

VOCATIONAL MATURITY: DESCRIPTIONS, SPECIFICATIONS
AND CORRELATES IN NINTH GRADE YOUTH

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ABSTRACT

VOCATIONAL MATURITY: DESCRIPTION, SPECIFICATION, AND CORRELATES IN NINTH GRADE YOUTH

by Donald L. Stormer

PROBLEM: Educators planning vocational experiences need a method of assessing the degree of vocational development. Knowing the level of an individual's or a group's progress toward vocational maturity would enable educators to program more appropriate vocational experiences.

The specific objectives of the study were to:

1. describe three ninth grade groups using descriptive variables found or thought to be related to vocational maturity.
2. assess the vocational maturity of these students according to a specific vocational development theory.
3. ascertain the relationship of the selected variables to the vocational maturity of the students.

PROCEDURE: The respondents were 243 boys and girls in the ninth grade classes at L'Anse, Crystal Falls, and Onaway, Michigan.

Several standard and special instruments were used to measure the following variables:

1. Age
2. Aptitudes - verbal reasoning, numerical ability, scholastic aptitude, abstract reasoning, clerical speed and accuracy, mechanical reasoning, space relations, spelling-language, and grammar-language
3. Index of family socio-economic status
4. Index of socio-economic status of jobs preferred by students
5. Interests - outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social science and clerical
6. Occupational expectation and aspiration
7. Place of residence
8. School achievement
9. Sex
10. Social participation
11. Vocational behaviors
12. Vocational maturity
13. Vocational values - altruism, control, job freedom, money, prestige, security, and self-realization

An instrument was developed to measure the vocational behaviors suggested in the literature as being indicative of the vocational developmental task of crystallizing an occupational preference. The total score for all vocational behaviors measured was the score for vocational maturity.

The descriptive variables were correlated with the vocational behaviors and vocational maturity variables in a search for relationships. A Pearson Product Moment Correlation at or beyond the .05 level of significance constituted a relationship.

FINDINGS: The description of the three ninth grade groups accounted for a large number of findings:

The following variables tended to be positively related to vocational maturity. The correlations were significant but low and of no predictive value.

1. Occupational aspiration
2. Index of socio-economic status of the jobs preferred by students
3. Participation in social activities
4. Scientific interests
5. Verbal, Abstract, Scholastic, and Language aptitudes
6. Self-realization as a vocational value

The following variables tended to be unrelated to vocational maturity.

1. Rural, rural non-farm or village residence

2. Family socio-economic status as judged by the
occupation of the head of the household

The vocational developmental task of crystallizing an occupational preference appears to be largely a cognitive process consisting of verbal behaviors.

The vocational behavior, "awareness of factors to consider in formulating an occupational preference," appears to develop earlier than the other vocational behaviors studied. There appears to be a chronological order to development of the vocational behaviors studied.

Girls tended to aspire and to expect higher levels of occupational prestige than boys. However, girls tended to be more occupationally unrealistic than boys.

Youth, at the ninth grade level, preferred occupations of higher socio-economic status than those achieved by their fathers.

Ninth grade youth, of the type studied, hold the vocational values of self-realization and security high as compared to the values of money, control, prestige, job freedom and altruism.

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By

Donald L. Stormer

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	11
LIST OF TABLES	vii
LIST OF FIGURES	ix
LIST OF APPENDICES	x

Chapter

I. INTRODUCTION TO THE STUDY	1
A. Purpose	1
B. Statement of the Problem	2
C. Rationale	5
D. Objectives of the Study	7
E. Assumptions on Which the Study is Based	7
F. Definitions of Terms	8
G. Summary	12
II. THEORETICAL FOUNDATIONS FOR THE STUDY	13
A. Introduction	13
B. Theories of Occupational Choice and Vocational Development	13
1. Accident Theory	14
2. Impulse Theory	15
3. Need Theories	16
4. Social System Theory	17
5. Life-Stage Theories of Vocational Development	18
a. Ginzberg's theory of occupa- tional choice	18
b. Super's theory of vocational development	23
(1) Growth Stage	25
(a) Fantasy	25
(b) Interests	25
(c) Capacity	25

Chapter	Page
(2) Exploration Stage	26
(a) Tentative	26
(b) Transition	26
(c) Trial	27
(3) Establishment Stage	27
(a) Trial	27
(b) Stabilization	27
(4) Maintenance Stage	27
(5) Decline Stage	28
(a) Deceleration	28
(b) Retirement	28
(6) Super's Career Pattern Study	29
(7) Vocational Behaviors	33
(8) Vocational self-concept	37
C. Summary	38
III. METHODS AND PROCEDURES	41
A. Introduction	41
B. The Groups Studied	41
1. Selection	41
2. Size	43
3. Characteristics	43
C. Measures Used	45
1. Standard measures	45
a. Kuder Preference	45
b. The Differential Aptitude Tests	46
2. Special measures	46
a. Vocational Maturity Instrument	46
b. Occupational Aspiration Scale	47
c. Vocational Values Inventory	48
d. Social Participation Scale	50
3. School achievement	51
D. Scoring Procedures	51
1. Standard measures	51
2. Special measures	52
a. Vocational Maturity Instrument	52
b. Socio-economic status	66
c. Place of residence	66
d. Age and Sex	66
e. Occupational Aspiration Scale	66
f. Vocational Values Inventory	68
g. Social Participation Scale	69
h. School achievement	70
E. Research Procedures	70
1. Type of design	70
2. Collection of data	70
3. Error reduction	70
4. Statistical procedures	72
F. Summary	72

Chapter	Page
IV. REPORT OF FINDINGS	74
A. Introduction	74
B. Objective One	74
1. Scholastic aptitude	75
2. School achievement	76
3. Occupational aspiration	78
4. Social participation	81
5. Socio-economic status of fathers	83
6. Socio-economic status of preferred job	84
7. Interests	85
8. Aptitudes	85
9. Values	88
C. Objective Two	90
1. Vocational maturity	91
2. Vocational behaviors	92
D. Objective Three	103
1. Variables not related to vocational maturity	103
2. Variables related to vocational maturity or vocational behaviors	104
a. Sex	104
b. Age	107
c. Occupational aspiration	108
d. School achievement	109
e. Socio-economic status of preferred job	110
f. Social participation	110
g. Kuder Preference Record	113
h. The Differential Aptitude Tests	116
i. Vocational Values Inventory	119
3. Summary	122
V. SUMMARY, CONCLUSIONS AND IMPLICATIONS	124
A. Introduction	124
B. Summary of the Study	124
1. Statement of the problem	124
2. Objectives of the study	125
3. Major features of the study	125
a. Foundations of the study	125
b. Methods	126

Chapter	Page
C. Summary of Findings	127
1. Objective One	127
a. Place of residence	128
b. Age and Sex	128
c. Scholastic aptitude	128
d. School achievement	129
e. Occupational aspiration	129
f. Social participation	129
g. Index of socio-economic status	130
h. Kuder interests	130
i. Vocational values	131
2. Objective Two	131
a. Vocational maturity	131
b. Vocational behaviors	132
3. Objective Three	133
a. Variables not related to vocational maturity	133
b. Variables related to vocational maturity	133
D. Conclusions	134
E. Implications for Education	136
F. Recommendations for Further Research	138
 BIBLIOGRAPHY	 141
APPENDICES	146

LIST OF TABLES

Table	Page
1. The groups studied by sex and school . . .	43
2. The groups studied by place of residence and school.. . . .	44
3. The groups studied by age and school . . .	45
4. Descriptive measures of scholastic aptitude of ninth grade classes at three Michigan high schools	76
5. Descriptive measures of school achievement in required subjects for eighth and ninth grade years for students in three Michigan high schools	77
6. Descriptive measures of occupational aspir- ation scores for ninth grade classes in three Michigan high schools	78
7. Mean scores of occupational expectation and aspiration by sex for the ninth grade classes at three Michigan high schools . .	79
8. Mean scores of occupational expectation and aspiration when schooling is over by sex for the ninth grade classes at three Michigan high schools	81
9. Descriptive measures of social participa- tion scores for ninth grade students in three Michigan high schools.	82
10. Descriptive measures of an Index of socio- economic status of fathers of ninth grade students in three Michigan high schools. .	83

Table	Page
11. Descriptive measures of an index of socio-economic status of preferred jobs for ninth grade classes in three Michigan high schools . .	84
12. Descriptive measures of Kuder vocational scores for ninth grade classes in three Michigan high schools	86
13. Descriptive measures of The Differential Aptitude Tests scores for ninth grade students in three Michigan high schools	87
14. Descriptive measures of vocational value scores for ninth grade students in three Michigan high schools	89
15. Descriptive measures of vocational maturity scores for ninth grade classes in three Michigan high schools	92
16. Descriptive measures of scores for eight behaviors related to the vocational developmental task of crystallizing an occupational preference for ninth grade classes in three Michigan high schools	93
17. Significant correlations between vocational behavior and selected variables for the ninth grade classes at three Michigan high schools .	106
18. Significant correlations between vocational behaviors and social participation for the ninth grade classes at three Michigan high schools	111
19. Significant correlations between vocational behaviors and the Kuder Preference Record for the ninth grade classes at three Michigan high schools	114
20. Significant correlations between vocational behaviors and The Differential Aptitudes Tests for the ninth grade classes at three Michigan high schools	117
21. Significant correlations between vocational behaviors and Vocational Values Inventory for the ninth grade classes at three Michigan high schools	120

LIST OF FIGURES

Figure		Page
1.	Distribution of raw scores: "awareness of the need to crystallize an occupational preference" (L'Anse)	97
2.	Distribution of raw scores: "use of resources in gathering information about self and future" (L'Anse)	97
3.	Distribution of raw scores: "awareness of factors to consider in formulating an occupational preference" (L'Anse)	98
4.	Distribution of raw scores: "awareness of contingencies which may affect vocational goals" (L'Anse)	99
5.	Distribution of raw scores: "awareness of present-future relationships" (L'Anse)	100
6.	Distribution of raw scores: "formulation of a generalized occupational preference" (L'Anse)	101
7.	Distribution of raw scores: "possession of information concerning the preferred occupation" (L'Anse)	102
8.	Distribution of raw scores: "planning for the preferred occupation" (L'Anse)	102

LIST OF APPENDICES

Appendix	Page
A-1. Vocational Maturity Instrument . . .	147
A-2. Occupational Aspiration Scale . . .	152
A-3. Vocational Values Inventory	155
A-4. Vocational Values Answer Sheet . . .	167
A-5. Social Participation Scale	168
B-1. Distribution of raw scores: "awareness of present-future relation- ships" (Onaway)	169
B-2. Distribution of raw scores: "use of resources in gathering information about self and future" (Crystal Falls)	169

CHAPTER I

INTRODUCTION TO THE STUDY

Purpose

The primary focus of this research is the further development and testing of a method of assessing vocational maturity of youth. This study represents an attempt to measure the behavioral attributes and attitudes that are indicative of the vocational developmental task of crystallizing an occupational preference.

A secondary purpose of this study is to provide a descriptive bench mark for the Rural Schools Project, a phase of A Research and Development Program in Vocational-Technical Education in the College of Education at Michigan State University. The bench mark is the variables which have been found or are thought to be related to the vocational maturity of individuals.

The bases for this study are found in the theories of vocational development posited by Ginzberg¹ and

¹Eli Ginzberg, et al., Occupational Choice: An Approach to a General Theory (New York: Columbia University Press, 1951), Chapter xiii.

Super.² The approach utilized in this study is to describe the degree of vocational maturity and to discern factors related to vocational maturity.

Statement of the Problem

This study focuses on the problem of a need for a method to assess the vocational maturity of youth so educators can provide vocational experiences at the appropriate stage of vocational development.

The relationship between man, his education, and his work is becoming increasingly interdependent. Education and training tend to allocate man to the world of work. Conversely, the work of man requires increasing amounts of education. Thus, each person must be provided with the opportunities that will enable him to enter and to progress to higher levels in work. Since education is placed squarely between man and his work, it is the key to entering and progressing in work.

Our society values the freedom of individuals to select their occupation. Our ideal is to have each individual use his talents in a way that will maximize benefits to him and society. The occurrence of a free and wise occupational choice in American society requires

²Donald Super, et al., Vocational Development: A Framework for Research (New York: Bureau of Publications, Teachers College, Columbia University, 1957), Chapters iii and iv.

an understanding of the vocational development process and the tools to assess the individual's progress towards individually satisfying and socially useful work.

The effectiveness of vocational programs is dependent on the appropriateness of the educational experience in terms of the individual's level of vocational development. A case in point is the teaching of occupationally oriented vocational agriculture to ninth grade boys. The teaching is an attempt to provide occupational experiences before an occupational preference has been crystallized.

Vocational development, like other aspects of human development, is a patterned continuous process. The process requires that developmental events be appropriately synchronized to effect maximum vocational development. Developmental events can be synchronized when the individual's stage of vocational development can be determined. Vocational experiences are most meaningful when they are provided at the appropriate developmental stage.

Currently, there is a need for an effective method to assess the level of vocational maturity. An assessment of vocational maturity can be made by: (1) assessing the vocational maturity of one individual in relation to the vocational maturity of others or (2) assessing the level of individual vocational maturity by determining the vocational developmental task with which the individual is

coping. Because of individual differences, the technique of comparing one person with another results only in relative statements about the individuals concerned. An attempt to develop an effective method utilizing the latter approach is an objective of this study.

The ability of educators to ascertain the degree of individual vocational maturity would enhance the vocational education process. This ability is critical at a time when vocational educators are attempting to broaden the intent and scope of vocational education programs.. Technological advances cause skills to become obsolete very rapidly. The emphasis on skill training provided through programs of the past is no longer adequate. However, vocational education programs may be broadened to include those experiences that enhance vocational development. Vocational education, in this sense, includes not only the abilities and understandings necessary in the world of work, but also the experiences and decisions leading to the expression of an occupational preference. Such an expression is a prerequisite to occupational preparation.

The problem of providing appropriate vocational education experiences rests on the educators ability to assess the level of vocational maturity. Given an understanding of the vocational development process and the present level of maturity of any individual, the

vocational educator should be better able to program meaningful experiences for the individual. Information about the vocational maturity of groups would provide similar opportunities. This approach includes the appropriateness of occupational exploration programs such as industrial arts and non-occupational work experience programs.

Rationale

The 1960 White House Conference on Children and Youth reported crystallization of an occupational preference as a critical problem for youth.³ This was reaffirmed in a study of twenty-five hundred youth prepared for use at the 1963 National Conference on Children and Youth.⁴ The cause for youth's concern in the crystallization of an occupational preference is easy to discern. The current world of work is vastly complex and is changing rapidly. The number of occupations officially categorized is growing rapidly.⁵ New occupations are being created at an increasing rate and old

³Marcia Friedman, "Work and the Adolescent," Children and Youth in the 1960's (Golden Anniversary White House Conference on Children and Youth, Inc., 1960) pp. 137-153.

⁴Elmo Roper & Associates, "A Study of Problems, Attitudes and Aspirations of Rural Youth," prepared for the Rockefeller Brothers Fund (October, 1963).

⁵Friedman, op. cit., P. 138.

occupations, particularly at the unskilled and semi-skilled levels, are giving way to automation.

Today's youth face an extremely complex process in crystallizing an occupational preference. They must gain knowledge of a complex world of work, expect to change occupations or occupational level at least five times and submit to retraining several times during their life span.⁶ Youth must secure sufficient skill to gain entry into an occupation but must be wary of becoming so specifically skilled that they become obsolete human beings as technology advances.

The increase in high school and college age youth, reflecting the high birth rate following World War II, complicates the problem. A crucial paradox exists for today's young people. Untrained and unskilled young people are coming into critical over-supply, while the jobs that they can do are vanishing due to the elimination of unskilled jobs by automation.

Thus, it is easy to see why youth and society rank the crystallization of an occupational preference as a critical problem. If educators are to assist youth in making wise vocational decisions, it is imperative that their knowledge of the vocational development process be increased.

⁶Grand Venn, Man, Education and Work (Washington, D. C.: American Council on Education, 1964), P. 26.

Objectives of the Study

The specific objectives of this study are to:

1. describe three ninth grade classes using descriptive variables found or thought to be related to vocational maturity.
2. assess the vocational maturity of these students according to the vocational development theory of Super.
3. ascertain the relationship of the selected variables to the vocational maturity of the students.

Assumptions on Which the Study is Based

1. Human behavior is predictable and therefore occupational preferences are formed through regularized patterns.
2. The process of vocational development: (a) is largely irreversible, (b) is patterned and continuous and (c) can be described by a series of stages and vocational development tasks.
3. The process of vocational development is influenced by a number of factors.
4. Maturation and learning operate interdependently to expand and modify the individuals vocational behavior.

5. The vocational behaviors relating to the developmental task of crystallizing an occupational preference are largely verbal.
6. Responses elicited from individuals with printed words are adequate to describe the degree of vocational maturity.
7. Nominal and ordinal data are adequate to form descriptive statements about populations.

Definitions of Terms

A number of the words and concepts used in this report have specific meanings. These specialized terms and concepts are defined in the following section to add clarity and comprehension to the report.

1. Crystallization: ". . . the crystallization of a vocational preference is the process of formulating a generalized vocational goal. It takes place in early and middle adolescence. It is essentially and at its best a cognitive process."⁷
2. Development: "Refers to an orderly and sequential change, either in the status of the organism or in behavior exhibited by an organism."⁸

⁷Donald Super, "Vocational Development in Adolescence and Early Adulthood: Task and Behaviors," Career Development: Self-Concept Theory (New York: College Entrance Examination Board, 1963), P. 84.

⁸Robert Watson, Psychology of a Child (New York: John Wiley & Sons, Inc., 1965), pp. 56-57.

3. Developmental Tasks: ". . . a task which arises at or about a certain period in the life of the individual, successful achievement of which leads to his happiness and to success with later tasks while failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks."⁹
4. Vocational Behavior: Work related stimuli and corresponding responses either covert or overt in nature.
5. Vocational Development: "The processes of growth and learning which subsumes all instances of vocational behavior. The progressive increase and modification of a person's capacities and dispositions for particular kinds of vocational behavior and of his repertoire of vocational behavior. In this sense, vocational development encompasses all aspects of development which can be identified as related to work."¹⁰

⁹Robert Havighurst, Human Development and Education (New York: Longmans, Green and Co., 1953), P. 2.

¹⁰Super, Vocational Development: A Framework for Research, Op. Cit., pp. 131-132.

6. Vocational Developmental Task: "A task encountered at or about a certain period in the life of an individual and deriving from the expectation that the members of a social group manifest a relatively orderly behavioral sequence in preparing for and participating in the activity of work."¹¹
7. Vocational Education: Educational experiences provided at the appropriate stage of development designed to enhance the vocational adjustment of an individual.
8. Vocational Life Stage: A period in the life of an individual that corresponds roughly to a certain age span during which certain vocational developmental tasks are manifested.
9. Vocational Maturity: Refers to the attained level or stage of development with reference to work. Vocational maturity may be judged by the nature of the vocational development task with which a person is attempting to cope and, more precisely, by the vocational behaviors manifested by the person in coping with the developmental task.¹²

¹¹Ibid., P. 132

¹²Super, "Vocational Development in Adolescence and Early Adulthood: Tasks and Behaviors," Career Development: Self-Concept Theory, Op. Cit., P. 79.

10. Vocational Self-Concept: The self attributes the individual considers vocationally relevant, whether or not they have been translated into a vocational preference.¹³
11. Vocational Values: A vocational value represents a desired style or kind of life as it is determined by the work done by an individual. The activities related to the job, the job setting, the social perception of the job, and other factors may be important in determining vocational values. Specifically, the vocational values of concern in this research are:¹⁴
 - a. Altruism
 - b. Control
 - c. Job Freedom
 - d. Money
 - e. Prestige
 - f. Security
 - g. Self-realization

¹³Donald Super, "Toward Making Self-Concept Theory Operational," Career Development: Self-Concept Theory (New York: College Entrance Examination Board, 1963), P. 20.

¹⁴Buford Stefflre, "Tentative Manual for Vocational Values Inventory" (East Lansing: College of Education, Michigan State University, 1958), pp. 1-3. (mimeographed.)

Summary

This chapter is devoted to an overview of the impending research. This study might be described as theory testing in that the recent vocational development formulations of Super are used as a basis for measuring vocational maturity. Vocational maturity, as measured by a special instrument, will be related to the descriptive bench mark data in a search for relationships. The study is also a part of a larger vocational-technical education development project of Michigan State University with the expressed purpose of establishing bench mark data.

The potential contribution of the study is to the process of vocational education. Vocational education experiences are meaningful when they are appropriate to the vocational maturity and understandings of the learner. The effectiveness of vocational education is closely related to the educators ability to specify the vocational maturity of program participants. This study is concerned with a method of specifying the degree of vocational maturity and its relationship to selected factors.

The following chapter sets forth the bases of the study by briefly reviewing occupational choice theories and focusing on the development of Super's theory of vocational development. Super's theory forms the foundation for this study.

CHAPTER II

THEORETICAL FOUNDATION FOR THE STUDY

Introduction

This chapter is a review of selected literature associated with theories of occupational choice and especially with the development of Super's theory of vocational development. The review: (1) focuses on theories of occupational choice, (2) summarizes the work of Ginzberg, and (3) traces the growth of the vocational development theory of Super.

The review includes a diversity of theories on occupational choice, any one of which could provide a basis for studying the occupational choice process. The specific work of Ginzberg is included because it forms the foundation for Super's theory of vocational development. Super's theory is the cornerstone of this research.

Theories of Occupational Choice and Vocational Development

A study of the literature reveals at least ten general theories or "approaches to theory" of occupational choice and development. Most of the theoretical

formulations have appeared in the literature since 1951. Although the history of occupational choice theory is short, the literature on the subject is extensive.

The theories of occupational choice and development are categorized and presented according to the following descriptive headings: (1) "accident" theory, (2) "impulse" theory, (3) "need" theory, (4) "social system" theory, and (5) "life-stage theories of vocational development." The first four categories of theories are included to recognize the existence of a number of theories of occupational choice. The last category, "life-stage theories of vocational development," is the one of concern in this study.

Accident Theory

The "Accident Theory" places major emphasis on forces external to the individual which minimize the influence of the individual in making career decisions. The individual assumes a passive role with respect to the choice process. This theory is based upon the assumption that man has little control over his environment and therefore must adjust his life rather than modify his surroundings.

Ginzberg is critical of the accident theory for relying "uncritically, on external factors or exposure

and chance circumstance and ignoring a wide range of individual options."¹

Impulse Theory

Proponents of psychoanalytic theory contend that occupational choice can be understood through a structural framework that explains the individual's behavior in terms of unconscious forces. The behavioral motivation of an individual is explained as instinctual and biological satisfaction. A vocation becomes a "healthy" expression of gratification.

The theory developed by Bordin is an example of psychoanalytic or impulse theory.² Bordin's theory is based upon the assumptions of continuity of personality development and infantile instinctual sources of gratifications. A heavy emphasis is placed upon the first six years in the life of an individual. The theory deals with dimensions including the infantile gratifications that an occupation offers. Each dimension is an expression of an impulse from a different developmental period.

¹Eli Ginzberg, et al., Occupational Choice: An Approach to a General Theory (New York: Columbia University Press, 1951), P. 18.

²Edward Bordin, Barbara Nashmann and Stanley Segal, "An Articulated Framework for Vocational Development," Journal of Counseling Psychology, X (Spring, 1963), pp. 107-116.

The impulse theory, like accident theory, portrays the individual's role in the career development process as a passive one.

Need Theory

Hoppock contends that occupational choice is based on the needs of the individual. His theory deals with ten major points.³

1. Occupations are an expression of needs.
2. The occupation chosen is the one the individual believes will best meet his needs.
3. Needs may be cognitive or affective. In either case, they influence choices.
4. Occupational choice begins with the awareness that an occupation can meet needs.
5. Occupational choice improves with the ability to anticipate how well a prospective occupation will meet needs.
6. Information about self affects occupational choice by helping the individual to recognize wants.
7. Information about occupations affects occupational choice by helping the individual discover potential need satisfying occupations.
8. Job satisfaction is determined by the ratio of what the individual has and what he wants.
9. Satisfaction comes from a job that meets present needs or from one that promises to meet future needs.

³Robert Hoppock, Occupational Information (New York: McGraw-Hill Book Company, Inc., 1957), pp. 74-85.

10. Occupational choice is subject to change when a job change will better meet individual needs.

Hoppock's Theory emphasizes the "why" rather than the "how" of occupational choice.

A theory by Roe permeates the need and impulse categories.⁴ She perceives the intensity of unconscious needs, as well as their organization, as the major determinant of the degree of interest an individual has in an occupation. The unconscious drives develop early in life from unsatisfied needs.

Holland has classified occupations based on six personality types: (1) realistic, (2) intellectual, (3) social, (4) conventional, (5) enterprising, and (6) artistic.⁵ He assumes people fall into a pattern and style of behavior which tends to determine their occupation.

Social System Theory

The sociological theorists view vocational choice as a function of the social system.⁶ Particular work

⁴ Anne Roe, The Psychology of Occupations (New York: John Wiley and Sons, Inc., 1956), pp. 318-321.

⁵ John Holland, "A Theory of Vocational Choice," Journal of Counseling Psychology, VI (September, 1959), pp. 35-44.

⁶ Theodore Caplow, The Sociology of Work (Minneapolis: The University of Minnesota Press, 1954).

values are developed within the social system and these values in turn affect a vocational choice. Furthermore, social status, occupational and educational aspirations, ethnic background, personality, self-concepts, place of residence, and intelligence are factors identified in the sociological literature as having influence upon occupational choice.

Life-Stage Theories of Vocational Development

The work of two theorists predominates in the category of vocational development. The pioneer work of Ginzberg serves as a foundation for the theorizing of Super.

Ginzberg's Theory of Occupational Choice

Ginzberg concluded his work by publishing the research and theory in book form.⁷ According to his theory, occupational choice is a developmental process which involves a series of decisions made over a period of time. Each step in the process has meaningful relation to those which precede or follow. Thus, each decision is a link in a chain of decisions which leads to a final choice of an occupation.

The developmental process is largely irreversible. Since the process is dependent upon chronological age and

⁷Ginzberg, et al., Op. Cit.

developmental growth, it cannot be re-experienced. Each experience influences related decisions made following the internalization of the experience.

A third aspect of Ginzberg's theory is that every choice ends in a compromise. Each person makes a final occupational choice encompassing his interests, capacities, values, and reality considerations. No single element is the sole determinant of the final occupational choice. Hence, the individual must find a satisfactory balance of the elements necessitating compromise.

Ginzberg divides the process into three stages. They are: (1) fantasy (age 6 to 11), (2) tentative (age 11 to 17) and (3) realistic (age 17 and up). These stages are not absolutes but are relative to each individual. Because people develop at differential rates, the stages specified reflect a normal rate of development.

The fantasy choice stage is characterized by assuming the role of an adult in fantasy. The "dreaming" is concerned with the ends or result of work. The person has little ability to assess himself or the real world because of limited experience.

The tentative choice stage is characterized by four substages. They are:

1. interest
2. capacity
3. values
4. transition

The first three substages represent consideration of internal forces. The final substage is the beginning of an awareness of external forces in the choice process.

The interest substage covers the period from age eleven to twelve years. At this point in development, the individual bases his occupational preferences on likes and dislikes.

The capacity substage, the second of the four substages of the tentative choice period, develops at age thirteen to fourteen years. Occupational considerations now involve perceived capacities as well as likes and dislikes carried over from the interest substage. Grades in school and play and work experiences aid in the assessment of strength and weaknesses. The groups studied in this research fall into the capacity substage of development on the basis of age. However, Ginzberg's Theory is not the specific base of the study. It is included as the foundation on which Super's Theory is built. It is the latter theory that is the basis for this research.

During the value substage, the fifteen to sixteen year old individual begins to synthesize interest, capacities and values while anticipating his occupational future. Conscious consideration is given to the values the individual hopes to realize through work.

The individual enters into the transition substage at about age seventeen or high school graduation. Most individuals realize at this point that their approach to occupational choice has been too subjective. This substage is characterized by an end to the turmoil of adolescence, an increased awareness of reality and the realization of a need to take action. The individual adopts an instrumental attitude toward work and considers such factors as working conditions, training required and financial returns.

The final stage, that of realistic choice, is represented by three substages: (1) exploration, (2) crystallization and (3) specification. This stage is heavily weighted by reality considerations. The individual recognizes that he must work out a compromise between what he wants and the opportunities that are available.

The exploration substage is a period of searching through experience for an understanding of reality and deeper insight into personal needs and desires. Each experience is a test of the person and of reality.

Crystallization is the synthesis of internal and external forces into a commitment to a particular field of work. This is the beginning of the compromise process. The individual has narrowed his choice of occupation to a broad field such as science or humanities.

The specification substage is a process of closure. The selection of a specific occupation is made, and the stability of the occupational selection is tested by the individual's resistance to change from the chosen course.

Some writers tend to support Ginzberg's theory while others voice criticism. The basic areas of strength and support are: (1) the idea that occupational choice is a developmental process, (2) the process is largely irreversible, and (3) a person passes through a series of life-stages as he progresses toward occupational specification.

The author feels Ginzberg's theory is inadequate in several respects.

1. It ignores the first five years of life which are the most important for "impulse" theorists.
2. It does not provide an explanation for occupational changes that occur after initial specification of occupation.
3. It does not recognize the influence of values until about age fifteen.
4. A two year age span within substages may separate individuals on the basis of sex, because of the differential rate of general development between the sexes, rather than on vocational development.

Super's Theory of Vocational Development

Super's first approach to a theory of vocational development was a result of constructive criticism leveled at the work of Ginzberg. He was critical of Ginzberg's theory on four counts:⁸

1. It did not build adequately on previous research.
2. Different meaning for "choice" at different age levels.
3. A falseness of the distinction between "choice" and "adjustment."
4. The compromise process was not studied nor clarified.

Super's criticism of Ginzberg involved the elements that he felt an adequate theory of vocational development must take into account. He listed nearly a dozen elements to consider in theorizing about vocational development. According to Super, a comprehensive theory of vocational development must be based on the following:⁹

1. Individual differences
2. Occupational multi-potentiality
3. Occupational ability patterns
4. Identification and role models
5. Continuity of adjustment

⁸ Donald Super, "A Theory of Vocational Development," The American Psychologist, VIII (May, 1953), pp. 185-190.

⁹ Ibid., pp. 187-189.

6. Life stages
7. Career patterns
8. Notion that development can be directed or guided
9. Idea that development is the result of interaction
10. Interaction of the individual and his environment
11. Job satisfaction
12. Work as a way of life

The first theoretical formulations posited by Super were attempts to integrate three basic orientations: (1) trait and factor theory, (2) social systems theory, and (3) personality theory into a vocational development model.¹⁰

Super's theory includes three basic assumptions about vocational development and a chronological ordering of the stages in the process. The assumptions are that vocational development is: (1) an on-going, sequential, generally irreversible process, (2) a regular patterned process, and (3) a dynamic process. The chronology of the process is summed up in the following series of vocational life stages.¹¹

¹⁰Donald Super and Paul Bachrach, Scientific Careers and Vocational Development Theory: A Review, A Critique and Some Recommendations (New York: Columbia University, 1957), XII, pp. 1-135.

¹¹Donald Super, et al., Vocational Development: A Framework for Research (New York: Bureau of Publications, Teachers College, Columbia University, 1957), pp. 40-43.

Growth Stage (Birth - 14)

The first stage is characterized as one of growth. It starts with conception and continues until approximately the age of fourteen. As the individual progresses through this stage, interests and capacities become more important and there is increasing social participation and reality testing. The subjects of this study are largely fourteen years of age and are beginning to emerge from this stage. This stage has three substages.

Fantasy (4-10). -- The fantasy occupational preference period is characterized by assuming the role of adult in fantasy. The "dreaming" is concerned with the ends or results of work. The person in this substage has limited experience and thus little ability to assess himself or the real world of work.

Interest (11-12). -- Individual likes and dislikes are the basis of occupational considerations in this substage of the vocational development process.

Capacity (13-14). -- Vocational consideration involves not only likes and dislikes carried over from the interest substage, but also involves perceived capacities. Thus, abilities are given more weight and job requirements (including training) are considered by the individual.

Exploration Stage (15 - 24)

The second life stage is entitled exploration and is the period an individual tries to understand himself and find his place in the world of work. This stage generally coincides with the period of adolescence where a person becomes ready to assume adult responsibilities which characterize the third stage. The exploration stage has three substages.

Tentative (15-17). -- Needs, interests, capacities, values, and opportunities in the world of work are all considered during this substage. Occupational preferences are made and tried out in fantasy, discussion, study, work experiences and so forth. During this substage, the individual is called upon to crystallize an occupational preference. The behaviors leading to the crystallization of an occupational preference are a major target of this research.

Transition (18-21). -- This substage occurs at about the time of high school graduation when most individuals realize their approach to occupational choice has been too subjective and they develop an increasing awareness of reality and the realization of the need to act in the choice making process. This realization leads them to seek advice from significant people in their lives and adopt an instrumental attitude toward work where they consider such factors as working conditions, training required and financial returns.

Trial (22-24). -- During this substage, the individual finds an appropriate field and locates a beginning job which is tried out as a life work. An individual may have a series of trial jobs before stability is reached.

Establishment Stage (25-44)

The individual, having found an appropriate vocational field, puts forth an effort to make a permanent place in it. Some trial jobs may occur early in this stage but establishment may also begin without trial, especially in a professional occupation. There are three substages to the establishment stage.

Trial (25-30). -- The occupational field perceived by the individual as suitable may prove to be unsatisfactory resulting in additional trials before a satisfactory life work is located.

Stabilization (31-44). -- When a satisfactory work is found, effort is put forth to stabilize or secure a place in the career. These years are generally the most productive and creative.

Maintenance Stage (45 - 64)

During this stage the individual is largely concerned with holding his place in the world of work. He follows along established lines and little attempt is made to find new ones.

Decline Stage (65 - on)

The decline stage is characterized by gradual loss of physical and mental powers. Work activity declines and in due course ceases. New roles must be developed. There are two substages of this stage.

Deceleration (65-70). -- The characteristic of this substage is a slackening of the work pace, a shifting of duties, or the changing of the nature of work to suit declining capacities. Often part-time jobs are substituted for full-time occupations.

Retirement (70-on). -- Complete cessation of occupation comes for all in the due course of time. This comes easily and pleasantly to some, while to others it comes with difficulty and disappointment. To a few it comes only with death.

Super's life stages relate to the study being reported herein. The individuals involved in the study were high school freshmen and were in transition from the growth to the exploration stage. The shift from the growth to the exploration stage generally occurs with the movement from junior to senior high school. The individuals were selected because they were in this transition period and were being forced to make vocational considerations. The decisions to be made were relative to high school courses which ultimately have a bearing on occupational preferences.

Super's Career Pattern Study¹²

Super, unlike Ginzberg, began testing his theoretical model in a longitudinal study. The study involved 138 eighth and 142 ninth grade boys in Middletown, New York. Middletown is a diversified industrial community with a population of 22,000.

Boys at the ninth grade level were chosen because they were already faced with, or soon would be faced with, the task of preparing to make vocational choices. The purpose of the study was to observe the vocational behavior of the boys from relatively early in the vocational choice-making process until a time when the careers of many would be stabilized and the pattern of their careers would be clear.

Super attempted to assess the factors associated with vocational behavior and development using both interview, projective and questionnaire techniques. He identified six useful indices of vocational maturity from twenty which he originally posited. These six indices are:¹³

1. Concern with choice

¹²Donald Super and Phoebe Overstreet, The Vocational Maturity of Ninth Grade Boys (New York: Teachers College, Columbia University, Bureau of Publications, 1960).

¹³Ibid., pp. 14-60.

2. Acceptance of responsibility
3. Specificity of information
4. Specificity of planning
5. Extent of planning
6. Use of resources

Utilizing the six indices of vocational maturity, Super found the following variables to have statistically significant positive correlation with the vocational maturity index total.¹⁴

1. Intelligence
2. Parental occupational level
3. Family cohesiveness
4. School curriculum
5. Cultural stimulation
6. Boy's vocational aspiration level
7. Agreement: Levels of aspiration and expectation
8. School achievement: Grades
9. Achievement - Underachievement
10. Participation in school activities
11. Participation in out of school activities
12. Adolescent independence

¹⁴Ibid., P. 114.

The following variables were not significantly related to the vocational maturity index total.¹⁵

1. Age (within one school grade)
2. House rating
3. Father's educational level
4. Mother's educational level
5. Birth order
6. Presence of parental vocational aspiration for boy
7. Parental mobility
8. Social mobility
9. Urban rather than rural residence
10. Protestant
11. Catholic
12. Intrinsic versus extrinsic work values
13. Adjustment (as assessed by the thematic appreciation test and incomplete sentence blank)
14. Father identification
15. Peer acceptance

Each of the above variables studied by Super was considered for inclusion in the study reported herein. Variables similar to Super's that were selected and included for study are:

1. Scholastic aptitude

¹⁵Ibid., P. 115.

2. Father's occupation
3. Occupational aspiration
4. School achievement: Grades
5. Participation in in-school and out-of-school activities
6. Age
7. Residence

The results of Super's Career Pattern Study suggest that the vocational maturity of ninth grade boys is shown by how they are thinking about future goals and what they are doing about them.

The career pattern study led Super to modify the names of the two substages of establishment, originally named as trial and stabilization, to the following:¹⁶

1. Exploratory Stage
 - a. Tentative substage
 - b. Transition substage
 - c. Trial (little commitment) substage
2. Establishment Stage
 - a. Trial (commitment) and stabilization substage
 - b. Advancement substage

¹⁶Donald Super, "Vocational Development in Adolescence and Early Adulthood: Tasks and Behaviors," Career Development: Self-Concept Theory (New York: College Entrance Examination Board, 1963), P. 81.

Furthermore, he was able to suggest the following list of vocational developmental tasks.

1. Crystallizing a vocational preference
2. Specifying a vocational preference
3. Implementing a vocational preference
4. Stabilizing a vocation
5. Consolidating status and advancing in a vocation

Vocational Behaviors¹⁷

Super began to operationalize the idea of the vocational development tasks when he specified the vocational behaviors and attitudes associated with crystallizing a vocational preference. He assumed that coping with this vocational developmental task is largely a cognitive process. The attitudes and behaviors suggested are:

1. awareness of the need to crystallize an occupational preference.
2. use of resources in gathering information about self and work.
3. awareness of factors to consider in formulating an occupational preference.
4. awareness of contingencies which may affect vocational goals.
5. differentiation of interest and values.

¹⁷Ibid., pp. 84-87.

6. awareness of present-future relationships.
7. formulation of a generalized occupational preference.
8. consistency of occupational preference.
9. possession of information concerning the preferred occupation.
10. planning for the preferred occupation.
11. wisdom of the vocational preference.

"Awareness of the need to crystallize a general vocational preference" is not necessary for crystallization to occur, but readiness to do something is increased by recognition of the need to do it. The behaviors which constitute this attitude are generally verbal, but can also be instrumental. A discussion about high school courses that would contribute to some future career illustrates the verbal behavior. Seeking help from a teacher in course planning illustrates instrumental behavior.

"Use of resources in gathering information about self and work" is a behavior that is easily observed. Seeking help from people, reading career material, and looking for a part-time job in the field of preference are behavioral evidence of the use of resources.

"Awareness of factors to consider in formulating a vocational preference" is a behavior conducive to the crystallization of a vocational preference. The ability to do school work, interests, abilities, pay scales,

job security and parental approval are factors which aid the formulation of a vocational preference.

"Awareness of contingencies which may affect vocational goals" is very much like the preceding behavior. This behavior functions to rule out some possible preferences. The behaviors associated with this attitude are largely verbal and may include such factors as military service, financial help needed for educational plans, and high school courses required for an occupation.

"Differentiation of interest and values" is shown by the degree to which the respondent makes some high and some low scores on inventoried interests and values.

"Awareness of present-future relationships" involves relating present pre-vocational activities to future vocational goals. Choosing a particular course essential to a future occupation and planning for education for a job preference are indications of relating present and future.

"Formulation of a generalized occupational preference" is the result of the crystallization process. The naming of a specific occupational preference at the ninth grade level is actually the identification of a general occupational preference. The occupational title serves as a symbol for a number of activities of interest

to the individual. The behaviors related to this developmental task are largely verbal and involve expressions of preference.

"Consistency of occupational preference" is another type of behavior related to crystallization of vocational preference. However, Super found that consistency of several preferences expressed at the same time are not related to vocational maturity. Consistency over a period of time may be a valid index of vocational maturity.

"Possession of information concerning the preferred occupation" is a verbal behavior whereby the individual shows what he knows about an occupational preference. Knowledge of conditions of work, what the worker does, and opportunities in the occupation are measures of the behavior.

"Planning for the preferred occupation" is also a verbal behavior. Expression by the individual of plans made such as education and training necessary to implement a vocational preference, special hazards involved in the work and the amount of money the worker earns in the occupation are indices of this vocational behavior.

"Wisdom of a vocational preference" has been shown by Super to lack validity at age fourteen. It may become valid during adolescence.

The vocational behaviors described above are a major focus of this study. The instrument to measure vocational maturity consists of items to quantify eight of the vocational behaviors. The scores for each of the vocational behaviors, when added together, become the index of vocational maturity.

The explanation of each vocational behavior suggests possible areas for sampling the global vocational behaviors. These suggestions are included because many of them were used by the author in developing the Vocational Maturity Instrument.

Vocational Self-Concept

A central feature of Super's theory of vocational development is the idea of vocational self-concept. The expression of a vocational preference is the way a person describes himself in occupational terms. When a person implements an occupational preference, he seeks to implement a concept of himself. The occupation provides a role appropriate to the self-concept.

Super defines self-concept as:

" . . . self precepts which have acquired meaning and which have been related to other self precepts. A self-concept is the individual's picture of himself, the perceived self with accrued meanings. Since the person cannot ascribe meanings to himself in a vacuum, the concept of self is generally a

picture of the self in some role, some situation, in a position, performing some set of functions, or in some web of relationships."¹⁸

This definition limits self-concept to those precepts at the level of individual awareness.¹⁹

A vocational self-concept consists of the self attributes the individual considers vocationally relevant, whether or not they have been translated into a vocational preference.²⁰ A person perceiving himself as intelligent, patient, and altruistic may express his vocational self-concept as that of a teacher. He would implement that concept of self by becoming a teacher.

The notion of vocational self-concept is not a specific part of this study. However, self-report techniques are used which usually involve self-precepts with implications for the idea of vocational self-concept.

Summary

Several theories of occupational choice were highlighted to recognize the many theories in this field. The occupational choice theory of Ginzberg was reviewed

¹⁸Donald Super, "Self-Concepts in Vocational Development," Career Development: Self-Concept Theory (New York: College Entrance Examination Board, 1963), P. 1.

¹⁹Donald Super, "Toward Making Self-Concept Theory Operational," Career Development: Self-Concept Theory (New York: College Entrance Examination Board, 1963), P. 18.

²⁰Ibid., P. 20.

because it forms the foundation for Super's theory of vocational development. Super's theory of vocational development forms the basis for this study.

Both Ginzberg and Super propose a sequential series of life stages through which an individual progresses toward vocational maturity. Super's unique contribution, and the idea that is central to this research, is the concept of vocational developmental tasks. He proposed five such tasks for the typical individual as he progresses toward work in American society. Vocational maturity, in this sense, is relative to the stage of development and the particular vocational developmental task with which the individual is coping.

This study focuses on one vocational developmental task--crystallizing an occupational preference. This task is typically met during the high school years.

The approach used in this study is to utilize Super's suggested vocational behaviors as indicators of an individual's coping with the developmental task of crystallizing an occupational preference. An instrument designed to measure the vocational behaviors, and hence progress towards the vocational developmental task, was developed by the author. This instrument, constructed from Super's theory to measure the vocational behaviors he posited, yields an index of vocational maturity or is a measure of progress toward the vocational developmental

task of crystallizing an occupational preference. Thus, Super's theory provides the rationale for the instrument and is the basis of the research.

This study uses Super's earlier research and his latest theory to develop a simpler method of measuring vocational maturity. His latest theory includes the notion that vocational maturity is relative to vocational developmental tasks which can be measured by the specific vocational behaviors manifested by individuals as they cope with these tasks.

The following chapter sets forth the methods and procedures used in the study. The next chapter includes sections on the groups studied, measures used, procedures for scoring the measures and research procedures.

CHAPTER III

METHODS AND PROCEDURES

Introduction

The object of this chapter is to convey to the reader an understanding of the processes involved in planning and conducting the study. Included in this chapter are: (1) selection and description of the groups, (2) special and standardized measures used, (3) scoring procedures, and (4) research procedures.

The Groups Studied

Selection

Two of the groups studied were in schools involved in The Rural Schools Project, a part of A Research and Development Program in Vocational-Technical Education in the College of Education at Michigan State University. The Rural Schools Project was designed to develop and demonstrate useful vocational-technical programs in small rural area high school in Michigan. Specifically, the following objectives were to be accomplished through programs in the pilot schools.

1. "Organize and teach courses covering content common to several occupations for students with different occupational goals.
2. Use simulated work experience as a substitute for supervised work experience where job stations are not available.
3. Offer a broad survey course of occupations to acquaint students with occupational opportunities for determining interests, aptitudes, and the vocational abilities and before they plan their careers and educational programs."¹

Boys and girls in the ninth grade at L'Anse, Michigan, as well as those in high schools cooperating in the above program at Crystal Falls and Onaway, Michigan, made up the populations. These schools were selected for inclusion in this study because they were in rural areas relatively isolated from the influence of industry and were relatively comparable except in programs offered. The youth of these communities had little opportunity to become familiar with modern occupations. Ninth grade students were selected because at this level they begin to select courses that will influence their educational and occupational future while they are not sufficiently mature vocationally to benefit from specific occupational preparation.

¹Paul Sweany, "The Development and Demonstration of Unified Programs of Vocational-Technical Education in Small Rural Area High Schools" (East Lansing: College of Education, Michigan State University, 1966), P. 1. (mimeographed.)

Size

The study involved 243 subjects -- ninety-two from L'Anse, seventy-six from Crystal Falls and seventy-five from Onaway (TABLE 1). The three groups were complete classes except at Onaway where up to ten freshmen did not participate in the study.

TABLE 1. -- The groups studied by sex and school.

Sex	Schools						TOTALS	
	L'Anse		Crystal Falls		Onaway			
	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Boys	44	47.8	35	46.1	39	52.0	118	48.6
Girls	48	52.2	41	53.9	36	48.0	125	51.4
Totals	92	100	76	100	75	100	243	100

Slightly more girls than boys were studied.

However, the Onaway School had slightly fewer girls than boys.

Characteristics

The three ninth grade groups were all residents of areas of less than 10,000 population (TABLE 2).

TABLE 2. -- The groups studied by place of residence and school:^a

Place of Residence	Schools					
	L'Anse		Crystal Falls		Onaway	
	No.	Per.	No.	Per.	No.	Per.
Farm	9	9.8	4	5.2	27	36.0
Rural Non-Farm	16	17.4	26	34.2	22	29.3
Town Under 2,500	64	69.6	18	23.7	16	21.3
City 2,500-10,000	3	3.2	28	36.8	10	13.3
Totals	92	100.0	76	99.9	75	99.9

^aPlace of residence is based on the report of subjects.

The make-up of the schools varied on a rural-urban dimension. The Onaway students were from a predominantly farm and rural non-farm population. The students in the L'Anse School were predominantly town residents. The Crystal Falls students resided largely in homes in the country or in town. Although all three schools represent rural populations, only forty of the subjects resided on farms. Twenty-seven of the forty farm residents were from the Onaway School.

The majority of students from the three schools were fourteen years of age (TABLE 3).

TABLE 3. -- The groups studied by age and school.

Age	Schools					
	L'Anse		Crystal Falls		Onaway	
	No.	Per.	No.	Per.	No.	Per.
13	2	2.2	6	7.9	6	8.0
14	73	79.3	66	86.8	60	80.0
15	13	14.1	4	5.2	3	4.0
16	3	3.3	..	..	4	5.3
17	..	..	..	..	1	1.3
18	..	..	..	..	1	1.3
No Response	1	1.1	..	..	..	..
Totals	92	100	76	99.9	75	99.9
Mean	14.2		14.0		14.2	
Standard Deviation	.52		.36		.81	

Measures Used

Standard Measures

Kuder Preference Record

The purpose of the Kuder Preference Record, Vocational Form C, is to measure ten broad vocational interest areas.

The instrument yields ten comparable scores that show the relative levels of interest of the examinee in broad vocational areas.²

The raw scores derived from the Kuder Preference Record were used for computation and analysis.

The Differential Aptitude Tests

The Differential Aptitude Tests is comprised of a battery of eight tests such as Verbal Reasoning and Numerical Ability to measure basic abilities of boys and girls. Each of the eight tests yield a score as an index of the basic ability measured. The possible scores range from forty on the Numerical Ability Test to one hundred on the Space Relations Test.

The scores from the Verbal Reasoning and Numerical Ability Tests were combined to give a score for scholastic ability.

The raw scores were used in computation and analysis.

Special Measures

Vocational Maturity Instrument

This instrument was designed and constructed by the researcher to measure the behaviors posited by Super

²Frederick Davis, Educational Measurements and Their Interpretation (Belmont, California: Wadsworth Publishing Co., 1964), P. 174.

to be indicative of the vocational developmental task of crystallizing an occupational preference. The measurement of these behaviors is discussed in the following section on scoring procedures. The instrument was also designed to measure family socio-economic status utilizing the occupation of student's fathers and Reiss' socio-economic conversion index.³ In addition, socio-economic status of student's preferred job, place of residence, age and sex were measured with the instrument. A copy of the instrument is included in Appendix A.

Occupational Aspiration Scale

This scale is an eight item, multiple choice instrument. It permits expression of occupational aspiration at both the "realistic" and "idealistic" levels. Both expression levels are assessed at two goal periods--short range (end of schooling) and long range (at age thirty). The four possible combinations of these components are each assessed twice, giving a total of eight questions.

The foils for each item consist of ten occupational titles drawn from among the ninety occupations ranked by the National Opinion Research Center's study of the prestige

³ Albert Reiss, Occupations and Social Status, (New York: Free Press of Glencoe, Inc., 1961).

✓ of occupations.⁴ Each occupation is presented as a possible response only once. Alternative responses span the entire range of occupational prestige, and are scored from zero to nine. Operationally, an item score of nine indicates that the respondent has chosen an occupation from among the eight highest prestige occupations on the National Opinion Research Center's scale. The possible total occupational aspiration scores range from zero to seventy-two.

The occupational aspiration scale has construct validity only. Miller and Haller report the test - re-test reliability to be .77 and the split - half reliability to be .80.⁵

Vocational Values Inventory

The Vocational Values Inventory is a research instrument developed to explore the occupational values which motivate people. The inventory contains eighty-four items designed to measure the following values.⁶

⁴ National Opinion Research Center, "Jobs and Occupation: A Popular Evaluation," Opinion News, IX (1947), pp. 3-13.

⁵ Archibald Haller and Irwin Miller, The Occupational Aspiration Scale: Theory, Structure and Correlates, (East Lansing: Michigan State University, Agricultural Experimental Station, Technical Bulletin 288, 1963), pp. 73-77.

⁶ Buford Stefflre, "Tentative Manual for Vocational Values Inventory" (East Lansing: College of Education, Michigan State University, 1958), pp. 2-3. (mimeographed.)

<u>Values</u>	<u>Description of Value</u>
1. Altruism	The value of altruism is important to those who see work primarily as a means of helping other people.
2. Control	Those who select the value of control get vocational satisfaction out of running things and being in charge of situations. They like to be in the position of decision maker.
3. Job freedom	People who select job freedom as being an important value like to be free to decide what they do and how they do it.
4. Money	People who select the value of money are interested in material satisfactions and the psychological gratifications brought by wealth.
5. Prestige	People who select the value of prestige are concerned about what others think of them and their work.
6. Security	People who select the value of security are concerned with keeping a continuous job.
7. Self-realization	Those who select self-realization as a work value want to do what they consider creative work. They want work to be an outlet for their interests and aptitudes..

The Vocational Values Inventory is an instrument of the forced choice type and as an individual's score increases on one value it must decrease on another.

Limited norms are available for the Vocational Values Inventory for the following groups: (1) college freshmen and sophomores, (2) high school seniors, and (3) graduate students in education.⁷

Validity studies on the Vocational Values Inventory have resulted in findings that are generally in the direction that would be expected from theory. For example, counselors were found to be significantly higher than administrators in altruism and self-realization and lower in control and money.⁸

The reliability of the seven sub-tests ranges from .69 to .91 using Hoyt's technique and from .43 to .67 using a test--retest technique with a two year intervening period.⁹ A copy of the Vocational Values Inventory is included in Appendix A.

Social Participation Scale

The Social Participation Scale used in this study was a modification of a similar scale developed by F. Stuart Chapin at the University of Minnesota.¹⁰

⁷ Ibid., P. 3.

⁸ Ibid., P. 8.

⁹ Ibid., P. 4.

¹⁰ Delbert Miller, Handbook of Research Design and Social Measurement (New York: David McKay Company, Inc., 1964), pp. 208-212.

Subjects were asked to list the name of the clubs or organizations to which they belonged. They were also asked to indicate if the clubs or organizations were of the in-school or out-of-school type. Furthermore, they were to indicate if they were currently a member, if they attended meetings, if they were a member of a committee and if they held an office.

Sub-scores were developed for both in-school and out-of-school social participation. Thus, the instrument yields three scores: (1) in-school social participation, (2) out-of-school social participation, and (3) total social participation.

Indices of validity and reliability are not available. A copy of the scale is included in Appendix A..

School Achievement

The measure of school achievement consisted of students grade point average in required subjects for the eighth and ninth grade. Grades in elective subjects were not used because of the influence of interest as a motivator. Letter grades were converted to a numeric score.

Scoring Procedures

Standard Measures

The Kuder Preference Record and The Differential Aptitude Tests were scored according to the makers directions. The raw score for each area measured was used for description and analysis.

Special Measures

Vocational Maturity Instrument

The primary purpose of the Vocational Maturity Instrument is to measure the verbal and instrumental behaviors postulated by Super as being indicative of the vocational developmental task of crystallizing an occupational preference. Super posited eleven behavioral attributes and attitudes as a result of his theorizing and research. According to Super, no hierarchal arrangement of the eleven vocational behaviors could be hypothesized at the time of his writing in 1963.

The researcher assumed all vocational behaviors to be of equal importance and assigned each a potential score of forty points. Eight of the eleven vocational behaviors posited by Super were researched in this study. Two of the three not researched were found by Super to be invalid at the ninth grade level. The quantification of the third is a study in itself. The invalid behaviors at age fourteen are "consistency of preference" and "wisdom of the vocational preference." The third vocational behavior omitted was "differentiation of interests and values."

The eight vocational behaviors measured are:

1. awareness of the need to crystallize a general occupational preference.

2. use of resources in gathering information about self and owrk.
3. awareness of factors to consider in formulating a vocational preference.
4. awareness of contingencies which may affect vocational goals.
5. awareness of present-future relationships.
6. formulation of a generalized occupational preference.
7. possession of information concerning the preferred occupation.
8. planning for the preferred occupation.

The allocation of forty points to each of the eight vocational behaviors made it possible for a person to score a maximum of 320 points on vocational maturity. The scoring of each of eight vocational behaviors is described in the following paragraphs.

The vocational behavior, "awareness of the need to crystallize an occupational preference," was assumed to have both verbal and instrumental behavioral components. The verbal aspect may be illustrated by a discussion, on the part of individuals, of the eventual need to make a career choice. Instrumental behavior may be illustrated by the act of seeking a counselor for the expressed purpose of getting occupational information.

The researcher assumed that a combination of verbal and instrumental behaviors would be more reliable than either singular behavior as indicators of the

"awareness of the need to crystallize a vocational preference." The second assumption relative to this global behavior is that high school courses are ultimately related to a vocational preference. Thus, the instrumental behavior measured was seeking advice or information about choosing high school courses. Furthermore, sources of advice and information were elicited on the Vocational Maturity Instrument.

The verbal aspect of "awareness of the need to crystallize an occupational preference" was scored by giving twenty points if the respondent checked "yes" to the question, "Have you asked for information or advice about choosing your high school courses?" (11) and zero if he checked "no."¹¹ The instrumental behavioral component was quantified by scoring the number of information sources utilized and the amount of influence each source had on the respondent's choice of high school courses (12-24). The scoring was as follows:

at least <u>five</u> sources checked, <u>one</u> of great influence-20 pts.									
"	"	"	"	"	<u>none</u>	"	"	"	--18 "
"	"	<u>four</u>	"	"	<u>one</u>	"	"	"	--16 "
"	"	"	"	"	<u>none</u>	"	"	"	--14 "
"	"	<u>three</u>	"	"	<u>one</u>	"	"	"	--12 "
"	"	"	"	"	<u>none</u>	"	"	"	--10 "

¹¹NOTE: numbers in parentheses refer to question numbers on the Vocational Maturity Instrument. A copy of the Vocational Maturity Instrument may be found in Appendix A.

at least <u>two</u> sources checked, <u>one</u> of great influence-8 pts.							
"	"	"	"	"	<u>none</u>	"	" --6 "
"	"	<u>one</u>	"	"	<u>one</u>	"	" --4 "
"	"	"	"	"	<u>none</u>	"	" --2 "
no sources checked							--0 "

The differential in the scoring for a source of information having "great influence" on the respondent was assumed to be indicative of identification with a significant other or source of information. The act of identification is deemed desirable in the process of becoming "aware of the need to crystallize an occupational preference."

Thus, twenty points were allocated to verbal and twenty to instrumental behavior. A perfect score on the behavior, "awareness of the need to crystallize an occupational preference," is forty.

The behavior, "use of resources in gathering information," is similar to the instrumental behavioral component of "awareness of the need to crystallize a vocational preference" in that the former was also measured as an information seeking behavior. The information sought by the individual related to an eventual career preference.

A respondent answering "yes" to the question, "Have you asked for advice or looked for information

about what you should do after high school?" (25) was given ten points. A "no" was scored as zero.

The subjects were asked to check a list of possible sources of advice and information about future careers and the amount of influence each source had on them (26-38). The scoring involved giving two points for each source used to a maximum of twenty-six. Two additional points were given for each source having a "great influence" on the respondent up to a maximum of four points.

The measurement and scoring for the behavior, "awareness of factors to consider in formulating a vocational preference" was straight-forward. Subjects were asked to check, "I am aware of the ways this item may control jobs," or "I am not aware of the way this item may control jobs," for a list of factors. The list included such factors as ability to do school work, interests, marriages, special talents and education required (39-50).

The list of factors and weights allocated for scoring purposes was as follows:

<u>Factor</u>	<u>Score</u> (if aware column checked)
Your ability to do school work	6
Your interests	6
Marriage	2
Your special talents	6

<u>Factor</u>	<u>Score</u>
Jobs you can get	2
Education necessary	4
Special training necessary	4
Pay received for your work	2
If the job required moving	2
Security of the job	2
Difficulty getting into some jobs	2
Your parents approval	<u>2</u>
Total possible score *	40

The behavior, "awareness of contingencies which may affect vocational goals," was handled as a part of the above question on "awareness of factors to consider in formulating an occupational preference." Possible contingencies were a part of the list of factors to consider. The two behaviors were sampled with the same list because Super found in his Career Pattern Study ". . . that awareness of need, of factors to consider, and of contingencies that may arise, tend to go together."¹² Contingencies included and the weights allocated were as follows:

<u>Contingencies</u>	<u>Score</u> (if aware column checked)
(50) Your parents approval	10

¹²Donald Super, "Vocational Development in Adolescence and Early Adulthood: Tasks and Behaviors," Career Development: Self-Concept Theory (New York: College Entrance Examination Board, 1965), P. 85.

<u>Contingencies</u>	<u>Score</u>
(51) Military service (boys only) or	10
(41) Marriage (girls only)	
(52) Financial help for educational plans	10
(53) High school courses needed	<u>10</u>
Total possible score =	40

"Awareness of present-future relationships" is a vocational behavior that involves relating current pre-work activities to future vocational activities.¹³ The related verbal behaviors are illustrated by expressing the amount of schooling required for a specific field or occupation.

The measurement of the vocational behavior consisted of determining the respondents awareness of present and future education to future work. Relevant questions included the following:

(63) "If a person wanted to do the things I am planning to do, he or she needs to complete _____
_____. "
(amount of schooling or training)

(65) "The job I am now planning for is _____
_____."

Card 2

(1) "Is the selection of specific high school courses necessary?" Yes____, No____, Uncertain____

¹³Ibid., P. 86.

"The amount of education required is":

- (3) High school graduation Yes___, No___, Uncertain___
(4) Vocational or technical school Yes___, No___, Uncertain___
(5) Some college Yes___, No___, Uncertain___
(6) A college degree Yes___, No___, Uncertain___

The question on education (63) was related to the one on planned job (65). The accuracy of the present-future relationship was scored by relating plans (65) and amount of schooling required (63) using the scale following:

Always true	16
Generally true	12
Sometimes true	8
Seldom true	4
Never true	0

The question on the necessity of selecting specific high school courses (Card 2, Number 1) was also related to planned job (65). The accuracy of the "yes" or "no" response was scored using the scale following:

Always true	12
Generally true	8
Seldom true	4
Never true or Uncertain	0

The check list questions to measure the amount and kind of education required (3-6) were used as a

further check on accuracy of education required for specific jobs by relating them to the open ended questions on amount of schooling (63) and planned or preferred job (65). The pattern of check mark responses on "yes," "no" and "uncertain" was quantified with the scale following:

Accurate	12
Somewhat accurate	6
Inaccurate	0

The reader is cautioned that the quantifications of responses on this behavior required that some judgments be made by the researcher. A perfect score on "awareness of present-future relationships" is forty points.

"Formulation of a generalized occupational preference" is the result of crystallization of an occupational preference. This may appear to be a specific job preference, but in fact is a more general occupational-type preference where the job title is a symbol for a number of related activities for which a liking is expressed.¹⁴ The behavioral components of "formulation of a generalized occupational preference" are largely verbal but may be instrumental. The expression of a preference is verbal behavior. The instrumental behavior, "implementation of an occupational preference," rarely occurs during the high

¹⁴Ibid., P. 86-87.

school years. However, instrumental behavior such as becoming a member of the Future Farmers of America may be involved. The approach used in this study is to measure the verbal component of this vocational behavior.

The measurement of the vocational behavior of "formulation of a generalized occupational preference" consisted of two questions. The first question was: "The occupations which I have thought about going into are":

- (54) _____
- (55) _____
- (56) _____
- (57) _____

The second question was:

(60) "In regard to my preference for an occupation:

- _____ I am sure my mind is made up,
- _____ I think my mind is made up,
- _____ I have not made up my mind."

The above two questions were quantified as described below to yield a score for the "formulation of a generalized occupational preference." The first element of consideration was the number of potential occupations thought about (54-57).

<u>Number of Occupations Thought About</u>	<u>Score</u>
0	0
1-3	2
4	4

The second aspect quantified was the relationship between or among the possible occupations thought about (54-57). Two possible occupational relatedness classifications were identified: (1) type or classification of work and (2) prestige. The degree of occupational relationship within the two classifications was quantified using the scale following:

Highly related	20
Somewhat related	10
Little or no relationship	0

The third aspect of the vocational behavior of "formulation of a generalized occupational preference" was the inclusion in or the relatedness of the planned or preferred job (65) to the list of occupations the individual had thought about going into (54-57). If the planned occupation was not included in or related to the list, no score was given. Where the planned occupation was included in or related to the list, a score of four was given.

The final aspect involved quantifying the expressed certainty (60) of the occupational preference (65).

<u>Degree of Certainty</u>	<u>Score</u>
I think my mind is made up	12
I have not made up my mind	6
I am sure my mind is made up	0

The response, "I am sure my mind is made up," was scored as zero because it was deemed as premature closure in this area of development and a mark of immaturity.

Thus, four aspects of the vocational behavior of "formulating a generalized occupational preference" were quantified from two questions.

The scoring involved: (1) the number of occupations the respondent had thought about going into, (2) whether or not the preferred occupation was included in or related to this list, (3) the degree of relationship between or among the possible occupations listed, and (4) the certainty of the preferred occupation.

The respondents who expressed an occupational preference (65) also responded to a series of items designed to measure "possession of information concerning the preferred occupation" and "planning for the preferred occupation." Both of these vocational behaviors are manifested as verbal behavior.

The rationale for jointly measuring "possession of information concerning the preferred occupation" and "planning for the preferred occupation" is that realistic planning could not occur without information about the preferred occupation. Unless the individual knows that his preferred occupation of teaching requires a college degree, it would be impossible for him to plan his occupational future.

The students were asked to respond to a series of questions referring to specific aspects of their preferred job. Included were: (1) requirements for getting the job, (2) conditions under which the work is done, (3) what the worker does, and (4) opportunities in this job. The questions on each aspect of the preferred job were listed down the center of a page. Columns for "yes," "no" and "uncertain" were provided to the left and to the right of the questions (See Appendix A). Students responded on the left side to the question, "Considering the job you are planning for, which of the following aspects do you know about?" When the students had finished checking the left columns, they were instructed to respond on the right side to the question, "Of those that you know about, which ones have or are you now planning for?"

The scoring for the "possession of information concerning the preferred job" involved applying a scale to each of the following aspects of the preferred job:

1. Some requirements for getting the job (1-2)
2. Amount of education required (3-6)
3. Conditions of work (7-13)
4. What the worker does (14-18)
5. Opportunities in this job (19-20)

The scale was as follows:

Information accurate	8
Information generally accurate	6
Information somewhat accurate	4
Information of questionable accuracy	2
No information or Inaccurate	0

The same procedure was used to score the responses related to the vocational behavior, "planning for the preferred occupation." The scale below was applied to each of the following aspects of the preferred job:

1. Some requirements for getting the job (21-22)
2. Amount of education required (23-26)
3. What the worker does (27-31)
4. Opportunities in this job (32-33)

Plan complete	10
Partial plan	6
No plan	0

Each vocational behavior, "possession of information concerning the preferred occupation" and "planning for the preferred occupation," had a potential score of forty points. The scoring of these two behaviors required that judgments be made by the researcher. The researcher scored all instruments to provide the greatest possible scoring reliability.

Socio-Economic Status

Specific questions were included in the Vocational Maturity Instrument to measure variables other than the eight vocational behaviors described above. Two additional variables were the socio-economic status of the family (4) and of the preferred job (65). Socio-economic status was measured and quantified in both cases by converting occupation to socio-economic status using Reiss' Index.¹⁵ The index is founded on a study of a large number of occupations, each assigned an index number varying from a theoretical zero to one hundred.

Place of Residence

Residence was measured and quantified by the respondent checking a five item categorization of possible places to live ranging from a farm to a city over 10,000 (10).

Age and Sex

These two variables were a part of the Vocational Maturity Instrument (1-2). Respondents simply indicated their sex and age.

Occupational Aspiration Scale

The OAS is an eight item, multiple choice instrument. Each item has ten foils consisting of occupational

¹⁵Reiss, Op. Cit.

titles representing the prestige level of occupations. The ten foils have the same prestige level and score across the eight items. The scoring is as follows:

<u>Foil Number</u>	<u>Score</u>
1	7
2	4
3	8
4	2
5	9
6	0
7	6
8	3
9	5
10	1

The total of the odd numbered items (1, 3, 5, and 7) yields the expectation score or the occupational prestige level the respondent expects to actually achieve. The total of the even numbered items (2, 4, 6 and 8) yields the aspiration score or the occupational prestige level the individual would like to achieve. The total of all items gives the total occupational aspiration score.

The instrument will also yield scores for both expectation and aspiration at two life periods.

These life periods are: (1) when schooling is over and (2) at thirty years of age. Scoring for all four dimensions is as follows:

<u>Level and Life Period</u>	<u>Scores on Item Numbers</u>
Expectation -- Schooling Over	1 plus 3
Aspiration -- Schooling Over	2 plus 4
Expectation -- 30 years of age	5 plus 6
Aspiration -- 30 years of age	7 plus 8

Vocational Values Inventory

This inventory is a research and counseling instrument measuring seven values each described in the section on Measures Used. The inventory is the forced choice type that yields a single maximum score. The score variation occurs on the sub-scores for each value measured.

The inventory contains eighty-four pairs of items. The respondent must choose between each pair. The score for a single value is the number of times that value was chosen over the other values paired with it.

The actual procedure involved respondents marking their value choice on an answer sheet (See Appendix A). The scoring was accomplished by placing a key for each value over the answer sheet and counting the number of response marks visible. Seven keys were used to score each answer sheet.

Social Participation Scale

This scale was designed to furnish an index of the amount and kind of participation in organized social activity. The two variables measured were in-school and out-of-school participation. The in-school and out-of-school designation reflects the perceived location and sponsorship of the group or organization.

The students were asked to indicate:

1. the groups or organizations affiliated with.
2. whether the group or organization was of the in-school or out-of-school type.
3. if they held a current membership.
4. their attendance at meetings.
5. committee membership.
6. offices held.

The quantification of the responses was accomplished by assigning scores to levels of participation and accounting for the scores by type of group or organization. The quantities allocated were as follows:

<u>Participation Level</u>	<u>Score</u>
Current membership	1
Meeting attendance	2
Committee membership	3
Office held	4

School Achievement

Each student's grades in required courses for the eighth and ninth grade school years were taken from the school records. A grade point average was calculated for each student by assigning: (1) 4 to A, (2) 3 to B, (3) 2 to C, (4) 1 to D and (5) 0 to E.

Research Procedures

Type of Design

The design of the study reported herein may be called a descriptive-correlation design with two replications. The research may also be described as theory testing. The research involved the measurement and quantification of the vocational behaviors posited by Super as being indicative of the vocational developmental task of crystallizing an occupational preference. The instrumentation was of two types: (1) instruments developed or standardized by previous researchers and (2) instruments developed by the author of this research specifically designed to measure vocational maturity and related variables.

The study involved three steps: (1) measurement of descriptive variables found or thought to be related to vocational maturity, (2) measurement and quantification of eight vocational behaviors to determine vocational

maturity, and (3) finding significant relationships among the descriptive variables and vocational maturity including the component vocational behaviors.

Collection of Data

The number of variables and instruments involved in the study necessitated spreading the data collection over a period of time. All instruments were administered by classroom teachers or school counselors in the three schools involved. The Vocational Maturity Instrument and the Occupational Aspiration Scale were administered by the teachers and counselors in all schools during the same week shortly after the opening of school in the fall of 1966. The instruments to collect descriptive and correlational data were administered to the subjects during the following six months. However, with few exceptions, data were collected at approximately the same time in all schools.

Error Reduction

Four techniques were utilized in this study to reduce errors.

1. Instruments were administered across all three populations at approximately the same time.
2. Teachers and counselors were given instructions by the researcher or test maker for the administration of all instruments.

3. Two replications of the study were made.
4. The researcher scored all instruments where interpretation was required.

Statistical Procedures

All data collected were quantified and punched on machine scored cards. All calculations were performed by a Control Data Corporation 1604 Computer. Descriptive statistics included mean, standard deviation, coefficient of variation and Pearson Product Moment Correlation.

Summary

This section of the report sets forth the methods and procedures employed in the study. The chapter contains five sub-sections. These are: (1) introduction, (2) the groups studied, (3) measures used, (4) scoring procedures and (5) research procedures.

The Vocational Maturity Instrument was developed by the author to measure the attitudes and behaviors posited by Super to be indicative of the vocational developmental task of crystallizing an occupational preference. Other selected correlates of vocational maturity were included in the study and measured by a number of standard and special instruments.

These data were punched on machine scored cards and descriptive statistics were calculated by a Control Data Corporation 1604 Computer. Statistics used were mean, standard deviation, coefficient of variation and Pearson Product Moment Correlation.

The following chapter is a report of the findings of the study. The chapter is organized and the data is reported by the objectives of the study.

CHAPTER IV

REPORT OF FINDINGS

Introduction

The purpose of this chapter is to report the results of the study. The chapter is organized into three sections each representing a major research objective. The final section is a summary of the findings.

Objective One

The first objective of the study is to describe three populations, two of which were involved in a larger vocational-technical education project. The descriptive variables selected were those found to be related to vocational maturity in Super's Career Pattern Study and other untested variables identified by the author and thought to be related to vocational maturity.

The statistics used in this section of the report are descriptive in nature and include mean, standard deviation and coefficient of variation. Most readers are familiar with both mean and standard deviation as statistics often used in reporting research. The coefficient

of variation is not as commonly used as the other two. Mathematically, the coefficient of variation is equal to the standard deviation divided by the mean. This expression becomes one of relative variability.

When comparing means and standard deviations, the larger the means, the larger the standard deviations, are likely to be. However, when the standard deviation is divided by the mean, the resulting coefficient is an expression of relative variability.

Scholastic Aptitude

Scholastic aptitude was measured by combining the Verbal Reasoning and Numerical Ability test scores from The Differential Aptitude Tests. The combination of these two scores as a measure of school learning ability generally correlates with intelligence tests at about .8.

The mean scholastic aptitude of the three freshmen classes is shown in TABLE 4. According to the measured results, the boys and girls at the Crystal Falls School were more able students than those at the L'Anse and Onaway Schools. Although it would appear from the standard deviations that the students in the freshmen class at Crystal Falls were more variable than those at the other two schools, the coefficient of variation reveals the

opposite. That is, the Crystal Falls students were more homogeneous with respect to school ability than the students in either L'Anse or Onaway.

TABLE 4. Descriptive measures of scholastic aptitude of ninth grade classes at three Michigan high schools.

Scholastic Aptitude	Schools		
	L'Anse N=88	Crystal Falls N=76	Onaway N=71
Mean	40.1	49.6	39.8
Standard Deviation	13.9	15.1	13.4
Coefficient of Variation	.34	.30	.34

School Achievement

The students grade point average was calculated from the letter grades given in required subjects for eighth and ninth grade years. The letter grades were converted to numeric scores for purposes of analysis. The mean grade point average of students at the three schools is displayed in TABLE 5.

An analysis of TABLE 5 reveals that the students at Onaway generally received lower grades than those at L'Anse and Crystal Falls. Even though the average grade

was lower at the Onaway School, the variation in grades was larger than for the other two schools.

TABLE 5. Descriptive measures of school achievement in required subjects for eighth and ninth grade years for students in three Michigan high schools.

Grade Point Measures	Schools								
	L'Anse N=90			Crystal Falls N=76			Onaway N=75		
	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var
Grade ^a Point Measures	2.3	.9	.38	2.3	.8	.33	1.9	.9	.49

^aA=4, B=3, C=2, D=1, and E=0

Although the students at L'Anse have lower scholastic ability, according to test results, than those at Crystal Falls (TABLE 4), they averaged comparable grades.

A Pearson Product Moment Correlation between scholastic aptitude and grade point average for the students in the three schools was as follows:

1. Crystal Falls = .85
2. Onaway = .80
3. L'Anse = .77

These correlations indicate a closer relationship between ability and grades at Crystal Falls followed by Onaway and L'Anse.

Occupational Aspiration

Occupational Aspiration was measured at two levels and at two life periods. The higher the score on occupational expectation or occupational aspiration, the higher the occupational prestige anticipated or desired by the respondent. The two life periods are: (1) when schooling is over and (2) at thirty years of age.

The addition of expectation and aspiration scores at both life periods yields total occupational aspiration scores as shown in TABLE 6.

TABLE 6. Descriptive measures of occupational aspiration for ninth grade classes in three Michigan high schools.

Occupational Aspiration	Schools		
	L'Anse N=91	Crystal Falls N=76	Onaway N=75
Mean	35.1	42.4	35.2
Standard Deviation	12.7	10.2	10.3
Coefficient of Variation	.36	.24	.31

Relatively speaking, the students at the Crystal Falls School anticipated and desired more occupational prestige than the students at L'Anse and

Onaway. The Crystal Falls students were more homogeneous on scores for occupational aspiration than the students in the other two schools.

The mean occupational aspiration and expectation scores are displayed by sex in TABLE 7.

TABLE 7. Mean scores of occupational expectation and aspiration by sex for the ninth grade classes at three Michigan high schools.

Occupational Expectation & Aspiration	Schools					
	L'Anse		Crystal Falls		Onaway	
	Mean		Mean		Mean	
	Boys	Girls	Boys	Girls	Boys	Girls
Aspiration	21.2	22.4	23.5	25.9	20.7	23.5
Expectation	16.0	13.9	18.7	16.9	11.1	15.4
Difference	5.2	8.5	4.8	9.0	9.6	8.1

Included in TABLE 7 are differences in mean scores between expectation and aspiration for boys and girls. The mean scores for occupational aspiration and expectation include both life periods--schooling over and thirty years of age.

The larger the difference between expectation and aspiration mean scores, the more occupationally unrealistic the individuals. A student may aspire to a prestigious

occupation such as lawyer but expect to become a truck driver. In this instance, the person would be considered unrealistic and a derived score would reveal a rather large numeric difference between his occupational expectations and aspirations.

Girls tended to have larger difference scores than boys except in the Onaway School where boys had a larger difference between occupational expectation and aspiration. The boys at Onaway High School had the lowest occupational aspiration scores of the boys and girls studied. They also had the largest difference score between occupational expectation and aspiration. In short, these boys wanted the lowest prestige occupations of the groups studied, expected to get occupations at the lowest prestige levels, and were the most occupationally unrealistic.

TABLE 8 displays mean scores for occupational aspiration and expectation and difference scores for the life period immediately following school.

The reader will note that the girls studied generally aspired to higher occupational prestige than boys and they expected to achieve a higher prestige level. The Onaway boys expected to enter relatively low prestige occupations following school. Although the difference score for the life period following school for Onaway boys was not deviant from other scores, the reader will recall

from TABLE 7 that on difference between occupational expectation and aspiration, these boys had the highest score. This indicates they had a large difference score for the life period at thirty years of age.

TABLE 8. Mean scores of occupational expectation and aspiration when schooling is over by sex for the ninth grade classes at three Michigan high schools.

Occupational Expectation and Aspiration When Schooling is Over	Schools					
	L'Anse		Crystal Falls		Onaway	
	Mean		Mean		Mean	
	Boys	Girls	Boys	Girls	Boys	Girls
Aspiration	9.4	10.4	10.8	12.7	8.3	11.0
Expectation	6.2	6.6	8.3	7.4	4.0	7.2
Difference	3.2	3.8	2.5	5.3	4.2	4.2

Social Participation

Social participation as used in this study means participation in clubs and organized activity. This variable has two parts: (1) in-school social participation and (2) out-of-school social participation. They represent participation in organized activities within and outside the school.

An examination of TABLE 9 reveals that the freshmen students at L'Anse and Crystal Falls scored higher on

social participation than the students at Onaway.

Crystal Falls students scored highest on in-school clubs and activities. The students at L'Anse scored highest on

TABLE 9. Descriptive measures of social participation scores for ninth grade students in three Michigan high schools.

Social Participation	Schools								
	L'Anse N=88			Crystal Falls N=76			Onaway N=75		
	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var
In-School Social Participation	3.4	5.4	1.59	5.4	7.7	1.42	3.1	3.4	1.10
Out-of-School Social Participation	7.3	4.8	.66	5.4	5.9	1.11	3.7	3.7	1.00
Total Social Participation	10.6	8.1	.76	10.8	11.5	1.06	6.8	5.3	.78

out-of-school activities. The students at Crystal Falls and Onaway had a balance between in-school and out-of-school participation scores while the students at L'Anse scored higher on out-of-school than in-school social activities.

Socio-Economic Status of Fathers

The score for socio-economic status was based on the occupation of fathers of students. Fathers' occupation was converted utilizing an index of socio-economic status of occupations developed by Albert Reiss. This index provides a numeric score for several hundred specific occupations. The index has a range from zero to one hundred. The mean index of socio-economic status for the fathers of students studied is shown in TABLE 10.

TABLE 10. Descriptive measures of an index of socio-economic status of fathers of ninth grade students in three Michigan high schools.

Socio-Economic Status of Fathers	Schools								
	L'Anse N=90			Crystal Falls N=75			Onaway N=72		
	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var
Index of Socio Economic Status	30.9	20.8	.67	31.4	22.0	.70	28.3	19.3	.68

Based on the index, the fathers of students at the three schools were about one-third the way up the socio-economic scale. Their level of socio-economic attainment was about equal.

Socio-Economic Status of Preferred Job

The Reiss Index was used to convert the occupational preference expressed by students to a numeric score. The students preferred jobs that have a socio-economic index considerably higher than that achieved by their fathers (TABLE 11). Students at the Crystal Falls School preferred jobs with the highest socio-economic index followed by L'Anse and Onaway. A larger coefficient of variation indicates the Onaway students were more diverse in their job preferences with reference to socio-economic status than the students at the other two schools.

TABLE 11. Descriptive measures of an index of socio-economic status of preferred jobs for ninth grade classes in three Michigan high schools.

Socio-Economic Status of Preferred Job	Schools		
	L'Anse N=88	Crystal Falls N=66	Onaway N=60
Mean	54.8	60.1	45.3
Standard Deviation	22.1	25.1	25.1
Coefficient of Variation	.40	.42	.56

Interests

The interests of the subjects studied were assessed with the Kuder Preference Record, Vocational Form C. The instrument provides a measure of ten interest areas as shown in TABLE 12.

An inspection of the raw mean scores reveals a likeness in interests and interest patterns among the three populations. This generality regarding interests has two exceptions. First, the Onaway pupils scored higher in the outdoor area than the students from L'Anse and Crystal Falls. Even though the Onaway class had a larger mean score than the other two schools, it was more homogeneous on the outdoor dimension. Secondly, the Onaway class had the lowest coefficient of variation on six of the ten interest areas and was next to the lowest on two others.

Aptitudes

The Differential Aptitude Tests were used as measures of aptitudes. The Differential Aptitude Tests consist of nine separate tests. The name of each test is listed in Table 13.

TABLE 12. Descriptive measures of Kuder vocational scores for ninth grade classes in three Michigan high schools.

Kuder Vocational Areas	Schools								
	L'Anse			Crystal Falls			Onaway		
	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var
Outdoor	37.5	13.4	.36	38.4	13.4	.35	43.2	14.5	.24
Mechanical	33.5	14.8	.44	32.1	15.3	.47	34.7	13.8	.39
Computational	23.1	7.1	.31	24.2	7.6	.31	23.5	7.1	.30
Scientific	36.7	10.8	.29	39.4	12.1	.31	37.9	11.0	.29
Persuasive	39.7	8.4	.21	38.6	9.7	.25	39.9	8.0	.29
Artistic	27.7	9.7	.35	30.0	9.4	.31	28.2	8.0	.28
Literary	18.9	6.6	.35	17.2	6.9	.40	18.3	6.6	.36
Musical	12.5	6.9	.55	13.8	7.0	.51	13.0	7.6	.58
Social Science	43.7	13.4	.31	42.0	14.2	.34	41.2	10.7	.26
Clerical	52.6	13.5	.26	55.7	12.4	.22	51.2	11.5	.23

TABLE 13. Descriptive measures of The Differential Aptitude Test scores for ninth grade students in three Michigan high schools.

D. A. T.	Schools								
	L'Anse			Crystal Falls			Onaway		
	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var
Verbal Reasoning	21.6	8.3	.38	27.4	9.7	.35	19.7	7.9	.40
Numerical Ability	18.9	7.1	.38	22.2	7.1	.32	20.1	6.7	.33
Scholastic Aptitude	40.4	13.9	.34	49.6	15.1	.30	39.8	13.4	.34
Abstract Reasoning	28.0	9.1	.33	32.9	8.9	.27	28.3	11.4	.40
Clerical Speed and Accuracy	41.7	7.6	.18	42.8	8.1	.19	39.9	8.2	.21
Mechanical Reasoning	42.1	8.4	.20	43.7	8.2	.19	42.3	8.9	.21
Space Relations	28.0	10.0	.36	31.0	11.6	.38	24.9	10.5	.42
Spelling-Language	62.8	14.9	.24	75.6	15.1	.20	60.4	17.6	.29
Grammar-Language	25.2	7.7	.30	30.9	9.5	.31	21.1	8.3	.39

A visual analysis of TABLE 13 reveals some interesting descriptive information. The ninth grade class at Crystal Falls scored higher on all tests than the ninth grade classes at L'Anse and Onaway. The Crystal Falls class not only scored higher, it was also more homogeneous on seven of the nine tests as evidenced by a lower coefficient of variation.

The reader will recall that the Crystal Falls class had a higher scholastic aptitude test score than the freshmen classes at the other two schools. The scholastic aptitude score was derived by adding Verbal Reasoning and Numerical Ability test scores. An examination of these two scores in TABLE 13 reveals that the higher scholastic aptitude test scores for the Crystal Falls class was largely due to a higher score on verbal reasoning. The higher verbal score of the Crystal Falls freshmen is further validated by the higher mean score on spelling--language and grammar--language tests.

Values

The Vocational Values Inventory was used to measure seven vocational values. Each of these values and the measured score is listed in TABLE 14.

TABLE 14. Descriptive measures of vocational value scores for ninth grade students in three Michigan high schools.

Vocational Values	Schools								
	L'Anse			Crystal Falls			Onaway		
	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var	Mean	S.D.	Co. Var
Altruism	13.0	5.5	.42	12.1	5.4	.44	10.4	5.9	.57
Control	9.2	3.9	.42	7.9	3.5	.44	8.5	3.7	.43
Job Freedom	10.6	4.4	.41	10.1	4.3	.42	11.5	5.2	.45
Money	10.8	4.1	.38	11.9	4.2	.36	12.2	4.5	.37
Prestige	9.6	3.5	.37	10.5	3.7	.36	10.1	4.0	.40
Security	13.3	3.6	.27	13.2	4.3	.33	14.9	4.1	.28
Self-Realization	17.2	3.7	.21	18.3	3.7	.20	16.3	3.9	.24

The Vocational Values Inventory is a forced choice type of instrument and as an individual's score increases on one value it must decrease on another. This type of instrument allows a comparison of scores within as well as between schools.

A visual inspection of TABLE 14 reveals that the students in all three schools scored highest on self-realization as a vocational value. The three classes were also in agreement on the value of security which ranked second highest in score. The scores indicate these young people were concerned with: (1) the opportunity to

express themselves in their work and (2) keeping a continuous job.

The pupils at the L'Anse and Crystal Falls Schools were in general agreement on the rank order of the other five values. They held altruism, third; money, fourth; prestige and job freedom, fifth and sixth; and control, seventh. The Onaway students held money as their third rank order value; job freedom, fourth; altruism, fifth; prestige, sixth; and control, seventh.

Using the coefficient of variation as an expression of homogeneity, a pattern emerges very much like the one discussed above for mean scores. That is, the scores in the three schools were most homogeneous on self-realization and security. There was also close agreement on the rank order of the coefficient of variation for the other five values. Prestige and money was third and fourth, job freedom was fifth at L'Anse and Crystal Falls but sixth at Onaway, control and altruism were sixth and seventh at L'Anse and Crystal Falls but fifth and seventh respectively at Onaway.

Objective Two

The second objective of this research is to assess the vocational maturity of the three ninth grade populations according to the vocational development theory of

Super. The statistics used for analysis in this section are the same as those used in the preceding section except the distribution of raw scores is used as an indication of the normalcy of the vocational behaviors studied.

Vocational Maturity

Vocational maturity, as defined in Chapter I, refers to the attained level of development with reference to work. It may be judged by the nature of the vocational developmental task with which a person is coping and by the vocational behaviors manifested in coping with this developmental task. The study is concerned with the vocational developmental task of crystallizing an occupational preference. More precisely, the concern is with certain vocational behaviors posited by Super to be indicative of the developmental task of crystallizing an occupational preference.

Vocational maturity is expressed as a score derived by adding scores for manifested vocational behaviors. The vocational maturity scores for the three schools are shown in TABLE 15.

According to the scored results, L'Anse students were the most vocationally mature, followed closely by Crystal Falls and with Onaway a low third. Students

TABLE 15. Descriptive measures of vocational maturity scores for ninth grade classes in three Michigan high schools.

Vocational Maturity	Schools		
	L'Anse N=91	Crystal Falls N=76	Onaway N=75
Mean	189.7	184.0	144.1
Standard Deviation	37.0	48.9	47.7
Coefficient of Variation	.20	.27	.33

at L'Anse and Crystal Falls were closer to crystallizing an occupational preference than the students at Onaway.

An examination of the coefficient of variation reveals that the L'Anse and Crystal Falls students were not only more vocationally mature but are also more homogeneous in this regard.

Vocational Behaviors

A vocational behavior was defined in Chapter I as work related stimuli and corresponding responses either covert or overt in nature. Eleven vocational behaviors were identified by Super as being indicative of the vocational developmental task of crystallizing an occupational preference. Eight of the eleven behaviors were described in Chapter II and are shown in TABLE 16.

TABLE 16. Descriptive measures of scores for eight behaviors related to the vocational developmental task of crystallizing an occupational preference for the ninth grade classes in three Michigan high schools.

Vocational Behaviors	Schools							
	L'Anse N=91				Crystal Falls N=76			
	Mean	S.D.	Co. Var.	Mean	S.D.	Co. Var.	Mean	S.D.
Awareness of the need to crystallize an occupational preference.	32.1	13.2	.41	26.2	16.0	.60	22.4	16.4
Use of resources in gathering information about self and future.	12.8	12.5	.96	18.7	9.3	.50	11.1	11.2
Awareness of factors to consider in formulating a vocational preference	33.0	5.7	.17	32.5	10.5	.32	26.0	9.6
Awareness of contingencies which may affect vocational goals.	30.6	10.3	.34	28.4	11.1	.39	20.7	11.1
Awareness of present-future relationships.	21.2	11.1	.53	18.9	13.1	.69	13.7	14.0
Formulation of a generalized occupational preference.	28.4	8.7	.31	27.9	9.2	.33	24.9	9.6
Possession of information concerning the preferred occupation.	16.0	7.4	.46	16.8	8.8	.52	15.1	9.8
Planning for the preferred occupation	14.9	8.4	.56	15.4	10.1	.66	10.4	9.5
Mean Vocational Maturity Score	189.7			184.0			144.1	

TABLE 16 reveals, upon analysis, that students in all three schools scored highest on the vocational behavior, "awareness of factors to consider in formulating the vocational preference." The low coefficient of variation score reveals that they were also most homogeneous on this behavior.

A further inspection of the mean scores reveals no other unanimous agreement in the rank order of mean behavior scores across the three populations. However, there are some clusters in terms of rank order. The behaviors: (1) "awareness of the need to crystallize an occupational preference," (2) "awareness of contingencies which may affect vocational goals" and (3) "formulation of a generalized occupational preference" were ranked second, third or fourth by the three schools. The behavior, "awareness of present-future relationships," was ranked fifth in two schools and sixth in one. The behavior, "possession of information concerning the preferred occupation," was ranked fifth, sixth or seventh in the three schools. The behavior, "use of resources in gathering information about self and future," was ranked sixth, seventh or eighth, and "planning for the preferred occupation," was ranked seventh in one school and eighth in the other two.

The rank order of the coefficients of variation, an expression of homogeneity, was agreed on by the respondents. Students were most homogeneous in scores on the vocational behaviors: (1) "awareness of factors to consider in formulating a vocational preference," (2) "formulation of a generalized occupational preference," and (3) "awareness of contingencies which may affect vocational goals." The rank order of coefficients of variation indicates further clustering but no unanimous agreement on the other five behaviors.

The eight vocational behaviors can be further analyzed by examining the frequency distribution of raw scores. The shape of the frequency polygons is indicative of the normalcy of the derived scores for the eight vocational behaviors. Unusually shaped distributions are due to: (1) inadequate measurement and quantification, (2) unusual distribution of the measured behaviors in the populations, or (3) measurement at a particular stage when the behavior had not developed sufficiently or was well developed.

The reader is cautioned that the intervals on the abscissa of the following frequency polygons are not all equal. The inequality is due to the maximum score of forty assigned each behavior and the way frequencies were counted by the computer. The computer counted only

the punches in a single card column and therefore two digit scores occupying two card columns could only be read from the print-out sheets in intervals of ten. The score of forty is shown in the following frequency polygon is not an interval score as are the other four but is a single maximum score for the behavior being described.

The raw score distributions are shown only for the L'Anse school in order to simplify description. Where the shape of the frequency polygon differs among or between schools, the differences are reported. The raw score distributions for the behaviors that differed from those at L'Anse may be found in Appendix B.

FIGURE 1 is a frequency polygon depicting the raw scores for the vocational behavior, "awareness of the need to crystallize an occupational preference." Nearly one-half (45) of the boys and girls at L'Anse High School attained the maximum score of forty on this vocational behavior. The high attainment of the maximum score indicates that the vocational behavior was relatively well developed or that measurement and quantification was inappropriate.

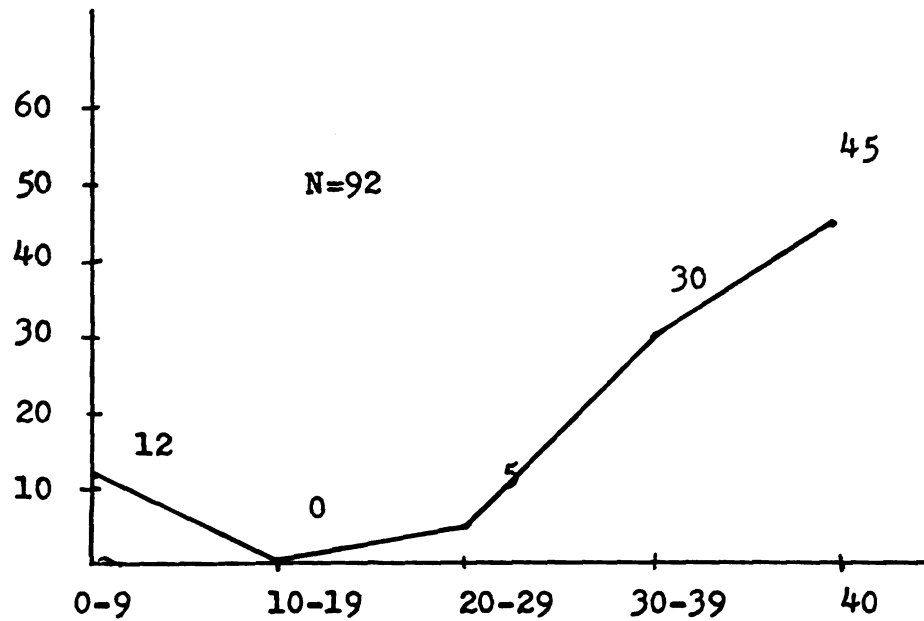


FIGURE 1. Distribution of raw scores: "awareness of the need to crystallize an occupational preference" (L'Anse).

An examination of FIGURE 2, showing the frequency polygon for the raw scores on the behavior, "use of resources in gathering information about self and future,"

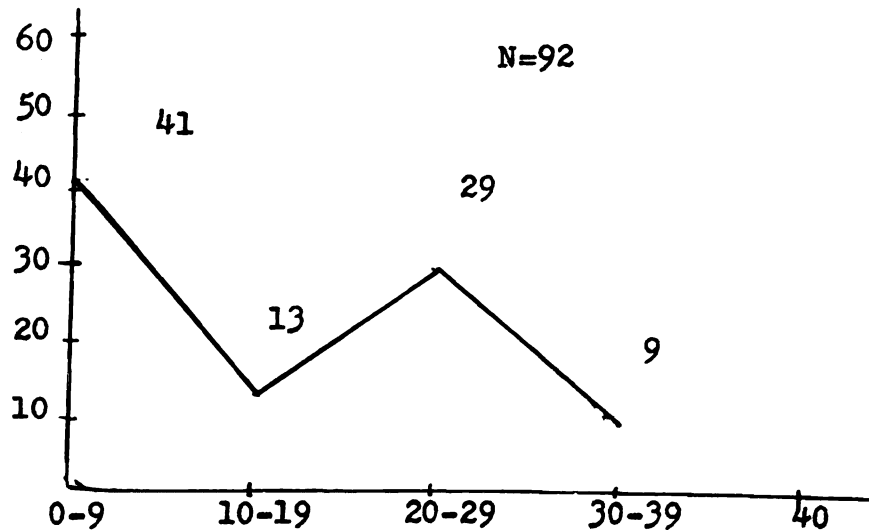


FIGURE 2. Distribution of raw scores: "use of resources in gathering information about self and future" (L'Anse).

indicates the opposite of that reported above. That is, either the vocational behavior was not well developed or instrumentation and quantification need improvement. Nearly one-half (41) of the ninety-two boys and girls at the L'Anse school scored less than ten on the behavior, "use of resources in gathering information about self and future." The Crystal Falls School was an exception where the raw score distribution on this behavior approached normal (See Appendix B).

The frequency polygon in FIGURE 3 shows the distribution of raw scores on the vocational behavior, "awareness of factors to consider in formulating an occupational preference." The distribution is somewhat

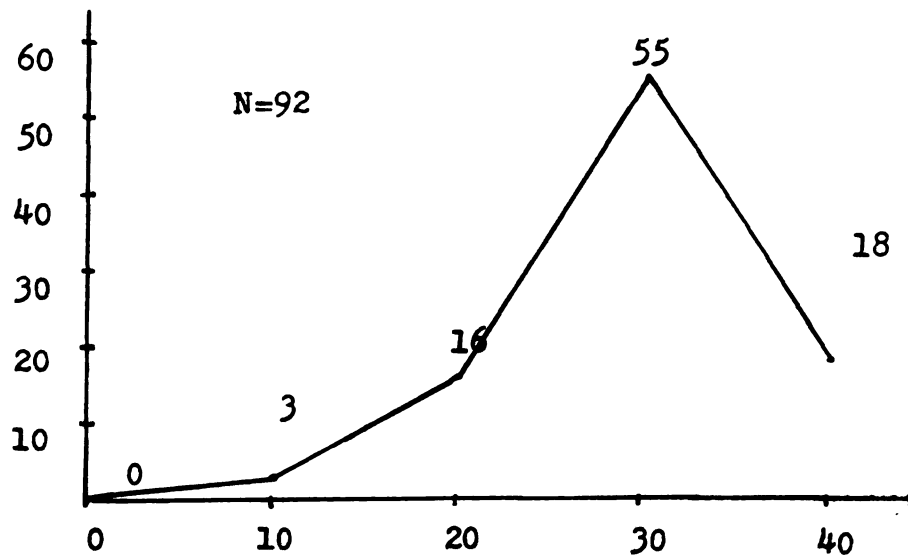


FIGURE 3. Distribution of raw scores: "awareness of factors to consider in formulating an occupational preference" (L'Anse).

asymmetrical being negatively skewed. Examination discloses that the negative skewedness is indicative of either a well developed vocational behavior or inadequate instrumentation and quantification of the quantities making up the behavioral score.

The frequency polygon of the raw scores for the vocational behavior, "awareness of contingencies which may affect the vocational goals," is shown in FIGURE 4. The distribution curve for this behavior is very much like the distribution of raw scores on the vocational behavior, "awareness of the need to crystallize an occupational preference," shown in FIGURE 1. The same comments are appropriate to the distribution in FIGURE 4 as to the distribution in FIGURE 1.

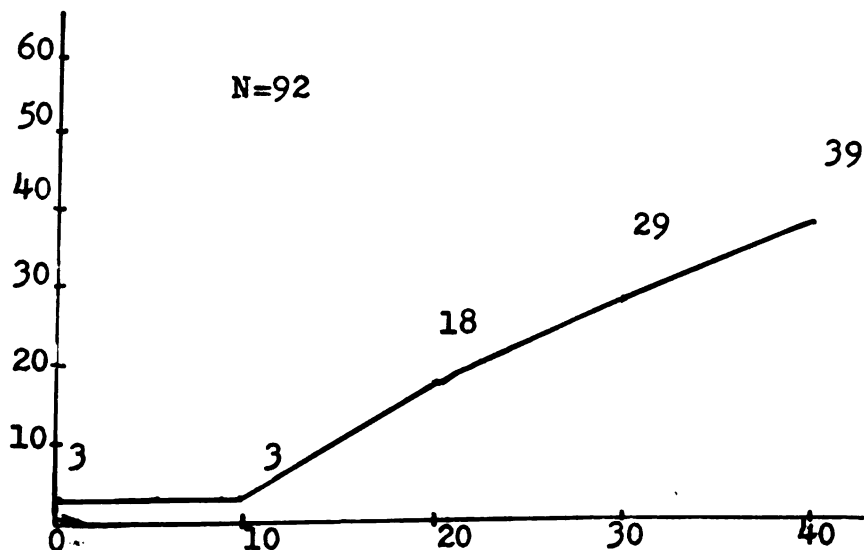


FIGURE 4. Distribution of raw scores: "awareness of contingencies which may affect vocational goals" (L'Anse).

FIGURE 5 shows the frequency polygon for the distribution of raw scores for the vocational behavior, "awareness of present-future relationships." The curve approaches normal being slightly high on the side of low scores. The rather large number of the low scores is an artifact of measurement and quantification or there was limited development of this vocational behavior in the respondents.

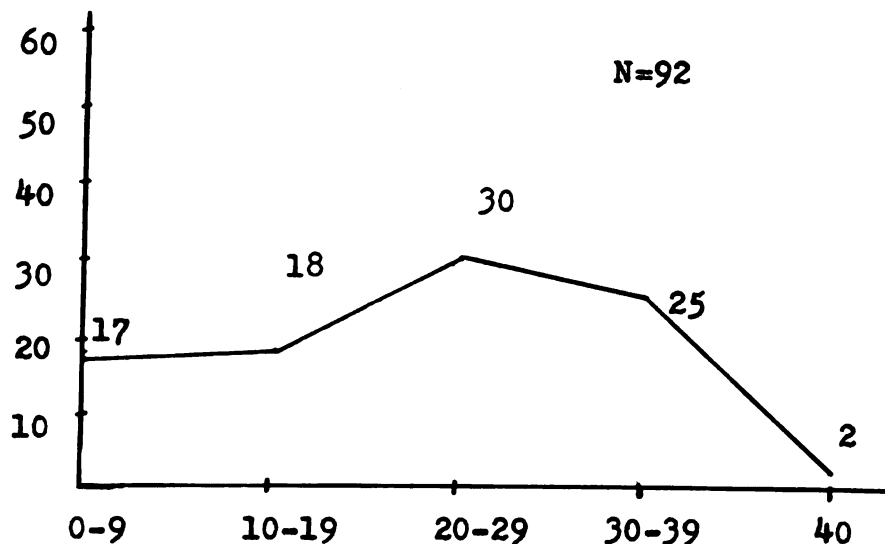


FIGURE 5. Distribution of raw scores: "awareness of present-future relationships" (L'Anse).

The frequency polygon for this vocational behavior is different for the Onaway School (See Appendix B). The curve for the scores in this school has a curvilinear form. This form results from a larger number of both high and low scores with few middle range scores and indicates that the Onaway students developed differentially or the instrumentation and quantification of the behavior needs improvement.

The frequency polygons in FIGURES 6, 7 and 8 are for the vocational behaviors: (1) "formulation of a generalized occupational preference," (2) "possession of information concerning the preferred occupation," and (3) "planning for the preferred occupation." These behaviors all approached the normal bell-shaped curve. The distribution in FIGURE 6 is slightly negatively skewed while the distributions in FIGURES 7 and 8 are slightly positively skewed. The negative skewedness is indicative of a well developed behavior while the positive skewedness is indicative of a slowly developing behavior or both are an artifact of measurement and quantification.

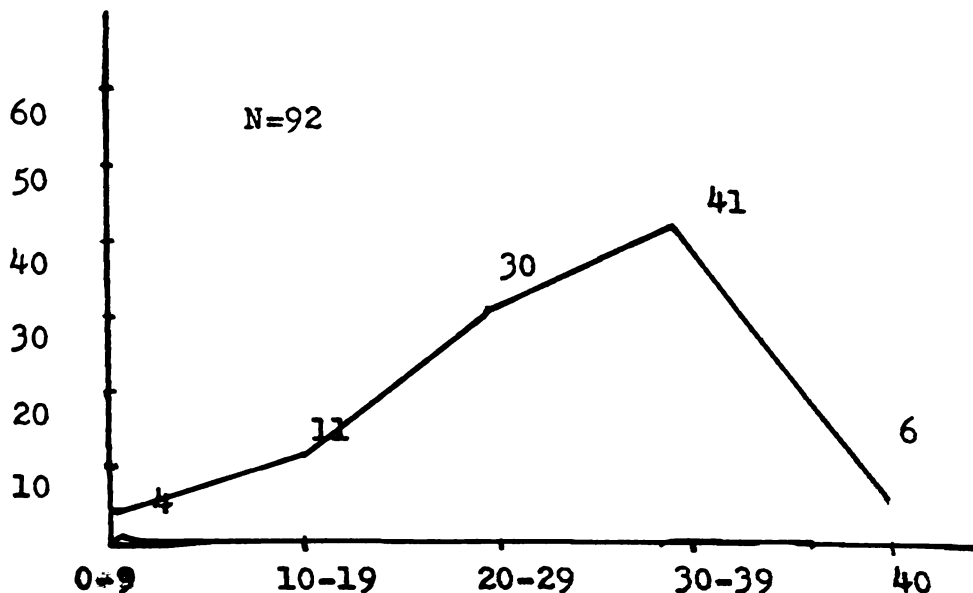


FIGURE 6. Distribution of raw scores: "formulation of a generalized occupational preference" (L'Anse).

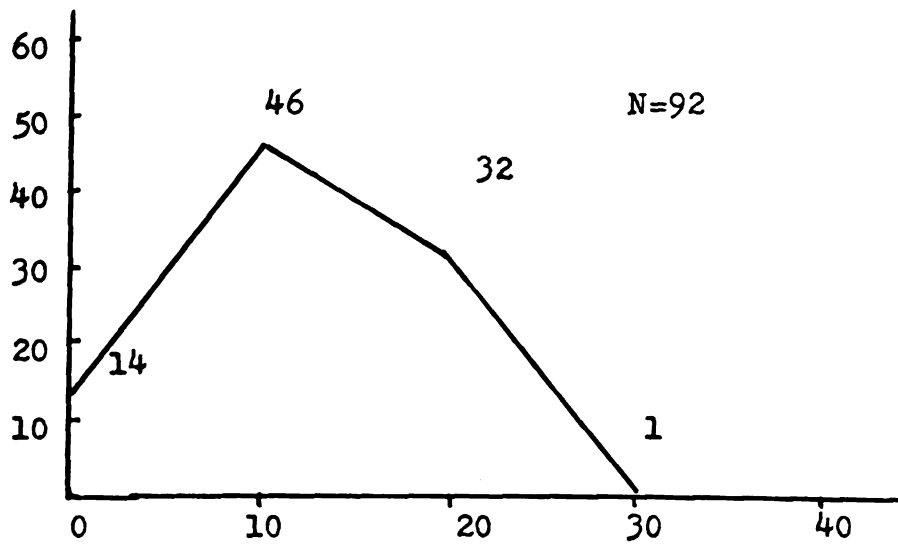


FIGURE 7. Distribution of raw scores: "possession of information concerning the preferred occupation" (L'Anse).

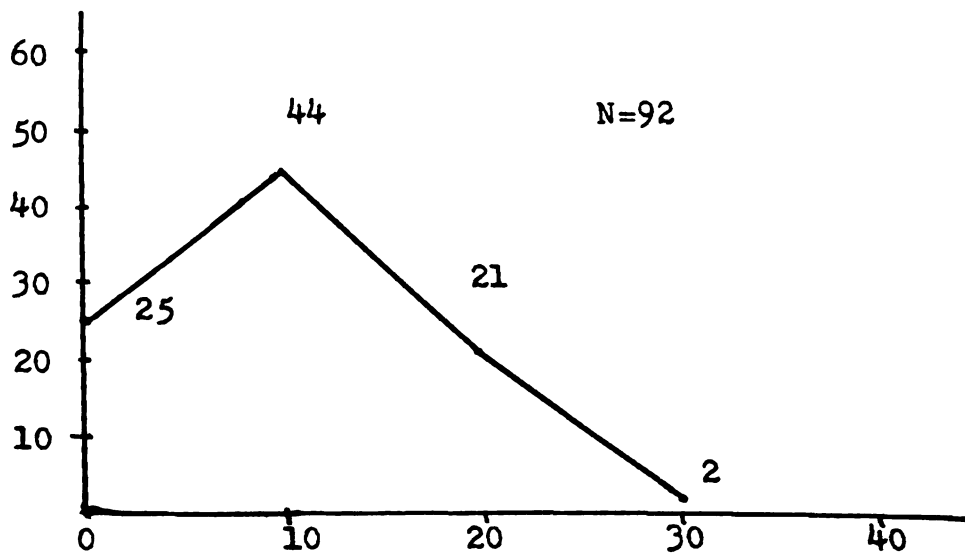


FIGURE 8. Distribution of raw scores: "planning for the preferred occupation" (L'Anse).

Objective Three

The third objective of this study is to ascertain the relationship of the descriptive variables to the vocational maturity of three classes of ninth grade students at L'Anse, Crystal Falls and Onaway, Michigan.

The statistic used to measure the relatedness of the selected factors to vocational maturity was the Pearson Product Moment Correlation. This relational statistic is especially useful in exploratory studies where little or no previous research is available. The Pearson Product Moment Correlation indicates the existence and degree of relationship, not the cause or effect.

The relationships discussed in this section of the report deal only with those that are statistically significant. Statistical significance is defined as the .05 level or beyond.

Variables Not Related to Vocational Maturity

The two variables that did not correlate with vocational maturity were father's socio-economic status and place of residence. There were no significant correlations between scores on these variables and vocational maturity scores or the eight vocational behaviors used as indicators of vocational maturity.

The finding that father's socio-economic status, as measured by occupation, is unrelated to vocational maturity is opposed to the findings of Super in his Career Pattern Study. He found parental occupational level to be related to orientation to vocational choice.¹

The finding that place of residence does not correlate with vocational maturity supports a similar finding by Super.² He found that vocational maturity was unrelated to urban rather than rural residence. The reader should keep in mind that the population studied by Super was largely urban and the populations in this study were largely rural non-farm. Therefore, a full range of residence was not available for correlation in either study. The limited range of residence may provide little opportunity for scores on residence and other variables to vary together.

Variables Related to Vocational Maturity or Vocational Behaviors

Sex

Most vocational studies reported in the literature were conducted with boys. The measurements in this

¹Donald Super and Phoebe Overstreet, The Vocational Maturity of Ninth Grade Boys (New York: Teachers College, Columbia University, Bureau of Publications, 1960), P. 107.

²Ibid., P. 115.

study were taken on both boys and girls at the ninth grade level. The correlations between the eight vocational behavior scores and sex in each of the three school populations are shown in TABLE 17.

The quantification of sex consisted of assigning zero to boys and one to girls. Therefore, as other variables vary with sex, the variability moves from boys toward girls. Total vocational maturity score, the sum of the eight vocational behavior scores, was related to sex in the Crystal Falls School. The component vocational behavior, "awareness of the need to crystallize an occupational preference," also correlated with sex in the Crystal Falls School. This latter relationship is the stronger of the two. It may account for total vocational maturity score correlating with sex.

The vocational behavior, "use of resources in gathering information about self and future," correlated positively with sex in the L'Anse School. The same behavior correlated negatively with sex in the Onaway School. Two other behaviors correlated with sex in the Onaway population: (1) "awareness of factors to consider in formulating an occupational preference" and (2) "formulation of a generalized occupational preference."

TABLE 17. Significant correlations between vocational behaviors and selected variables for the ninth grade classes at three Michigan high schools.

Vocational Behaviors	Sex			Age			Occupational Aspiration			Grade Point Average			Socio-Economic Status of Preferred Job		
	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway
Awareness of the need to crystallize		.435		-.303		-.414		.349							
Use of Resources	.260		-.224				.297			.230					
Awareness of Factors to Consider			.246			-.241	.259	.256		.211					
Awareness of Contingencies							.234			.213					
Awareness of Present-Future Relationships							.233			.272					
Formulation of a Generalized Preference			.232			.229	.215		-.244						
Possession of Information														-.258	
Planning for the Preferred Occupation								.262							.308
Total Vocational Maturity Score		.248					.353	.364		.303			.280		.264

Age

Age, within one school grade, did not correlate with vocational maturity as measured by the sum of the eight vocational behavior scores. Four significant correlations between vocational behavior scores and age were found. Three of the four correlations were negative. Negative correlations were found between age and "awareness of the need to crystallize an occupational preference" in the L'Anse and Onaway Schools. Age also correlated negatively with "awareness of factors to consider in formulating an occupational preference" in the Onaway School. The only positive correlation for age was with "formulation of a generalized occupational preference" in the Onaway School.

Super, in his Career Pattern Study, also found that age was not related to his total index of vocational maturity. He did find one significant relationship between age and an index of vocational maturity. The non-significant correlations between age and indices of vocational maturity reported by Super were also negative.³

The findings in this study generally agree with those of Super. Age, within one grade, appears to be negatively related to certain vocational behavior scores

³Ibid., P. 105.

indices of vocational maturity. The reader is cautioned in interpreting this finding as both studies were conducted with ninth grade pupils. The negative correlations may be due to the nature of the populations studied.

Occupational Aspiration

The score for total vocational maturity correlated with occupational aspiration scores in the Crystal Falls and Onaway Schools (TABLE 17). The only vocational behavior score to correlate with occupational aspiration scores in more than one school was, "awareness of factors to consider in formulating an occupational preference."

The scores for all vocational behaviors except, "formulation of a generalized occupational preference," and "possession of information concerning the preferred occupation," were related to occupational aspiration scores in Crystal Falls or Onaway Schools.

One negative relationship between vocational behavior and occupational aspiration was found in the L'Anse School. The vocational behavior, "formulation of a generalized occupational preference," correlated negatively with occupational aspiration. This was the only vocational behavior to correlate with occupational aspiration in the L'Anse School.

Super also found that boys vocational aspiration level correlated with his total vocational maturity index and with most of his indices of vocational maturity.⁴

School Achievement

The total vocational maturity score was found to correlate with grade point average in one of the three school populations (TABLE 17). The behavior, "awareness of contingencies which may affect vocational goals," was positively related to grade point average in the Crystal Falls School. The vocational behavior, "formulation of a generalized occupational preference," was negatively related to grade point average in the L'Anse School.

The reader will recall that the Pearson Product Moment Correlation between scholastic aptitude and grade point average for the three school populations studied ranged from .77 at L'Anse to .85 at Crystal Falls.

Significant relationships between grade point average and the total index of vocational maturity as well as with three indices of vocational maturity were found in Super's Career Pattern Study.⁵

⁴Ibid., P. 110.

⁵Ibid., P. 112.

Socio-Economic Status of Preferred Job

The socio-economic status score for the job preferred by students was related to the total vocational maturity score in two of the three schools (TABLE 17). The index of socio-economic status of preferred job correlated positively with four of the eight vocational behaviors in the L'Anse School. The score for "planning for the preferred occupation" was found to be related to the index of socio-economic status of the preferred job in the Onaway School. A negative correlation was found between "possession of information concerning the preferred occupation" score and socio-economic score for preferred job in the Crystal Falls School. This was the only negative correlation found and the only correlation found in the Crystal Falls School.

Social Participation

The vocational maturity score was found to be related to the total social participation score in all three school groups (TABLE 18). The vocational behaviors that correlated with total social participation scores in two of the three schools are:

1. "Awareness of the need to crystallize an occupational preference"
2. "Use of resources in gathering information about self and future"
3. "Awareness of factors to consider in formulating a vocational preference"

TABLE 18. Significant correlations between vocational behaviors and social participation for the ninth grade classes at three Michigan high schools.

Vocational Behaviors	In-School Social Participation			Out-of-School Social Participation			Total Social Participation		
	Schools			Schools			Schools		
	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway
Awareness of the Need to Crystallize		.242					.237	.260	
Use of Resources	.250		.273	.352			.368		.232
Awareness of Factors to Consider		.285			.229			.310	.263
Awareness of Contingencies	.247	.310					.208	.277	
Awareness of Present-Future Relationships	.266						.244		
Formulation of a Generalized Preference									
Possession of Information						.243			
Planning for the Preferred Occupation									
Total Vocational Maturity Score	.309	.308		.218	.273		.314	.348	.244

4. "Awareness of contingencies which may affect vocational goals"

The score for "awareness of present-future relationships" also correlated with the score for total social participation in the L'Anse Schools.

The total social participation score is a sum of scores for in-school social participation and out-of-school social participation. The in-school and out-of-school social participation scores correlated with the total vocational maturity score in two of the three schools. A larger number of positive correlations were found between the in-school social participation score and the vocational behavior scores than between the out-of-school social participation score and vocational behavior scores.

The findings reported above generally agree with those of Super.⁶ He found his Index of Vocational Maturity correlated with participation in in-school activities and in out-of-school activities. However, his index, "use of resources" did not correlate with either of these dimensions. The vocational behavior, "use of resources in gathering information about self and future," scored in this study, correlated with total participation scores in the L'Anse and Onaway Schools.

⁶Ibid., P. 112.

Kuder Preference Record

The ten interest areas measured by the Kuder Preference Record are shown in TABLE 19. The relationships of the Kuder areas to vocational behaviors and vocational maturity are also shown.

The total vocational maturity score correlated:

1. negatively with the Kuder mechanical score in the Onaway School.
2. positively with the Kuder scientific score in the L'Anse and Onaway Schools.
3. negatively with the Kuder persuasive score in Crystal Falls and Onaway Schools.
4. negatively with the Kuder artistic score in the L'Anse School.
5. positively with the Kuder musical score in the Crystal Falls School.

The Kuder interest scores that tended to correlate negatively with vocational behaviors are:

1. Mechanical
2. Persuasive
3. Artistic
4. Literary
5. Clerical

The Kuder Preference Record interest scores that tended to correlate positively with the eight vocational behaviors are: (1) outdoor, (2) scientific and (3) musical.

Significant correlations between vocational behaviors and the Kuder Preference Record for the ninth grade classes at three Michigan high schools.

Vocational Behaviors	Outdoor			Mechanical			Computational			Scientific			Persuasive		
	Schools			Schools			Schools			Schools			Schools		
	L'Anse	Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway
Awareness of the need to crystallize	.218									.303					
Use of Resources					-.385	-.289				.293				-.223	-.306
Awareness of Factors to Consider					-.230					.258					
Awareness of contingencies					-.262	-.311									-.230
Awareness of Present-Future Relationships										.313					
Formulation of a generalized Preference															
Possession of Information							.209			.280				-.255	
Planning for the Preferred Occupation								-.250							
Total Vocational Maturity Score						-.261				.212		.328		-.244	-.252

Vocational Behaviors	Artistic			Literary			Musical			Social Science			Clerical		
	Schools			Schools			Schools			Schools			Schools		
	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway
Awareness of the Need to Crystallize															
Use of Resources		.303													
Awareness of Factors to Consider															
Awareness of Contingencies															
Awareness of Present-Future Relationships															
Formulation of a Generalized Preference															
Possession of Information															
Planning for the Preferred Occupation															
Total Vocational Maturity Score															

-.234

.291

.269

-.246

-.312

.297

.261

.248

.241

-.206

.342

-.241

-.246

-.290

The Kuder computational and social science interest scores each had one positive and one negative correlation with vocational behavior scores.

The Kuder interest scores that tended to vary with total vocational maturity scores are: (1) mechanical, (2) persuasive, and (3) artistic in a negative direction; and (1) scientific and (2) musical in a positive direction.

The Differential Aptitude Tests

TABLE 20 shows the correlations for vocational maturity and vocational behavior scores with the aptitude test scores that make up The Differential Aptitude Tests. An inspection of TABLE 20 reveals that the correlations among aptitudes, vocational maturity, and vocational behavior scores are generally in the positive direction. Two negative correlations were found on scores for the vocational behavior, "use of resources in gathering information about self and future," with: (1) clerical speed and accuracy scores in the Onaway School, and (2) space relations scores in the L'Anse School.

The score for total vocational maturity correlated positively with scores on:

1. verbal reasoning in all three schools.
2. scholastic aptitude in all three schools.

TABLE 20. Significant correlations between vocational behaviors and The Differential Aptitude Tests for the ninth grade classes at three Michigan high schools.

Vocational Behaviors	Verbal Reasoning			Numerical Ability			Scholastic Aptitude			Abstract Reasoning			Clerical Speed		
	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway
Awareness of the Need to Crystallize			.395			.347			.405				.277		-.259
Use of Resources															
Awareness of Factors to Consider	.266		.364			.230	.234		.329	.222	.337		.236		.336
Awareness of Contingencies		.237													
Awareness of Present-Future Relationships															
Formulation of a Generalized Preference															
Possession of Information				.251	.326			.275		.213					
Planning for the Preferred Occupation				.220	.257		.230	.235		.225					
Total Vocational Maturity Score	.228	.281	.310				.225	.252	.280	.227		.245		.329	

TABLE 20. Continued

Vocational Behaviors	Mechanical Reasoning Schools			Space Relations Schools			Spelling-Language Schools			Grammar-Language Schools		
	L'Anse	Falls	Onaway	L'Anse	Falls	Onaway	L'Anse	Falls	Onaway	L'Anse	Falls	Onaway
Awareness of the Need to Crystallize									.360			.492
Use of Resources				.258								
Awareness of Factors to Consider	.230					.261			.238	.257	.246	.298
Awareness of Contingencies				.211					.268		.369	
Awareness of Present-Future Relationships									.229			
Formulation of a Generalized Preference						.242				.248		
Possession of Information									.317			
Planning for the Preferred Occupation									.307		.229	
Total Vocational Maturity Score									.382		.402	.247

3. abstract reasoning in L'Anse and Onaway Schools.
4. clerical speed and accuracy in the Crystal Falls School.
5. spelling-language in the Crystal Falls School.
6. grammar-language in the Crystal Falls and Onaway Schools.

The reader will recall that the tests for Verbal Reasoning and Numerical Ability were combined to give a score for scholastic aptitude. Thus, it appears that most of the correlation with the scholastic aptitude score is due to the correlation with the component score for Verbal Reasoning.

The vocational behavior, "awareness of factors to consider in formulating a vocational preference," correlated with all of The Differential Aptitude Test scores in at least one school.

Vocational Values Inventory

The seven values measured by the Vocational Values Inventory are shown by school in TABLE 21. The table also shows the correlations among the scores for vocational values, vocational behaviors and vocational maturity.

The direction of the relationships of the total vocational maturity scores with each of the vocational value scores are: (1) negative with control in the Crystal Falls School, (2) negative with prestige in the L'Anse School, and (3) positive with self-realization in the Crystal Falls and Onaway Schools.

TABLE 21. Significant correlations between vocational behaviors and Vocational Values Inventory for the ninth grade classes at three Michigan high schools.

Vocational Behaviors	Altruism			Control			Job Freedom			Money		
	Schools			Schools			Schools			Schools		
	L'Anse	Falls	Onaway	L'Anse	Falls	Onaway	L'Anse	Falls	Onaway	L'Anse	Falls	Onaway
Awareness of the Need to Crystallize			.320									
Use of Resources	.249									.230		-.394
Awareness of Factors to Consider			.242									
Awareness of Contingencies												
Awareness of Present-Future Relationships	.278											
Formulation of a Generalized Preference										.222		
Possession of Information												
Planning for the Preferred Occupation						.243						
Total Vocational Maturity Score						.305						

TABLE 21. Continued

	Prestige			Security			Self-Realization		
	Schools			Schools			Schools		
	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway	L'Anse	Crystal Falls	Onaway
Vocational Behaviors									
Awareness of the Need to Crystallize		.224			-.259				.446
Use of Resources									
Awareness of Factors to Consider								.313	.382
Awareness of Contingencies								.342	
Awareness of Present-Future Relationships									
Formulation of a Generalized Preference									
Possession of Information									
Planning for the Preferred Occupation									
Total Vocational Maturity Score	-.221							.276	.301

The vocational behavior scores tended to correlate:

1. positively with scores on altruism.
2. negatively with scores on control.
3. negatively with scores on money.
4. negatively with scores on security.
5. positively with scores on self-realization.

Prestige as a vocational value appears to differ from the occupational aspiration type of prestige as measured by the Occupational Aspiration Scale. The total occupational aspiration scores, the reader will recall, correlated positively with total vocational maturity scores. Prestige, as measured by the Vocational Values Inventory, correlated negatively with total vocational maturity score.

The relationships to hold in two of the three schools were: (1) total vocational maturity score with self-realization score, and (2) self-realization with the vocational behavior, "awareness of factors to consider in formulating a vocational preference."

Summary

The data from the study are set forth and discussed in this chapter. The presentation and discussion of data is centered around the three objectives of the study.

The three ninth grade classes are described using variables found or thought to be related to vocational

maturity. Using these variables, the relationships among the three groups are discussed.

The scores derived from measurement and quantification of the vocational behaviors are presented and discussed. The total of the vocational behavior scores was used as a measure of vocational maturity. Vocational maturity is the relative progress made by an individual toward the vocational developmental task of crystallizing an occupational preference.

The descriptive variables were related to vocational behaviors and vocational maturity using Pearson Product Moment Correlations. Significant relationships, those reaching the .05 level of significance, among these variables are tabulated and discussed.

The impending chapter is a summary of the findings, conclusions, implications, and recommendations for further research.

CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

Introduction

This chapter focuses on a summary of the study, the research findings, conclusions and suggestions for research and the educational process. The chapter organization includes the following sections: (1) summary of the study, (2) summary of the findings by major objectives, (3) conclusions, (4) implications, and (5) recommendations for further study.

Summary of the Study

Statement of the Problem

Educators planning vocational experiences for youth need to determine the degree of vocational development. The ability to determine vocational maturity would enhance the educational process by enabling educators to time vocational experiences to occur at the appropriate stage of vocational development. For example, specific occupational skills cannot be considered as occupational preparation until an occupational preference has been crystallized.

Objectives of the Study

The specific objectives of this study are to:

1. describe three ninth grade populations using selected variables found or thought to be related to vocational maturity.
2. assess the vocational maturity of these students according to the vocational development theory of Super.
3. ascertain the relationship of the selected variables to the vocational maturity of the students.

Major Features of the Study

Foundations of the Study

More than ten theories of occupational choice have appeared in the literature in as many years. Two theorists, Ginzberg and Super, developed theories based on developmental psychology. Super extended the earlier work of Ginzberg and incorporated the concept of developmental tasks into his theorizing and research. He recently named five vocational development tasks typically encountered by youth and workers in American society as they progress toward vocational maturity.

Super began operationalizing his ideas by suggesting a number of vocational behaviors as evidence of persons coping with vocational development tasks. The vocational behaviors related to one vocational development task, crystallizing an occupational preference, are measured in this research.

A central feature of Super's theory is the idea of vocational self-concept. The concept of self as related to work is not specifically included in this research. However, some inferences are drawn related to vocational self-concept.

Methods

The groups studied were three ninth grade classes at L'Anse, Crystal Falls, and Onaway, Michigan. Two of these groups were also a part of The Rural Schools Project, a vocational-technical development project in the College of Education at Michigan State University.

Several descriptive measures were taken on each group. The variables selected for measurement were those found or thought to be related to vocational maturity.

A Vocational Maturity Instrument was developed to measure eight of the eleven vocational behaviors posited by Super as being indicative of the vocational developmental task of crystallizing an occupational preference. This developmental task is typically met during the high school years.

The eight vocational behaviors were scored individually from the Vocational Maturity Instrument. The total of the eight vocational behavior scores is the score for vocational maturity. Vocational maturity, as used in this study, is a relative term indicating the

degree of vocational development toward the vocational developmental task of crystallizing an occupational preference.

The data was analyzed using a Control Data Corporation 1604 Computer. Statistics used were: (1) mean, (2) standard deviation, (3) coefficient of variation and (4) Pearson Product Moment Correlation.

The descriptive-comparative and the vocational maturity phases of the study use mean, standard deviation, and coefficient of variation. The relationship phase of the study is a search for relationships among the descriptive variables and vocational maturity. The Pearson Product Moment Correlation is used to indicate the existence and degree of relationship among these variables.

Summary of Findings

Objective One

The first objective of this study is to describe three ninth grade classes at Crystal Falls, L'Anse, and Onaway, Michigan, employing descriptive variables found or thought to be related to vocational maturity.

Place of Residence

The composition of the ninth grade classes in the three schools varied on a rural-urban dimension. Although all three communities may be described as rural, this description is relative. The Onaway School drew largely from a farm and rural non-farm population. The L'Anse School represented predominantly town residents. The pupils in the Crystal Falls School resided largely in town or homes in the country.

Age and Sex

The students in the ninth grade classes at L'Anse, Crystal Falls and Onaway were generally fourteen years of age. The Crystal Falls School was the most homogeneous on an age basis followed by L'Anse and Onaway.

The total of the three populations contained slightly more girls than boys. The Onaway School, however, included slightly more boys than girls.

Scholastic Aptitude

The class at Crystal Falls scored highest of the three groups on the combined scores from the verbal reasoning and numerical ability tests of The Differential Aptitude Tests. The coefficient of variation, an indicator of relative homogeneity, reveals that the students at Crystal Falls are also less variable on scholastic aptitude than the pupils at L'Anse and Onaway.

School Achievement

The Onaway class generally received lower grades than the classes at L'Anse and Crystal Falls. The correlation between grades and scholastic aptitude was as follows:

1. Crystal Falls = .85
2. Onaway = .80
3. L'Anse = .77

Occupational Aspiration

The Crystal Falls pupils scored higher on occupational aspiration than the pupils at L'Anse and Onaway. The Crystal Falls student's scores were also more homogeneous in this regard.

The girls, as a group, tended to have larger differences between scores for occupational expectation and aspiration than did boys. However, the boys at Onaway had the largest absolute difference between these two occupational dimensions.

For the life period when schooling is over, the girls tended to score higher on occupational expectation and aspiration than boys.

Social Participation

The L'Anse and Crystal Falls pupils scored higher on the Social Participation Scale than the Onaway pupils. The rank order of schools based on scores from Social

Participation Scale for out-of-school activities was:

(1) L'Anse, (2) Crystal Falls and (3) Onaway. The rank order of schools on in-school social participation score was: (1) Crystal Falls, (2) L'Anse and (3) Onaway.

The analysis of social participation scores revealed that the students at Crystal Falls and Onaway had a better balance between in-school and out-of-school social activities than the pupils at L'Anse.

Index of Socio-Economic Status

The socio-economic index for the father's occupation was about equal in the three schools. The socio-economic index for the job preferred by the students was much greater than the index level actually achieved by their fathers.

Comparing the three schools on socio-economic index of the student's preferred job, the rank order was: (1) Crystal Falls, (2) L'Anse and (3) Onaway.

Kuder Interests

The interest scores across the three schools were similar. The exception was the Onaway School. Students scored higher on the outdoor interest area and their interest scores were more homogeneous on eight of the ten interest areas.

Vocational Values

The students in all three classes scored highest on the vocational value of self-realization. The groups agreed on security as their second value choice. The scores were the most homogeneous on these two values.

Objective Two

The second objective of this study is to assess the vocational maturity of the three ninth grade populations according to the vocational development theory of Super.

Vocational Maturity

The score for vocational maturity is the total of the scores for the eight vocational behaviors measured in this study. Vocational maturity refers to the level or stage of development with reference to work. Vocational maturity, in this study, was determined by the vocational behaviors manifested by each pupil as he coped with the vocational developmental task of crystallizing an occupational preference.

The pupils at L'Anse and Crystal Falls scored higher on vocational maturity than those at Onaway. The vocational maturity scores for L'Anse and Crystal Falls pupils were less variable than those for Onaway.

Vocational Behaviors

The highest mean vocational behavior score, of the eight vocational behaviors measured, was for "awareness of factors to consider in formulating an occupational preference." Furthermore, scores on this vocational behavior were the most homogeneous as judged by the coefficient of variation. These statements hold for all three classes.

Judging from the shape of the distributions of measured raw scores, the following vocational behaviors appear to be reasonably well developed in the three ninth grade classes.

1. "Awareness of the need to crystallize an occupational preference"
2. "Awareness of factors to consider in formulating an occupational preference"
3. "Awareness of contingencies which may affect vocational goals"
4. "Formulation of a generalized occupational preference"

Judging on the same basis as above, the following vocational behaviors show limited development.

1. "Use of resources in gathering information about self and work"
2. "Possession of information concerning the preferred occupation"
3. "Planning for the preferred occupation"

The distribution of raw scores for the vocational behavior, "awareness of present-future relationships," is nearly normal.

Objective Three

The third objective of this study is to ascertain the relationship of selected variables to the vocational maturity of the three classes of ninth grade pupils at L'Anse, Crystal Falls and Onaway, Michigan. The extent of relationships which exist is determined by the Pearson Product Moment Correlation. A relationship between variables is significant at or beyond the .95 level of confidence.

Variables Not Related to Vocational Maturity

Three of the descriptive variables did not relate to vocational maturity. No significant correlations were found between the index of family socio-economic status, age or place of residence and vocational maturity scores in the three groups.

Variables Related to Vocational Maturity

The following variables correlated positively with the total score for vocational maturity in at least two of the three school classes studied.

1. Occupational aspiration
2. Index of socio-economic status of the student's preferred job

3. In-school social participation
4. Out-of-school social participation
5. Total social participation
6. Scientific interests
7. Verbal reasoning aptitude
8. Abstract reasoning aptitude
9. Scholastic aptitude
10. Grammar-language aptitude
11. Self-realization as a vocational value

The only negative correlation with vocational maturity score was with persuasive interests. The relationship was found in two of the three classes studied.

Conclusions

1. The variables related to vocational maturity used in this study are effective descriptive measures of groups. The three ninth grade classes at L'Anse, Crystal Falls and Onaway, Michigan, differ on many of the variables related to vocational maturity.

2. The ninth grade classes at L'Anse and Crystal Falls High Schools are closer to meeting the vocational developmental task of crystallizing an occupational preference than is the class at the Onaway High School. In short, the two former groups are more vocationally mature than the latter.

3. The level of vocational maturity cannot be inferred from the relationships among variables as measured in this study. The correlations between vocational maturity and the variables in this study were all low and of no predictive value.

4. The Vocational Maturity Instrument is a valid measure of vocational maturity. This statement is based on the agreement between the correlates of vocational maturity in this study and the correlates of vocational maturity identified in Super's Career Pattern Study. The reader is cautioned that the earlier work of Super was accepted by the author as a valid base for this study.

5. Vocational maturity is positively related to verbal reasoning, abstract reasoning, scholastic aptitude and grammar-language, indicating that the vocational developmental task of crystallizing an occupational preference is a cognitive process consisting largely of verbal behaviors.

6. There is a chronological order to the development of the vocational behaviors that comprise the vocational developmental task of crystallizing an occupational preference.

7. Vocational values effect vocational development at an earlier stage than suggested by Ginzberg and Super. They suggested that values enter the vocational

development process after age fifteen. This research demonstrates the existence of vocational value patterns by the age of fourteen.

8. The results of this study suggest that youth want to realize themselves through work in terms of finding an outlet for their interests and aptitudes.

Implications for Education

1. The rate of vocational development of youth differs from one community to another. Therefore, education concerned with effecting the course and rate of vocational development must account for these community differences. To illustrate, youths awareness of present-future relationships may be affected by the level of knowledge of adults in the community. Adults who do not understand the relationship of present education to future work cannot help the youth of a community to understand the importance of education to their future career.

2. The ability to measure vocational maturity enables educators to program vocational experiences to the individual's or group's level of vocational development. The planning of educational programs to effect the course and rate of youth development, the preparation of instructional materials, and the preparation of teachers, counselors and youth workers, are areas in education where the ability to measure vocational maturity will help educators develop program.

3. The contribution of education to vocational development needs to include cognitive operations instead of or in addition to manipulative operations at the early high school level. For example, knowing how to use resources in gathering information about self and work is more important to the vocational development of early high school age youth than being able to operate a specific machine.

4. Education to enhance vocational development may well be designed to develop the specific vocational behaviors that are the precursors of vocational developmental tasks. For example, programs to teach the "factors to consider in formulating an occupational preference" would increase the vocational maturity of youth. Programs planned to increase youth's knowledge and understanding of each vocational behavior should increase vocational maturity.

5. Educational programs at the junior and senior high school level planned to enhance vocational development and vocational maturity should be programmed to the chronological order of development of the vocational behaviors. For example, the first vocational behavior related to the vocational developmental task of crystallizing an occupational preference is "awareness of factors to consider in formulating an occupational preference."

The earliest instruction beyond the fantasy stage of development, should be planned to create an awareness of the factors to consider in formulating an occupational preference.

6. Any attempt to provide vocational experiences or help individuals change occupation or occupational preferences, must consider the vocational value structure of the individual. For example, preparing an individual with a high value on "control" for an "altruistic" occupation such as social work is less likely to be successful than if the individual held the value of "altruism" high. The alternatives in this situation are to assist the individual to find an occupation where the value of "control" would be an asset or to modify the individual's value structure.

Recommendations for Further Research

1. Future studies concerned with identifying the point in human development where differences in vocational maturity begin would be useful. This study indicates only that the level of vocational development is different at the ninth grade.

2. Further study is needed to chronologically order the vocational behaviors related to the vocational developmental task of crystallizing an occupational

preference. A cross sectional study of youth from junior high school students to high school graduates should prove fruitful.

3. The Vocational Maturity Instrument needs to be refined and tested on groups of different ages and geographic locations. Furthermore, the instrument needs to be simplified to ease administration and scoring.

4. Research is needed to identify the possibility of a verbal or abstract factor in vocational maturity. Such a factor may be a useful predictor of vocational maturity at the junior and senior high school age level.

5. A study to determine the stage of vocational development when vocational values start to form and become patterned would indicate how early in life occupational considerations are internalized.

6. Research is needed on the vocational developmental task of specifying a vocational preference. This task is typically met during the middle and late adolescent years which follow high school. Super has suggested the vocational behaviors associated with this vocational developmental task. Knowledge of and the ability to measure progress toward this task would enhance post high school education.

7. The vocational self-concept appears to be a potential variable for vocational development research. The desire of ninth grade youth to implement their interests and aptitudes in work suggests that work as an expression of vocational self-concept may be a fruitful area for research.

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APPENDICES

APPENDIX A-1

VOCATIONAL MATURITY INSTRUMENT

Name _____ 1.0 (Boy____) 1.1 (Girl____)

2. Age _____ 3. High School _____

4. MY FATHER'S OCCUPATION IS: (Specify the kind of work he does or did, not where he works _____)

5. MY FATHER CONSIDERS HIS OCCUPATION TO BE:

- 5.0 _____ Very satisfactory
- 5.1 _____ Fairly satisfactory
- 5.2 _____ Good enough
- 5.3 _____ Not very good
- 5.4 _____ Very poor

6. IN COMPARISON TO THE INCOME OF THE PARENTS OF OTHER STUDENTS IN OUR HIGH SCHOOL, THE INCOME OF MY PARENTS IS:

- 6.0 _____ One of the highest incomes
- 6.1 _____ Higher than average
- 6.2 _____ Just average
- 6.3 _____ Less than average
- 6.4 _____ One of the lowest incomes

7. MY PARENTS ARE CONSIDERED BY MOST PEOPLE IN THE COMMUNITY TO BE:

- 7.0 _____ Very important people
- 7.1 _____ Rather important people
- 7.2 _____ Just average people
- 7.3 _____ Of less than average importance
- 7.4 _____ Not at all important

8. AS TO CONTINUING MY SCHOOLING BEYOND HIGH SCHOOL, MY PARENTS:

- 8.0 _____ Have strongly encouraged me to continue
- 8.1 _____ Have given me some encouragement to continue
- 8.2 _____ Have never said much about it
- 8.3 _____ Feel that I would be better off going to work after high school
- 8.4 _____ Feel that I should quit high school and go to work

9. AS TO THE JOB I GO INTO, MY PARENTS:

- 9.0 _____ Want me to have a very important job
- 9.1 _____ Want me to have a job that is quite a bit better than most jobs around here
- 9.2 _____ Want me to have a job that is a little bit better than most jobs around here
- 9.3 _____ Feel that the job I take should be as good as most jobs around here
- 9.4 _____ Do not seem to care how good the job I go into is
- 9.5 _____ Have never said much about it

10. I LIVE:

- 10.0 _____ On a farm
 10.1 _____ In the open country, but not on a farm
 10.2 _____ In a village under 2,500
 10.3 _____ In a town of 2,500 to 10,000
 10.4 _____ In a city over 10,000

11. HAVE YOU ASKED FOR INFORMATION OR ADVICE ABOUT CHOOSING YOUR HIGH SCHOOL COURSES: 11.0 _____ No 11.1 _____ Yes

IF YES, circle a suitable number on the scale below for each source of information affecting your choice of high school courses.

	No Influen-	Little			Great			
	ence	Influence			Influence			
12.	0	1	2	3	4	5	6	Parents
13.	0	1	2	3	4	5	6	Principal or superintendent
14.	0	1	2	3	4	5	6	Grade school teacher
15.	0	1	2	3	4	5	6	High school teacher
16.	0	1	2	3	4	5	6	subject taught _____
17.	0	1	2	3	4	5	6	Guidance counselor
18.	0	1	2	3	4	5	6	Other adults
19.	0	1	2	3	4	5	6	Upper classmates
20.	0	1	2	3	4	5	6	Classmates & friends
21.	0	1	2	3	4	5	6	Brothers and/or sisters
22.	0	1	2	3	4	5	6	Books & pamphlets
23.	0	1	2	3	4	5	6	College requirements
24.	0	1	2	3	4	5	6	Others (specify) _____

25. HAVE YOU ASKED FOR ADVICE OR LOOKED FOR INFORMATION ABOUT WHAT YOU SHOULD DO AFTER HIGH SCHOOL:

25.0 _____ No 25.1 _____ Yes

IF YES, circle a suitable number on the scale below for each source of information affecting your occupational preference.

	No Influen-	Little			Great			
	ence	Influence			Influence			
26.	0	1	2	3	4	5	6	Parents
27.	0	1	2	3	4	5	6	Principal or superintendent
28.	0	1	2	3	4	5	6	Grade school teacher
29.	0	1	2	3	4	5	6	High school teacher
30.	0	1	2	3	4	5	6	subject taught _____
31.	0	1	2	3	4	5	6	Guidance counselor
32.	0	1	2	3	4	5	6	Other adults
33.	0	1	2	3	4	5	6	Upper classmates
34.	0	1	2	3	4	5	6	Classmates & friends
35.	0	1	2	3	4	5	6	Brothers and/or sisters
36.	0	1	2	3	4	5	6	Books & pamphlets
37.	0	1	2	3	4	5	6	College requirements
38.	0	1	2	3	4	5	6	Others (specify) _____

ARE YOU AWARE OF THE WAYS THAT EACH OF THE FOLLOWING MAY CONTROL ANY FUTURE JOBS THAT YOU CONSIDER? Check the appropriate column.

I Am OR I Am <u>Not</u> aware of the ways this item may control jobs.	
39.	Your ability to do school work
40.	Your interests
41.	Marriage
42.	Your special talents
43.	Jobs you can get
44.	Education necessary
45.	Special training necessary
46.	Pay received for your work
47.	If the job required moving
48.	Security of the job
49.	Difficulty of getting into some jobs
50.	Your parents approval
51.	Military service
52.	Financial help for educational plans
53.	High school courses needed

THE OCCUPATIONS WHICH I HAVE THOUGH ABOUT GOING INTO ARE:

54. _____
55. _____
56. _____
57. _____
58. The occupation I am hoping to follow is: _____
59. The occupation I will probably follow is: _____
60. In regard to my preference for an occupation:
60.0 _____ I am sure my mind is made up
60.1 _____ I think my mind is made up
60.2 _____ I have not made up my mind
61. If I were absolutely free to go into any kind of work I wanted, my preference would be _____.
62. The type of work I expect to be doing when I am thirty years old is _____.
63. If a person wanted to do the things I am planning to do, he or she needs to complete _____
(amount of schooling or training)
64. In the job I am planning for, a person would earn about \$ _____ (Circle one--Hour, Day, Month, Year)
65. The job I am now planning for is _____.

(Card 2)

CONSIDERING THE JOB YOU ARE PLANNING FOR, WHICH OF THE FOLLOWING ASPECTS DO YOU KNOW ABOUT? Check the appropriate items in the left hand column.

OF THOSE THAT YOU KNOW ABOUT, WHICH ONES HAVE OR ARE YOU NOW PLANNING FOR? Check the appropriate items in the right hand column.

<u>DO YOU KNOW?</u>			<u>ASPECTS OF MY PREFERRED JOB</u>	<u>DO YOUR PLANS INCLUDE EACH OF THESE ITEMS?</u>		
<u>Yes</u>	<u>No</u>	<u>Uncertain</u>		<u>Yes</u>	<u>No</u>	<u>Uncertain</u>
1.			GETTING THIS JOB: 21. Is the selection of specific high school courses necessary?			
2.			Is a license required? 22.			
X	X	XXXXXXXXX	The amount of	X	X	XXXXXXXXX
X	X	XXXXXXXXX	education required is: 23.	X	X	XXXXXXXXX
3.			High school graduation 24.			
4.			Vocational or technical school 25.			
5.			Some college 26.			
6.			A college degree 26.			
7.			CONDITIONS OF WORK:			
8.			Is the work indoors? 27.	X	X	XXXXXXXXX
9.			Is the work outdoors? 28.	X	X	XXXXXXXXX
10.			Is there noise and vibration in this work? 29.	X	X	XXXXXXXXX
11.			Is the work conducted in areas of high and/or low temperatures 30.	X	X	XXXXXXXXX
12.			Is the work conducted in areas that are wet and humid? 31.	X	X	XXXXXXXXX
13.			Are there safety hazards where this job is conducted? 32.	X	X	XXXXXXXXX
14.			Are there health hazards where this job is conducted? 33.	X	X	XXXXXXXXX

<u>Yes No Uncertain</u>		<u>Yes No Uncertain</u>	
14.		WHAT THE WORKER DOES: Is physical strength, quickness and/or being skillful important?	27.
15.		Does the worker need to identify different colors?	28.
16.		Does the worker need to climb?	29.
17.		Can the worker engage in this work only during a part of the year?	30.
18.		Does the worker perform this work at irregular hours?	31.
19.		OPPORTUNITIES IN THIS JOB: Are there large numbers of workers needed in this job?	32.
20.		Do you know the amount of money a worker earns in this job?	33.

PLEASE GO BACK OVER EACH OF THESE ITEMS AND RESPOND TO PLANS MADE IN THE RIGHT HAND COLUMN

APPENDIX A-2

OCCUPATIONAL ASPIRATION SCALE

NAME _____ CHECK ONE: BOY () GIRL ()

THIS SET OF QUESTIONS CONCERNS YOUR INTEREST IN DIFFERENT KINDS OF JOBS. THERE ARE EIGHT QUESTIONS. EACH ONE ASKS YOU TO CHOOSE ONE JOB OUT OF TEN PRESENTED.

READ EACH QUESTION CAREFULLY. THEY ARE ALL DIFFERENT.

ANSWER EACH ONE THE BEST YOU CAN. DON'T OMIT ANY.

Question 1. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?

- 1.1 _____ Lawyer
- 1.2 _____ Welfare Worker for a city government
- 1.3 _____ United States representative in Congress
- 1.4 _____ Corporal in the Army
- 1.5 _____ United States Supreme Court Justice
- 1.6 _____ Night watchman
- 1.7 _____ Sociologist
- 1.8 _____ Policeman
- 1.9 _____ County agricultural agent
- 1.10 _____ Filling station attendant

Question 2. Of the jobs listed in this question, which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER?

- 2.1 _____ Member of the board of directors of a large corporation
- 2.2 _____ Undertaker
- 2.3 _____ Banker
- 2.4 _____ Machine operator in a factory
- 2.5 _____ Physician (doctor)
- 2.6 _____ Clothes presser in a laundry
- 2.7 _____ Accountant for a large business
- 2.8 _____ Railroad conductor
- 2.9 _____ Railroad engineer
- 2.10 _____ Singer in a nightclub

Question 3. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?

- 3.1 _____ Nuclear Physicist
- 3.2 _____ Reporter for a daily newspaper
- 3.3 _____ County judge

- 3.4 _____ Barber
- 3.5 _____ State governor
- 3.6 _____ Soda fountain clerk
- 3.7 _____ Biologist
- 3.8 _____ Mail carrier
- 3.9 _____ Official of an international labor union
- 3.10 _____ Farm hand

Question 4. Of the jobs listed in this question, which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER?

- 4.1 _____ Psychologist
- 4.2 _____ Manager of a small store in a city
- 4.3 _____ Head of a department in state government
- 4.4 _____ Clerk in a store
- 4.5 _____ Cabinet member in the federal government
- 4.6 _____ Janitor
- 4.7 _____ Musician in a symphony
- 4.8 _____ Carpenter
- 4.9 _____ Radio announcer
- 4.10 _____ Coal miner

Question 5. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?

- 5.1 _____ Civil engineer
- 5.2 _____ Bookkeeper
- 5.3 _____ Minister or Priest
- 5.4 _____ Streetcar motorman or city bus driver
- 5.5 _____ Diplomat in the United States Foreign Service
- 5.6 _____ Sharecropper (one who owns no livestock or farm machinery, and does not manage the farm)
- 5.7 _____ Author of novels
- 5.8 _____ Plumber
- 5.9 _____ Newspaper columnist
- 5.10 _____ Taxi driver

Question 6. Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished?

- 6.1 _____ Airline pilot
- 6.2 _____ Insurance Agent
- 6.3 _____ Architect
- 6.4 _____ Milk route man
- 6.5 _____ Mayor of a large city
- 6.6 _____ Garbage collector
- 6.7 _____ Captain in the Army
- 6.8 _____ Garage mechanic
- 6.9 _____ Owner-operator of a printing shop
- 6.10 _____ Railroad section hand

Question 7. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?

- 7.1 _____ Artist who paints pictures that are exhibited in galleries
- 7.2 _____ Traveling salesman for a wholesale concern
- 7.3 _____ Chemist
- 7.4 _____ Truck driver
- 7.5 _____ College professor
- 7.6 _____ Street sweeper
- 7.7 _____ Building contractor
- 7.8 _____ Local official of a labor union
- 7.9 _____ Electrician
- 7.10 _____ Restaurant waiter

Question 8. Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished.

- 8.1 _____ Owner of a factory that employs about 100 people
- 8.2 _____ Playground director
- 8.3 _____ Dentist
- 8.4 _____ Lumberjack
- 8.5 _____ Scientist
- 8.6 _____ Shoeshiner
- 8.7 _____ Public school teacher
- 8.8 _____ Owner-operator of a lunch stand
- 8.9 _____ Trained machinist
- 8.10 _____ Dock worker

APPENDIX A-3
VOCATIONAL VALUES INVENTORY
1958

Developed by Leland Johnson, Stanley Singer, Valley Psychological Consultants, Sherman Oaks, California, and Buford Stefflre. Michigan State University, East Lansing, Michigan. Reproduced by permission.

This inventory is given to help you answer the question, "What do I really want from a job?" Remember, different people will have different answers to this question. There are no right answers and no wrong answers, and therefore, your score will be neither good nor bad, neither high nor low. However, your score, if you follow the directions properly, should help you understand yourself better and understand the meaning that work has for you. This may help you to select an occupation which will satisfy you. In this inventory, you must make a choice between each pair of items. In some cases it will be hard to make a choice between the items because you will want to choose both items or neither. But, remember, you must make a choice. Work as rapidly as you can, and do not consider any one item too long.

DO NOT MARK IN THIS BOOKLET
USE THE ANSWER SHEET PROVIDED

1--You are planning your career and must make a decision about the kind of occupation for which you will train. The occupations you are considering are the same in every respect except as noted below. In each case indicate the occupation you would choose by blackening the space between the lines in the column below A or B on the answer sheet.

-
- | | | |
|--------|--|---|
| 1-JF-P | An occupation where you are free to decide how you should do your job. | A |
| | An occupation where you will be looked up to because of your work. | B |
-
- | | | |
|------|---|---|
| 2-CP | An occupation where you will be a leader. | A |
| | An occupation where you will be famous. | B |
-
- | | | |
|------|--|---|
| 3-CS | An occupation where you will make the final decision on important job matters. | A |
| | An occupation where you are assured of a regular income. | B |
-
- | | | |
|--------|--|---|
| 4-JF-A | An occupation where you can work more or less on your own. | A |
| | An occupation which helps others. | B |
-
- | | | |
|------|---|---|
| 5-AM | An occupation that helps people get along well with each other. | A |
| | An occupation where you select a job mainly on the basis of income. | B |
-
- | | | |
|------|--|---|
| 6-PM | An occupation where you will receive recognition because of your work. | A |
| | An occupation that is highly paid. | B |
-

- 7-M-JF An occupation where you may obtain many material possessions. A
- An occupation where you do not have to work under supervision. B
-
- 8-AP An occupation which contributes to the public welfare. A
- An occupation which will allow you to become a well-known person. B
-
- 9-SR-C An occupation which makes use of your talents. A
- An occupation where you supervise others. B
-
- 10-P-SR An occupation where you will be given publicity in newspapers and magazines. A
- An occupation which will absorb your interests. B
-
- 11-SR-A An occupation which you find very interesting. A
- An occupation where you make sacrifices in the interests of others. B
-
- 12-SC An occupation that provides steady employment. A
- An occupation where you are responsible for seeing that others do their work. B
-
- 13-SR-M An occupation where you can make use of your special talents. A
- An occupation where there is a chance of becoming rich. B
-
- 14-S-JF An occupation where regular employment is guaranteed. A
- An occupation where you can control your own working conditions. B

15-A-JF	An occupation that benefits other people.	A
	An occupation where you can set your own work standards.	B
16-MA	An occupation where you can become wealthy.	A
	An occupation where you can help people with their problems.	B
17-JF-C	An occupation where you can decide for yourself what kind of activities you will perform.	A
	An occupation where others will follow your example.	B
18-MC	An occupation that has good financial rewards.	A
	An occupation where you give direction to other people.	B.
19-C-SR	An occupation where you take the lead in solving job problems.	A
	An occupation which allows you to use your best abilities.	B
20-P-JF	An occupation where you do things for which you will be admired.	A
	An occupation where you can come and go as you please.	B
21-CA	An occupation where you can direct others in their work.	A
	An occupation that serves humanity.	B
22-SA	An occupation where your job is secure.	A
	An occupation where you contributed to the good of the community.	B

23-PS	An occupation that gives you prestige.	A
	An occupation that insures year-round employment.	B
24-SR-JF	An occupation which holds your attention.	A
	An occupation where you can determine your own method of working.	B
25-CS	An occupation where you are in charge of the work to be done.	A
	An occupation that provides a moderate but steady income.	B
26-M-SR	An occupation that pays a lot of money.	A
	An occupation which gives you opportunities for self-expression.	B
27-JF-A	An occupation where you can be your own boss.	A
	An occupation that requires devotion to the welfare of others.	B
28-C-JF	An occupation where you tell others what to do.	A
	An occupation that does not require the help of others.	B
29-SR-S	An occupation where you can do creative work.	A
	An occupation where people do not lose their jobs even during depressions.	B
30-MP	An occupation where you can become wealthy.	A
	An occupation which may give you high honors.	B

31-M-JP An occupation where you are highly paid. A

An occupation where you decide when and where
you will do your work. B

II--You must make a choice between two jobs which have been offered you. They are the same in every respect except as noted below. In each case indicate the job you would choose by blackening the space between the lines in the column below A or B on the answer sheet.

32-CM A job where you can persuade other workers to do things in a certain way. A

A job where you can achieve financial
independence. B

33-A-SR A job that contributes to the welfare of people. A

A job where you perform activities for which you
have a special preference. B

34-AC A job where the work is socially useful. A

A job where you can make decisions on how the
work is to be done. B

35-PC A job where you will be recognized for your
accomplishments. A

A job where you can reward others for doing
their work well. B

36-AS A job where you help others. A

A job that has a good pension plan. B

37-SP A job which you are sure of keeping. A

A job where you are given awards in recogni-
tion of your work. B

38-JF-SR	A job where you can control how hard you work.	A
	A job in which the activities are especially satisfying.	B
39-SM	A job where permanent employment is guaranteed.	A
	A job where you may acquire considerable personal wealth.	B
40-JF-S	A job where you can decide for yourself what you do each day.	A
	A job where there will be no "lay offs."	B
41-AM	A job that provides needed services to the people of the community.	A
	A job that is highly profitable.	B
42-S-SR	A job which provides continuous employment.	A
	A job where you can be enthusiastic about what you are doing.	B
43-PM	A job where you are known for outstanding accomplishments in your field of work.	A
	A job that is very well paid.	B
44-PA	A job where others are favorably impressed by the work you are doing.	A
	A job where you can help people who are less fortunate than yourself.	B
45-MC	A job where you can accumulate property as a result of your high earnings.	A
	A job where you decide who is going to be promoted.	B

46-JF-P	A job where people seldom tell you what to do.	A
	A job where you can make a name for yourself.	B
47-SA	A job which you can keep until retirement.	A
	A job where you can "do good" for others.	B
48-PS	A job where you will be admired because of the work you do.	A
	A job with good retirement provisions.	B
49-SC	A job where you cannot be discharged.	A
	A job where you supervise others.	B
50-MS	A job where you can make large profits.	A
	A job where the nature of the work is clear for years ahead.	B
51-SR-M	A job which requires your creative thinking.	A
	A job where you have a big share in company earnings.	B
52-S-JF	A job where you work for a regular salary.	A
	A job where you are free to alter your work routine.	B
53-M-A	A job that offers a maximum financial return.	A
	A job that contributes to civic betterment.	B
54-SR-S	A job where you can do things for which you have a special liking.	A
	A job where you never have to worry about being fired.	B

- 55-JF-M A job where you can decide when you will start
and when you will quit work. A
- A job that may pay big cash bonuses. B

III--You are working on a job where you have been given a chance to select which of two activities you will do. These two activities are exactly the same in every way except for the differences noted below. In each case, indicate which activity you would choose by blackening the space between the lines in the column below A or B on the answer sheet.

-
- 56-SR-C An activity permitting you to express your
feelings. A
- An activity concerned with organizing and
assigning the jobs to be done. B
-

- 57-SR-P An activity using your special knowledge and
skill. A
- An activity which will make you highly
respected. B
-

- 58-SR-A An activity which carries out your own ideas. A
- An activity that helps your fellow man. B
-

- 59-P-JF An activity which will make your opinion sought
and valued. A
- An activity which allows you to control your
working hours. B
-

- 60-CA An activity involving planning work for others
to do. A
- An activity which helps other people. B

61-CP	An activity by which you influence the way people do their work.	A
	An activity which will make you well-known.	B
62-AS	An activity which can assist those less fortunate than you.	A
	An activity which makes your job secure.	B
63-SP	An activity which assures you of working all year round.	A
	An activity which will make you associated with someone who is famous in your own line of work.	B
64-SR-JF	An activity which gives you opportunity for self-expression.	A
	An activity which you perform independently.	B
65-SM	An activity which has an outlook for continued steady employment.	A
	An activity which will pay you good money.	B
66-JF-S	An activity which permits you to take days off whenever you wish.	A
	An activity which protects you from lay-offs.	B
67-A-JF	An activity which helps others solve their problems.	A
	An activity in which there are a few controls over what you do.	B
68-M-JF	An activity that offers good financial rewards.	A
	An activity that is noted for the independent nature of the work.	B

69-AP	An activity which promotes the general welfare of society.	A
	An activity which will make your name well-known.	B
70-C-SR	An activity where you can manage the affairs of an organization.	A
	An activity which uses your highly specialized talents.	B
71-P-SR	An activity which will make you famous.	A
	An activity at which you are expert.	B
72-A-SR	An activity that assists charitable causes.	A
	An activity where your own personal tastes are valued.	B
73-JF-C	An activity where you are the sole judge of your work.	A
	An activity where you are in control of a group of workers.	B
74-S-SR	An activity where the work is stable from year to year.	A
	An activity which lets you express your opinions and ideas.	B
75-MP	An activity which will make you rich.	A
	An activity which will give you a national reputation.	B
76-PA	An activity which may give you high honors.	A
	An activity where you can dedicate your life to helping others.	B

I would rather be: (Mark column A if your answer is yes; Mark column B if your answer is no.)

77-CM	The boss than the one who makes the most money.	Yes	No
78-SR-P	Talented than famous.	Yes	No
79-AC	Of service to others than be the boss.	Yes	No
80-PC	Well-known than be the boss.	Yes	No
81-JF-SR	Free from supervision than skillful.	Yes	No
82-MS	Well-to-do than be sure of keeping my job.	Yes	No
83-M-SR	The one who makes the most money than the one who does his work best.	Yes	No
84-C-JF	Be the leader than be independent.	Yes	No

APPENDIX A-4

VOCATIONAL VALUES ANSWER SHEET

NAME _____ SCHOOL _____

Blacken the space between the lines that corresponds to your chosen answer (A or B).

	A	B		A	B
1.	//	//	43.	//	//
2.	//	//	44.	//	//
3.	//	//	45.	//	//
4.	//	//	46.	//	//
5.	//	//	47.	//	//
6.	//	//	48.	//	//
7.	//	//	49.	//	//
8.	//	//	50.	//	//
9.	//	//	51.	//	//
10.	//	//	52.	//	//
11.	//	//	53.	//	//
12.	//	//	54.	//	//
13.	//	//	55.	//	//
14.	//	//	56.	//	//
15.	//	//	57.	//	//
16.	//	//	58.	//	//
17.	//	//	59.	//	//
18.	//	//	60.	//	//
19.	//	//	61.	//	//
20.	//	//	62.	//	//
21.	//	//	63.	//	//
22.	//	//	64.	//	//
23.	//	//	65.	//	//
24.	//	//	66.	//	//
25.	//	//	67.	//	//
26.	//	//	68.	//	//
27.	//	//	69.	//	//
28.	//	//	70.	//	//
29.	//	//	71.	//	//
30.	//	//	72.	//	//
31.	//	//	73.	//	//
32.	//	//	74.	//	//
33.	//	//	75.	//	//
34.	//	//	76.	//	//
35.	//	//	77.	//	//
36.	//	//	78.	//	//
37.	//	//	79.	//	//
38.	//	//	80.	//	//
39.	//	//	81.	//	//
40.	//	//	82.	//	//
41.	//	//	83.	//	//
42.	//	//	84.	//	//

**DO NOT WRITE IN
THIS SPACE**

A	_____
C	_____
JF	_____
M	_____
P	_____
S	_____
SR	_____

SOCIAL PARTICIPATION SCALE

NAME _____

SCHOOL

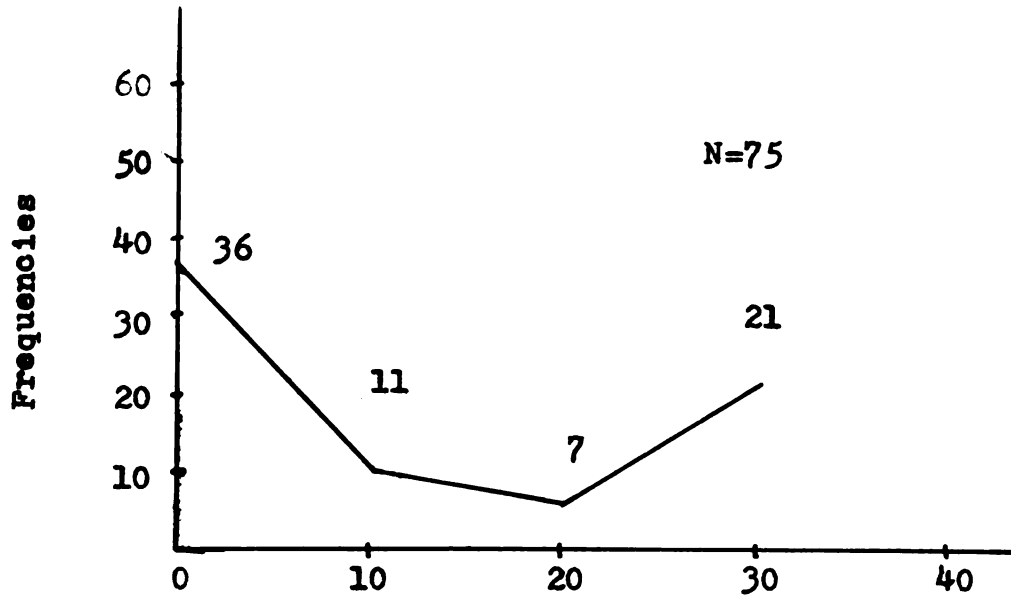
List by name the school, church and community clubs and organizations with which you are now connected. A club or organization means some active group of people such as a church or Sunday School. 4-H Club or Future Homemakers of America.

Indicate by a check mark (✓) if the organization you listed is of the in-school or out-of-school type. Check only one column, not both.

Place a check mark (✓) in any or all of the remaining four columns that describe your participation in the club or organization you listed.

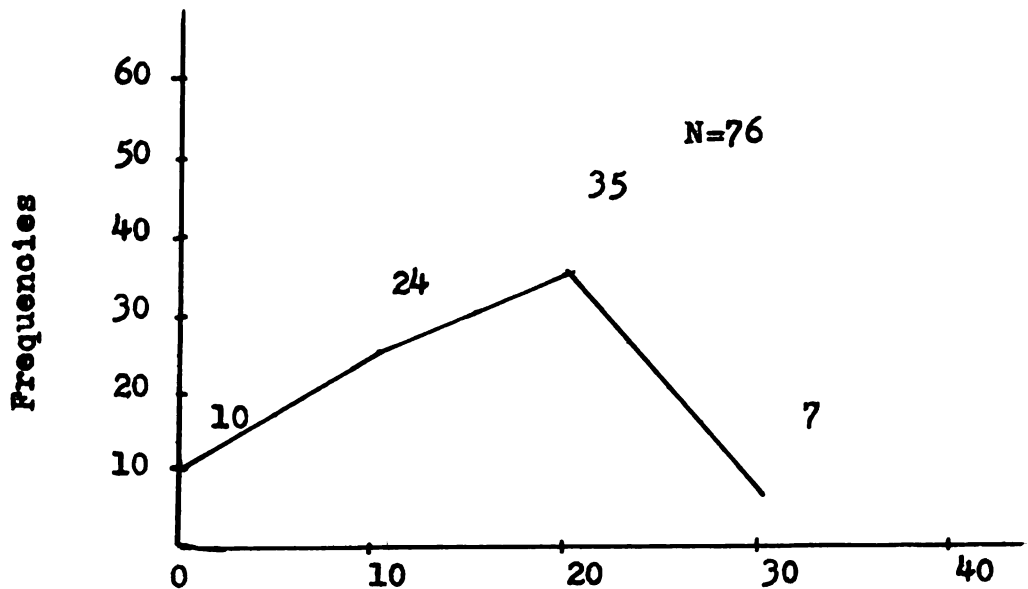
[illegible]

APPENDIX B-1



Distribution of raw scores: "awareness of present-future relationships" (Onaway).

APPENDIX B-2



Distribution of raw scores: "use of resources in gathering information about self and future" (Crystal Falls).

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