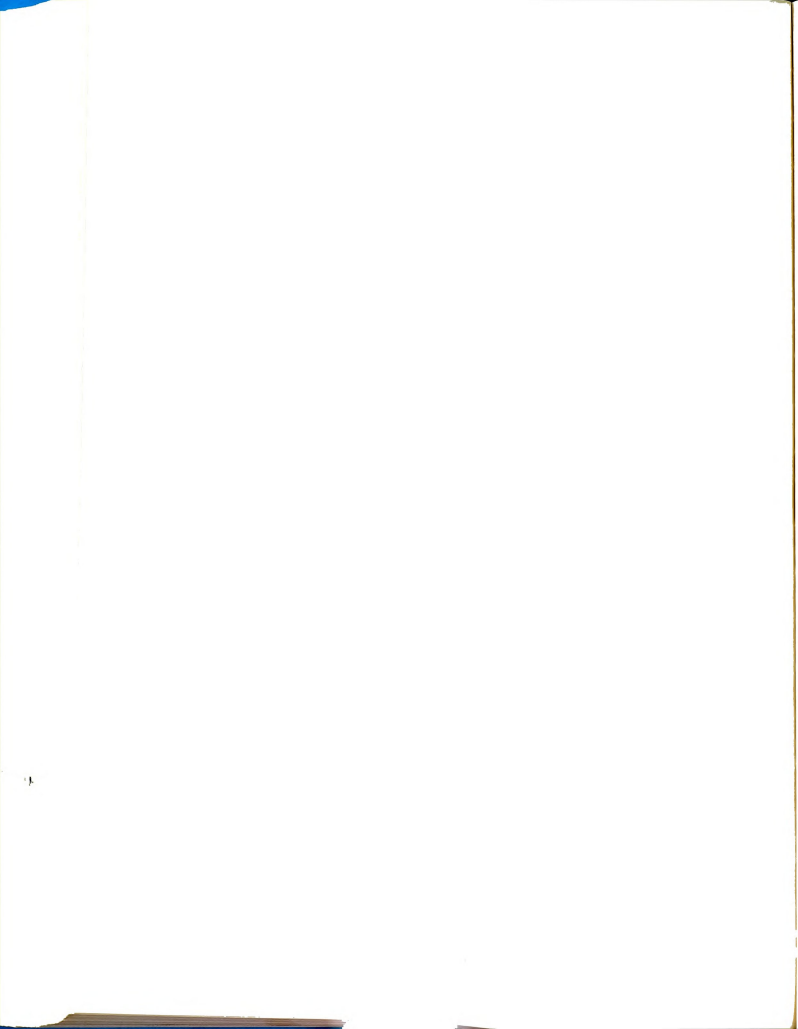


TABLE D.6--Source table age.

Source	SS	df	MS	F	Sig
Sub Test #1--Wages					
Age		4	33.31	1.32	N.S.
Within		130	25.23		
Total		134			
Sub Test #2--Work					
Between		4	23.48	2.42	N.S.
Within		130	9.72		
Total		134			
Sub Test #3--Community Role					
Between		4	26.77	2.17	N.S.
Within		130	12.34		
Total		134			
Sub Test #4--Administrative Relations					
Between		4	19.54	2.37	N.S.
Within		130	8.25		
Total		134			
Sub Test #5--Student Relations					
Between		4	43.12	3.73	S**
Within		130	11.55		
Total		134			
Sub Test #6--Professional Advancement					
Between		4	20.31	1.74	N.S.
Within		130	11.64		
Total		134			
Sub Test #7--Teacher Capabilities					
Between		4	2.54	0.35	N.S.
Within		130	7.18		
Total		134			
Sub Test #8--Professional Satisfaction					
Between		4	11.77	1.51	N.S.
Within		130	7.71		
Total		134			



APPENDIX D-7

SOURCE TABLE OUT-MOBILE
AND ACTIVES

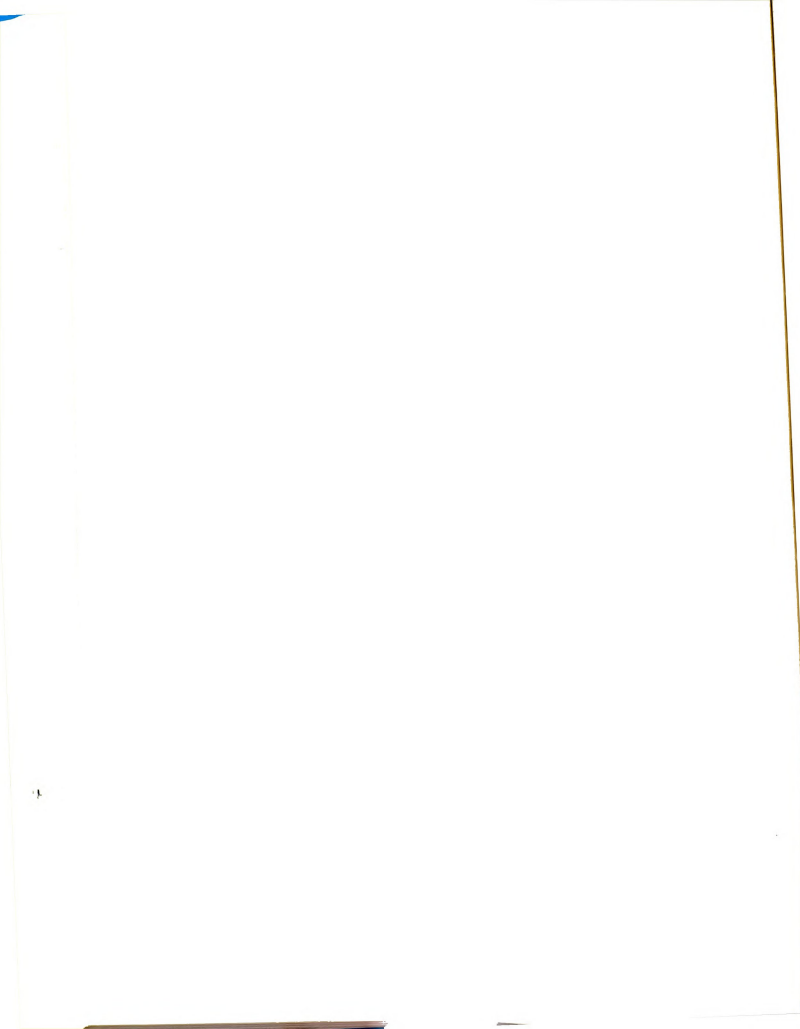


TABLE D.7--Source table out-mobiles and actives.

Source	SS	df	MS	F	Sig
Sub Test #1--Wages					
Out-Mobile, Active _b	1		72.83	2.90	N.S.
Within	133		25.11		
Total	134				
Sub Test #2--Work					
Between	1		18.11	1.80	N.S.
Within	133		10.07		
Total	134				
Sub Test #3--Community Role					
Between	1		7.12	0.56	N.S.
Within	133		12.81		
Total	134				
Sub Test #4--Administrative Relations					
Between	1		3.39	0.39	N.S.
Within	133		8.63		
Total	134				
Sub Test #5--Student Relations					
Between	1		5.08	0.40	N.S.
Within	133		12.54		
Total	134				
Sub Test #6--Professional Advancement					
Between	1		67.06	5.83	S**
Within	133		11.48		
Total	134				
Sub Test #7--Teacher Capabilities					
Between	1		9.22	1.31	N.S.
Within	133		7.03		
Total	134				
Sub Test #8--Professional Satisfaction					
Between	1		19.50	2.51	N.S.
Within	133		7.77		
Total	134				

APPENDIX D-8

INTERACTION SOURCE TABLE, BETWEEN AGE
AND OUT-MOBILES, ACTIVES IN THE
EIGHT SUBCATEGORIES OF
THE INSTRUMENT

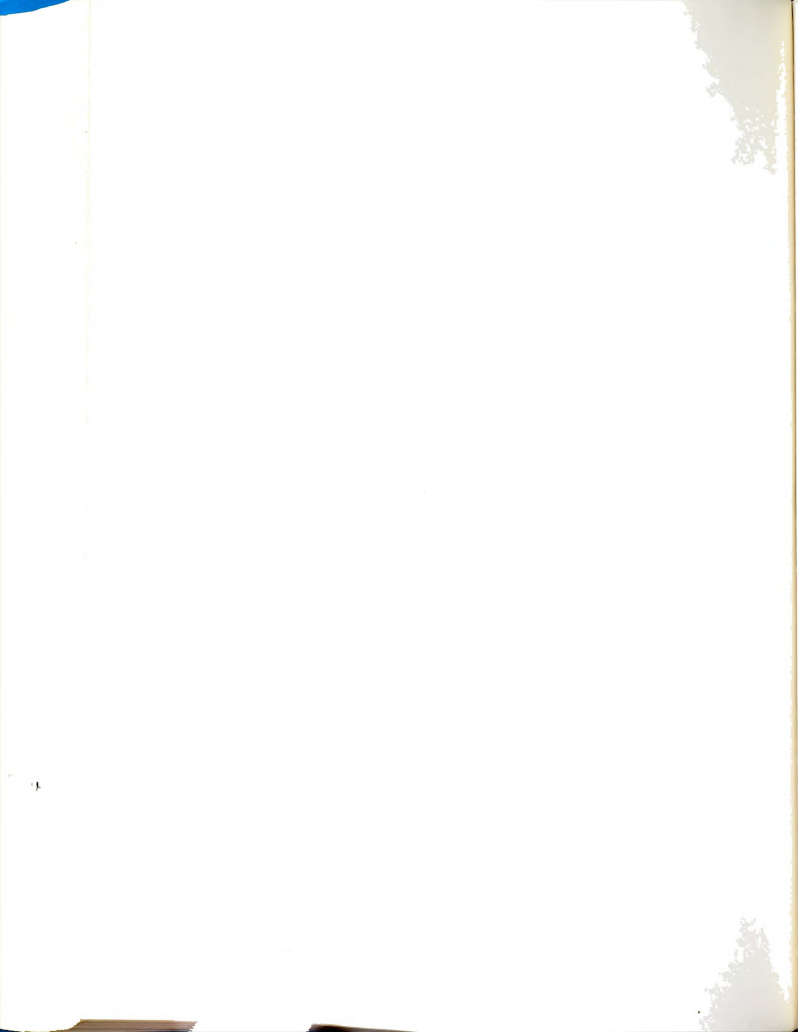
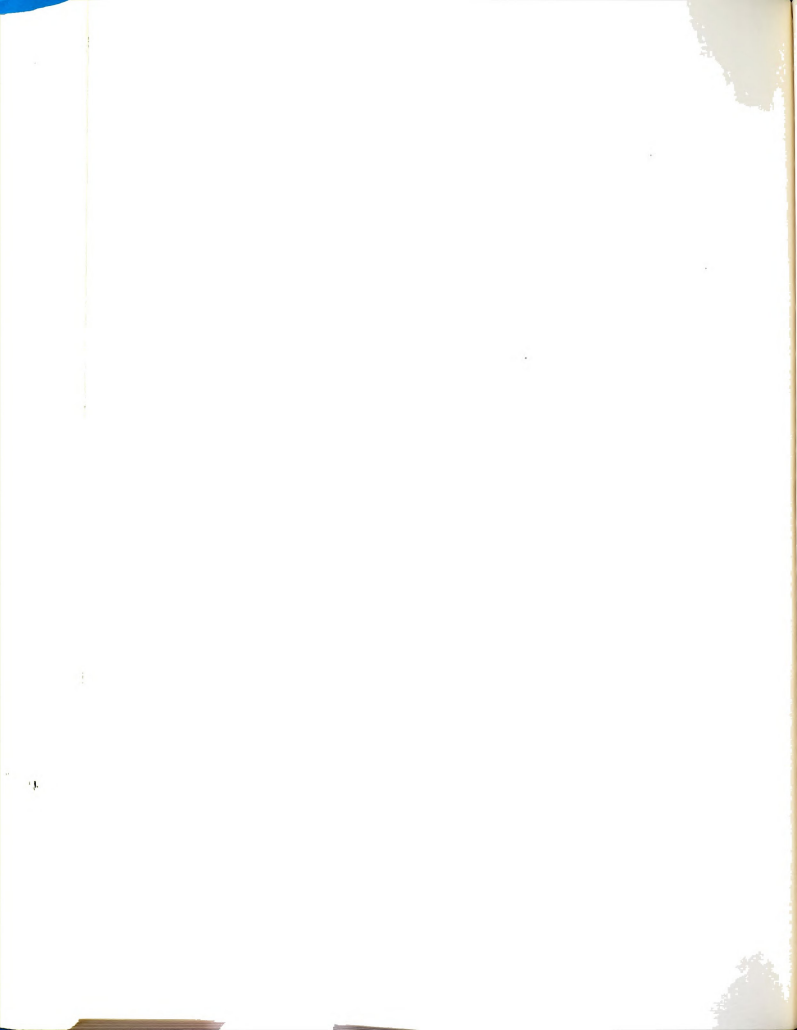
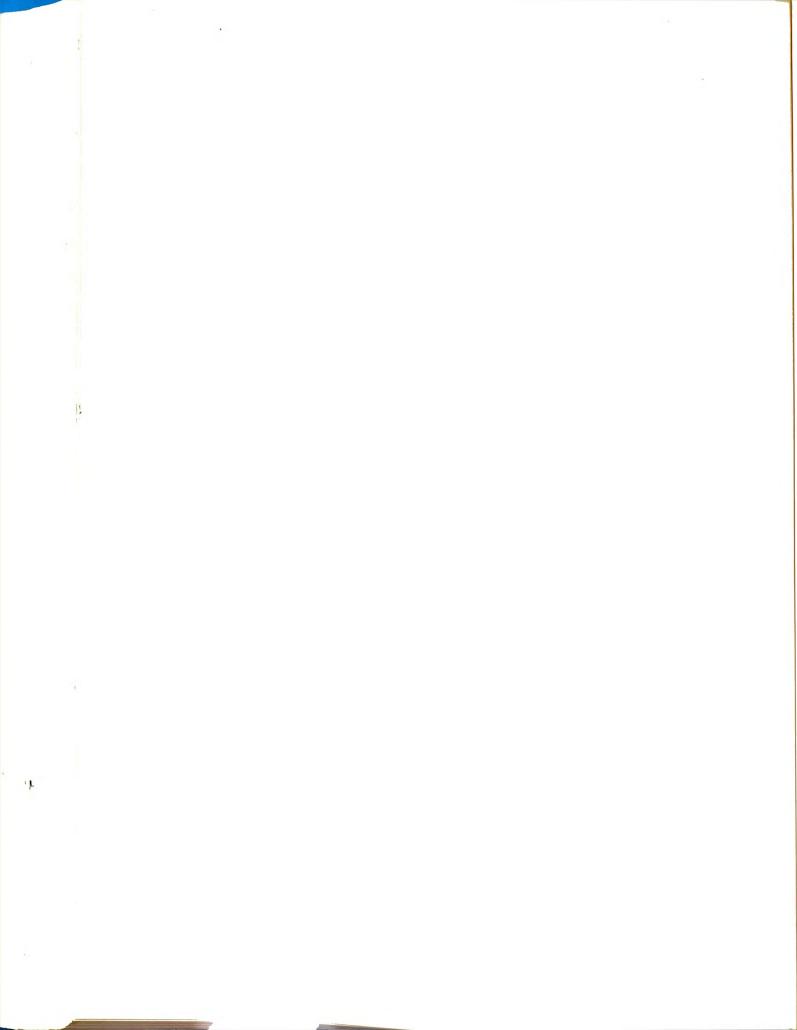


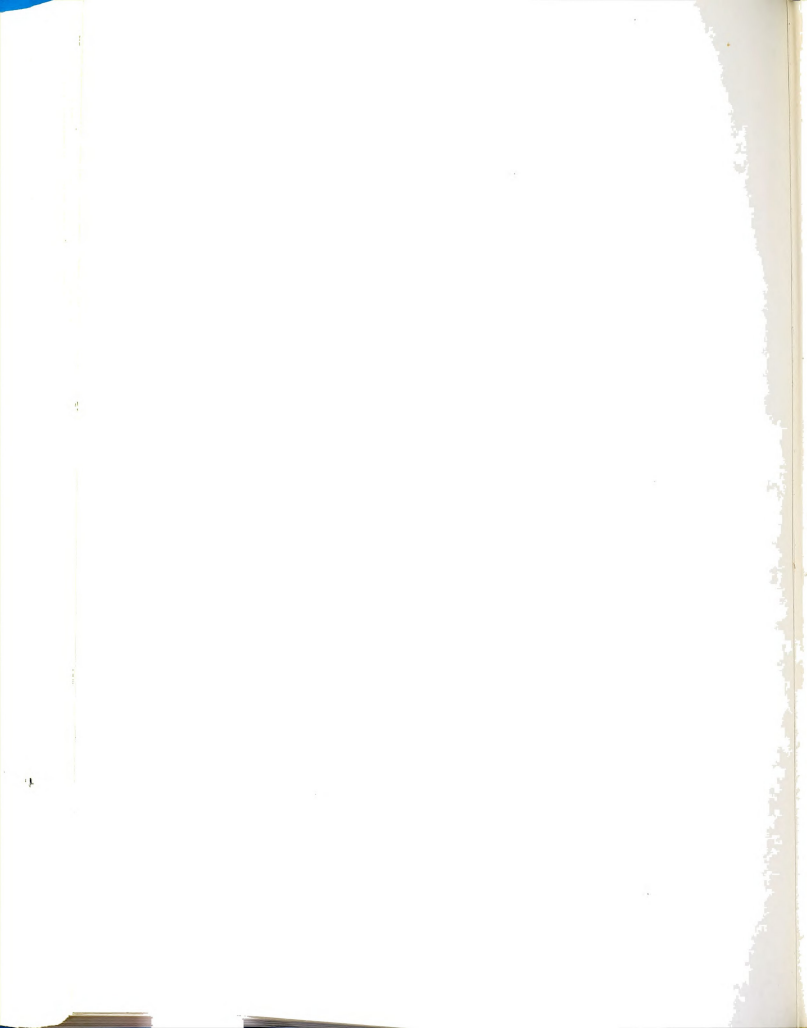
TABLE D.8--Interaction source table, between age and out-mobiles, actives in the eight subcategories of the instrument.

Source	SS	df	MS	F	Sig
Sub Test #1--Wages					
Interaction _b		2	14.98	.60	N.S.
Within		127	25.15		
Total		129			
Sub Test #2--Work					
Between		2	12.82	.27	N.S.
Within		127	9.59		
Total		129			
Sub Test #3--Community Role					
Between		2	25.80	2.12	N.S.
Within		127	12.15		
Total		129			
Sub Test #4--Administrative Relations					
Between		2	4.46	.53	N.S.
Within		127	8.39		
Total		129			
Sub Test #5--Student Relations					
Between		2	2.80	.24	N.S.
Within		127	11.61		
Total		129			
Sub Test #6--Professional Advancement					
Between		2	37.32	3.39	S**
Within		127	11.10		
Total		129			
Sub Test #7 Teacher Capabilities					
Between		2	5.92	.63	N.S.
Within		127	7.17		
Total		129			
Sub Test #8--Professional Satisfaction					
Between		2	15.56	2.07	N.S.
Within		127	7.53		
Total		129			









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