

CAREER MATURITY OF GRADE NINE STUDENTS IN BRITISH COLUMBIA:

A RURAL/URBAN COMPARISON

by

GEORGE JOHN TESLA

B.A., University of British Columbia, 1967

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

Department of Counselling Psychology

We accept this thesis as conforming  
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

June, 1978

© George John Tesla, 1978

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study.

I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Counselling Psychology

The University of British Columbia  
2075 Wesbrook Place  
Vancouver, Canada  
V6T 1W5

Date / March 1978

## ABSTRACT

The investigation studied the comparative effects of geographical location and gender on career maturity and knowledge of occupational information of grade nine students in British Columbia. In addition, the investigation studied the relationship of occupational information to career maturity. One hundred and fifty-two academic students from varying socioeconomic backgrounds were selected for the study. The subjects, none of whom had access to any form of career education program, were drawn from existing classes from two rural high schools and one urban junior high school. The schools in question were selected by district school superintendents, and the classes were selected by local school authorities. In all, eighty-eight rural students (thirty-six male and fifty-two female) and sixty-four urban students (thirty male and thirty-four female) participated in the study.

A review of literature related to career maturity revealed mixed and inconclusive results, particularly relating to the variables of location and sex. Studies have shown that a significant positive relationship exists between knowledge of occupational information and career maturity.

It was hypothesized that there would be no statistically significant difference in career maturity between urban and rural students nor between males and females, as measured by the Career Maturity Inventory, Attitude Scale. It was also hypothesized that there would be no statistically significant difference in knowledge of occupational information between rural and urban students nor between males and females, as measured by the Career Maturity Inventory, Occupational Information test. The results of the study supported these research hypotheses. In addition, it was hypothesized that there would be no statistically

significant relationship between occupational information and career maturity. The results of this study revealed a Pearson  $r$  of .40 between the two variables, and this hypothesis was rejected.

Reasons postulated for failure to reject the first four hypotheses include the following: (a) Trained counsellors were employed in the rural schools, whereas none existed in the urban school. (b) Recent sociological developments in the sphere of women's liberation movements have greatly increased the variety of occupations available to women. This in turn may have increased the apprehension of females to make occupational choices. (c) Vast improvements in the communications media and transportation have virtually eliminated the factor of isolation for rural students, resulting in reduction of differences between rural and urban experiences and acquisition of occupational information.

A posteriori comparison of the sample's mean scores with the standardization norms on both measures revealed that, while British Columbia students scored lower in career maturity, they scored significantly higher in knowledge of occupational information. This comparison tends to indicate that while students may possess adequate occupational information, they may not possess sufficient career maturity to make appropriate career choices without concurrent help in internalizing that information.

## TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION TO THE STUDY . . . . .	1
	Nature of the Problem . . . . .	4
	Purpose of the Study . . . . .	6
	Definition of Terms . . . . .	7
	Vocation/Career . . . . .	7
	Career Maturity . . . . .	7
	Occupational Information . . . . .	8
	Urban . . . . .	8
	Rural . . . . .	8
	Implications of the Study . . . . .	9
	Limitations of the Study . . . . .	10
	Overview of the Study . . . . .	11
II.	REVIEW OF LITERATURE . . . . .	12
	Developmental Theories of Vocational Choice . . . . .	12
	History of Developmental Theories . . . . .	12
	Major Theorists . . . . .	13
	Ginzberg . . . . .	13
	Super . . . . .	15
	Tiedeman . . . . .	18
	Other Developmental Theorists . . . . .	21
	Career Maturity . . . . .	22
	Major Studies Related to Career Maturity . . . . .	25
	Career Pattern Study . . . . .	25
	Readiness for Vocational Planning . . . . .	27
	Vocational Development Project . . . . .	28
	Variables Influencing Career Maturity . . . . .	31

CHAPTER	PAGE
Personality . . . . .	32
Intelligence . . . . .	32
Self-Concept . . . . .	32
Socioeconomic Status . . . . .	33
Ethnicity . . . . .	33
School Curriculum . . . . .	34
Educational Attainment . . . . .	34
Counselling . . . . .	35
Sex . . . . .	35
Location . . . . .	35
Formulation of the Study . . . . .	36
Hypotheses . . . . .	36
III. METHODOLOGY OF THE THESIS RESEARCH . . . . .	39
Overview . . . . .	39
Research Design . . . . .	39
Sample . . . . .	39
Demographic Study of Schools . . . . .	40
Testing Instruments . . . . .	41
Career Maturity Inventory Attitude Scale . . . . .	42
Career Maturity Inventory Competence Test . . . . .	42
Student Questionnaire . . . . .	44
Testing and Data Collection . . . . .	44
Data Analysis . . . . .	44
IV. RESULTS AND DISCUSSION . . . . .	46
Comparison of Urban and Rural Career Maturity . . . . .	46
Comparison of Urban and Rural Occupational Information . . . . .	48

CHAPTER	PAGE
Comparison of Male and Female Career Maturity . . . . .	50
Comparison of Male and Female Occupational Information .	52
Relationship of Career Maturity and Occupational Information . . . . .	52
Analysis of Responses to Items in the CMI Occupation Information Test . . . . .	55
Comparison with Norms . . . . .	55
V. SUMMARY AND CONCLUSIONS . . . . .	60
Overview and Summary of Results . . . . .	60
Implications of the Study . . . . .	63
Suggestions for Future Research . . . . .	67
REFERENCES . . . . .	69
APPENDIX A. A MODEL OF CAREER MATURITY IN ADOLESCENCE . .	76
APPENDIX B. SCHOOL DISTRICTS WITH OVER 15% OF LABOUR FORCE INVOLVED IN PRIMARY INDUSTRY . . . . .	77
APPENDIX C. STUDENT QUESTIONNAIRE . . . . .	78
APPENDIX D. SAMPLE OF LETTER OF REQUEST TO SCHOOL DISTRICT SUPERINTENDENTS . . . . .	79
APPENDIX E. RESPONSE HIGHLIGHTS OF STUDENT QUESTIONNAIRE	81

## LIST OF TABLES

Tables	Description	Page
I	MEANS, VARIANCES, STANDARD DEVIATIONS, AND ANALYSIS OF VARIANCE FOR THE CAREER MATURITY INVENTORY, ATTITUDE SCALE . . . . .	47
II	MEANS, VARIANCES, STANDARD DEVIATIONS, AND ANALYSIS OF VARIANCE FOR THE CAREER MATURITY INVENTORY, OCCUPATIONAL INFORMATION TEST. . . . .	49
III	MEANS, VARIANCES, AND STANDARD DEVIATIONS BY GENDER AND LOCATION FOR THE CAREER MATURITY INVENTORY, ATTITUDE SCALE . . . . .	51
IV	MEANS, VARIANCES, AND STANDARD DEVIATIONS BY GENDER AND LOCATION FOR THE CAREER MATURITY INVENTORY OCCUPATIONAL INFORMATION TEST . . . . .	53
V	PEARSON R CORRELATIONS BETWEEN THE ATTITUDE SCALE AND OCCUPATIONAL INFORMATION TEST OF THE CAREER MATURITY INVENTORY . . . . .	54
VI	COMPARISON OF CORRECT RESPONSES BY GENDER AND LOCATION FOR THE CAREER MATURITY INVENTORY OCCUPATIONAL INFORMATION TEST . . . . .	56
VII	COMPARISON WITH GRADE NINE NORMS FOR THE CAREER MATURITY INVENTORY ATTITUDE SCALE . . . . .	57
VIII	COMPARISON WITH OTHER GRADE NORMS FOR THE CAREER MATURITY INVENTORY OCCUPATIONAL INFORMATION TEST . . . . .	59

ACKNOWLEDGEMENTS

I wish to express my thanks to those people who helped make completion of the research project and thesis possible.

My chairman, Dr. William Borgen, for his encouragement and assistance.

The thesis committee, Dr. Carl Chiko, and Dr. Harold Ratzlaff for their constructive suggestions.

Dr. Todd Rogers and Mr. Frank Ho for their assistance in computer work.

Joan Peters for the excellent job done in typing the thesis.

Rose and Christopher for their love and encouragement.

w i t h   l o v e   t o   R o s e

a n d   C h r i s t o p h e r

## CHAPTER I

### Introduction to the Study

Since the turn of the century the concept of vocational or career development has undergone a great deal of change. Theories of individual developmental psychology presented by such well known theorists as Maslow (1954) and Erikson (1963) have contributed greatly to the understanding of career development, particularly in the area of career choice. Former simplistic views of career choice, although perhaps adequate in the past, are no longer acceptable in our highly complex, mobile society. Career counsellors and psychologists who attempted to match a person's overt aptitudes and characteristics with a job now view the selection of a career in a radically different way. All facets of an individual's existence must be understood, for a career encompasses not only the work a person does, but his total lifestyle.

In the past, career choice was deemed to consist of a decision taken at a point in time. Little attention was given to the developmental nature of this concept. Current theorists such as Ginzburg, Super, Crites, and others emphasize the fact that career choice is a developmental process in which a person integrates the sum of his experiences. Crites (1969) conceptualizes the selection of an occupation as being composed of a series of events or acts which occur over a considerable period of time. The process usually encompasses the ten years from the end of childhood to the beginning of youth and largely terminates when a person enters an occupation. Career choice development is essentially continuous and largely irreversible.

The importance of properly sequenced and orderly career choice development, particularly at the junior high school level, has been

emphasized by many researchers. Results of poor career choice development are evidenced by the large number of adults who are inherently dissatisfied with their work and their lifestyles. Those persons in many cases must seek professional assistance in the resolution of career crises. As mentioned previously the choice process generally encompasses adolescence and young adulthood. In order to underline the fact that some people make more realistic and satisfying career choices than others, Super (1957) introduced the concept of vocational maturity. Crites (1965) further expanded this concept and introduced standardized instruments to quantify career maturity and rate people on this developmental continuum. Chapter II will deal further with the historical development of this concept and related literature.

Decisions with respect to course and curriculum choice which are forced on children at the junior high school level influence future educational and vocational choices (Super and Overstreet, 1960). It is generally accepted that junior high school aged students have not been prepared to make such decisions (Bartlett, 1971). Even at the senior high school level, approximately 30% of students are undecided about their future occupations; a similar percentage are unrealistic in their choices (Crites, 1969). Westbrook (1976) reported on a study of ninth grade students that those students making appropriate (defined as a high degree of agreement between an individual's general ability level, interest level in different fields of work, and the individual's vocational choice) career choices were found to be more career mature than those who did not.

Campbell and Parsons (1972) pointed out that the junior high school years are clearly a time of significance, and have major consequences for the students' future plans. Erikson (1963) has indicated that the

junior high school years are the beginning of development of a more specific identity which in turn influences vocational identity and subsequent development. The most critical vocational behavior at the junior high school level, according to Super and Overstreet (1960) and confirmed by Gribbons and Lohnes (1968), is the readiness for vocational planning and looking ahead. Those students who display mature vocational behavior inevitably cope successfully with vocational tasks as young adults. That is not to say that they have to implement career choices at that time, but they must possess appropriate attitudinal maturity for this stage of development. The student must be aware that he will eventually be forced to make a decision concerning his future and should start exploring occupations, asking questions, and planning ahead.

Super and Overstreet (1960) state that grade nine students are at that stage of personal development when they are willing to accept responsibility for making their own plans and choices. However, studies have shown that the typical ninth-grader does not understand himself nor his potentialities as well as he should, and question his ability to choose between levels and fields of endeavor as reflected in the curricular alternatives open to him. Super and Overstreet add that at this stage of development when adolescents are beginning to be called upon to make a series of prevocational and vocational choices, they need experiences which help them to develop better self-understanding and self-acceptance. They also need a general framework of occupational information as well as the knowledge of how to fit into that framework.

In spite of the overwhelming evidence that properly sequenced career development is crucial in the junior high school years, counselling has not been given the required emphasis. It is the opinion of the author

that school counselling that does occur, is that of a crisis nature. Career exploration programs and the dispensing of occupational information have not yet been developed to a sophisticated level; career counselling has the appearance of a reluctant band aid treatment. Most of the students that the researcher has been in contact with, had selected courses and curricula with little or no prior discussion with either parents, teachers, or counsellors. Dissatisfaction with school, boredom, and future career floundering are largely the inevitable results.

As Miller (1964) has pointed out, the junior high school years show early manifestations of potential dropout behaviors such as alienation toward school, poor academic performance, delinquency, and general behavior problems. Frequently those who are handicapped in their educational-vocational development represent future national problems. A large percentage of those unemployed are between the ages of 16 and 24. Those individuals, for the greater part, are not in possession of marketable skills, perhaps a result of lack of planning and counselling during their early high school years.

Students at the exploration stage of development encompass the whole spectrum of career maturity. Some are able to make meaningful preliminary decisions, particularly those who were raised in culturally and educationally stimulating environments. Others, perhaps the majority, are not prepared to make such decisions.

#### Nature of the Problem

It appears then, that there is evidence to suggest that students at the junior high school level who are more career mature than their peers are better able to make realistic and thoughtful occupational decisions.

The literature (reviewed in detail in Chapter II) reveals a plethora

of variables that are predictors of career maturity. Studies of the relationships of variables such as intelligence, socioeconomic status, geographical location, sex, personality, self-concept, ethnic origin, and school curriculum, have produced mixed and inconclusive results.

Of particular interest to this study is the comparison of the career maturity of urban and rural school children. A review of literature has shown that the effect of geographical location has not been extensively studied. Super and Overstreet's (1960) investigation revealed no statistically significant difference in vocational maturity scores of rural and urban students. However, their rural sample included students who were daily commuters to an urban school, and they did not appear to have been subjected to the isolation, lack of information, lack of a variety of role models generally associated with rural students. Other studies (Asbury, 1968; Campbell and Parsons, 1972) focused primarily on the socioeconomic differences. They compared rural disadvantaged students with urban non-disadvantaged students. No comparative urban/rural studies involving a cross-section of socioeconomic levels have been performed, to the best knowledge of the researcher.

Similarly, the question of sex differences in regard to career maturity has not been resolved. Although Crites (1976), in his recent longitudinal investigation, found a significant difference between boys and girls on this dimension, he does not appear to have given consideration to the very recent social changes which can be attributed to women's arguments for equal opportunity in the workplace. The resultant increase in occupations open to women may have altered the status quo.

Of equal interest to this study is the part that knowledge of

occupations plays in the level of career maturity. Crites (1969) states that occupational information is one of the indices of career maturity. In 1963, Nelson reported that children who showed more knowledge about occupations tended to be from higher socioeconomic levels, in the higher grade levels, and from urban environments. Personal contact as a method of learning seemed to have produced the greatest depth of understanding about occupations. Wehrly (1973) noted that since learning about occupations is gained through personal contact, urban children would have greater opportunities to acquire this knowledge. Vicarious learning through books and the media is also a source of information. But as Wehrly (1973), Lifton (1959) and Arbuckle (1963) point out, these sources for the greater part, present an unreal and distorted view of occupations. In view of the tremendous proliferation of cable television which now offers as great a variety to rural communities as to urban communities, it is not fully known to what extent this phenomenon has altered the level of occupational knowledge in diverse geographical areas.

#### Purpose of the Study

The level of career maturity of an individual is a useful predictor of success in making a realistic and appropriate occupational choice. It is also evident that there exist incomplete and inconclusive data on many of the variables predicting career maturity, particularly geographical location and sex. Few, if any investigations have been conducted in Canada. To this end, a study was formulated to compare the career maturity of urban, rural, male, and female grade nine students in British Columbia. Specifically three major objectives of the research can be outlined: (a) to compare the level of career maturity of rural and urban grade nine students, (b) to compare the level of career

maturity of female and male students within and across urban and rural environments, and (c) to investigate the relationship of occupational information, the level of career maturity, and the effect of geographical location on occupational information.

### Definition of Terms

In the previous sections, several terms have been mentioned whose definition should facilitate understanding of the nature of the study. These definitions follow.

#### Vocation/Career

Until recently the traditional terms "vocation" and "vocational" have been used quite extensively in literature. However, the specialized meanings commonly associated with these terms (such as job, profession) had a tendency to minimize the process aspect of human development. Thus the term "career" has been given recent prominence. Tolbert (1974) provides an acceptable definition of both terms: Career refers to the succession of occupations in which one engages in a lifetime, whereas vocation indicates a specific work role. The term development itself indicates evolvement and change due to various changeable economic, social, and psychological conditions. In view of the current usage, the study will employ the term career unless referring specifically to studies in which the term vocation(al) has been used.

#### Career Maturity

This construct has been defined by Crites (1969) as referring to the maturity of an individual's behavior as indicated by the similarity between his behavior and that of the oldest individuals in his developmental stage. In this study, it is operationally defined in terms of (a) Attitudes and (b) Competencies. Attitudinal measures include

such clusters as (a) Involvement in the choice process, (b) Orientation towards work, (c) Independence in decision-making, (d) Preference for choice factors, and (e) Conceptions of choice process. The Competency dimension is made up of those cognitive or ego functions which involve such processes as problem-solving in decision-making, planning, knowledge of occupational information, self-appraisal, and goal selection. Research has shown that career maturity increases with age and grade.

### Occupational Information

Hoppock (1967) defines occupational information as meaning any and all kinds of information regarding any position, job, or occupation, provided that the information is potentially useful to a person who is choosing an occupation.

### Exploration Stage

The Exploration stage of development is one of four life stages identified by Super (1957). It is characterized by self-examination, role try-out, occupational exploration in school, leisure activities, and part-time work. This stage begins approximately at age 15 and terminates approximately at age 24. It is followed by the Establishment stage.

### Urban

For the purposes of this study, urban will be considered to be a densely populated, incorporated community of more than 10,000 population and possessing a diverse industrial base. Less than 15% of the labour force is employed in primary industries.

### Rural

There appear to be no adequate definitions of the term "rural" in literature. The definition of rural in census literature is equally confusing. Rural has different meanings when viewed historically,

statistically, or philosophically (Warren, 1977). For the purposes of this study, a definition of rural has been formulated based on two criteria: 1. Percentage of the labour force involved in primary industries such as mining, logging, fishing, and agriculture. 2. Ease of accessibility to a large urban centre. The percentages of the labour force in the various school districts in British Columbia involved in primary industries ranges from a high of 33% to a low of 1.7%. From a knowledge of British Columbia geography and for practical considerations, the researcher chose a figure of 15% (labour force in primary industry) to differentiate rural from urban. Appendix B, page 77 enumerates B.C. School Districts with 15% or more of the labour force engaged in primary industry.

The criterion of accessibility to a large urban centre has been decided subjectively. It was assumed that few people would be willing to commute to work more than 70 miles. Thus the majority of the population would be employed in a rural environment.

For the purposes of this study then, rural is defined as having 15% or more of its population engaged in primary industries and being more than 70 miles from a large urban centre.

### Implications of the Study

If the study indicates that the level of career maturity of urban students does not differ significantly from that of rural students, this would indicate that factors other than geographical location have an important effect, since the majority of research studies suggest that the career maturity of urban students should be greater than that of rural students.

If, contrary to the majority of studies, the female grade nine

students are not more career mature than the males, it may be assumed that recent social changes may have played a part.

If the results show that a positive relationship exists between occupational information and career maturity, it may be assumed that improved and expanded occupational literature in elementary grades and in junior high school would significantly improve the students' ability to choose appropriate and realistic courses and curricula.

In conclusion, if the measures used to quantify career maturity prove to be useful, these measures could be effectively used in diagnosing and assessing counselling requirements of students at the early exploratory stage of career development.

#### Limitations of the Study

1. Only grade nine students were employed in the study, which makes generalization to other groups somewhat hazardous.

2. Only students enrolled in an academically as opposed to a vocationally oriented curriculum were employed, consequently generalization to students enrolled in other types of curricula would be hazardous.

3. The students in the study were drawn from schools in the Greater Vancouver area and the Southern Interior of British Columbia, making the study specific to the areas involved. Generalization to the whole province should be possible but would require further investigation.

4. The students in this sample were not exposed to career exploration programs. Consequently, generalizations from this study can only be extended to the grade nine school population which has not been exposed to such programs.

### Overview of the Study

The description of the study just outlined progresses as follows. Chapter II contains a description and historical rendition of theories of career development and a review of literature related to career maturity. It concludes with hypotheses resulting from the review of literature. A discussion of the methodology employed in the study follows. The thesis concludes with a presentation of the results of the study with a discussion of the implications of the results, and suggestions for further research.

## CHAPTER II

### Review of Literature Related to Career Maturity

The purpose of this chapter is to present the evolution of developmental theories of career choice. It concludes with a summary of literature related to career maturity and hypotheses derived from this literature.

### Developmental Theories of Vocational Choice

Theories of career choice focus on a variety of aspects of human development. Herr and Cramer (1972) have classified them into Trait-and-Factor or Actuarial, Decision Theory, Sociological emphases, Psychological emphases, and Developmental emphases. Tolbert (1974) has classified the theories into (a) Developmental, (b) Needs, (c) Psychoanalytical, (d) Sociological, (e) Decision-Making and Existential. While all these theories are not mutually exclusive, some foster particular emphases as evidenced by the classification terminology. Developmental theories, for example, focus on developmental states, tasks or phases, typically as aspects of a life-long process. An important aspect of this theoretical approach is the consideration that a human being is constantly evolving in psychosocial and career areas. All phases of his past, present and future life must be considered. Of equal importance is the influence of the environment on his development. Since this study is based on aspects of developmental theories, it is considered worthwhile to look at the history, major theories and their theorists, and various major and minor studies associated with developmental theories of vocational choice.

### History of Developmental Theories

That vocational choice is a developmental process rather than a

choice made at a point in time was first postulated by Beuhler (1933) who delineated life stages according to behavioral characteristics at ages at which these behaviors were most prominent. She postulated several stages in the choice process. Beuhler plotted life stages along an age continuum from dependence at an early age to later stages marked by independence which increases with increasing economic self-sufficiency.

Ginzberg and associates (1951) have been credited by many researchers for having brought into focus the fact the vocational psychologists had not developed a sound theoretical base in vocational choice development. Super (1953) agreed with the basis of Ginzberg's criticisms of vocational psychology and vocational psychologists. Very little work had been done in theory construction, vocational counsellors being "busy practitioners anxious to improve their counselling techniques, the research-minded among them devoting what time they can to devising better techniques" (Ginzberg et al, 1951). Ginzberg's criticisms gave a much needed impetus for intensified research in theories of vocational development.

### Major Theorists

The major theorists of the developmental approach are Super, Ginzberg, and Tiedeman. Lesser contributors to the development of this theoretical approach are Beilin, Flanagan, Crites, and Gribbons and Lohnes.

Ginzberg. Ginzberg identified three stages in the development of vocational choice, based on ego functions and emotions. The first stage, termed "fantasy", occurs at about the age of three or four. At this stage occupations are selected by children on the basis of "function pleasure." Little boys are intrigued by bright fire engines or by

television portrayals of cowboys or pirates. Little girls may be intrigued by the same "occupations" or wish to model their mothers or female adult acquaintances.

These choices are products of fantasies, daydreams, and a desire to grow up, rather than expressions based on considerations of reality. By the tenth or eleventh year more realism is brought to bear, perhaps as a result of ability to cope well in school or in various organizations or activities. At this stage the child begins to formulate tentative choices. This stage is named the "tentative" stage and lasts from about ten years of age to graduation from high school at 17 or 18. It is marked by sharpening of time perspectives, a greater awareness of self and the reality barriers to choice. Choices are based on self-image which is not yet firm, and lack of information regarding training and work.

Following the tentative stage is the "realistic" stage, where reality pressures, such as high school graduation and the realization that a decision must be made for the future, are forced on the individual. This is the period (age 17—young adulthood) in which choices are made. Compromises are negotiated between reality factors such as job requirements and educational opportunities, and personal factors. The realistic stage is formed of three sub-stages: (a) Exploration, in which opportunities are investigated for virtually the last time and options are checked out; (b) Crystallization, during which period the individual actually makes a choice while compromising between reality and personal factors; and (c) Specification, where choice is delimited and the individual becomes quite specific while taking steps to implement his decision.

Although during the first postulation of his theory Ginzberg stressed the irreversibility and continuity of the choice-process, he has since revised his position to accommodate the ever quickening changes in economic and social environments of the seventies. "Instead of a more or less final choice in the early or middle twenties, the choice process is coexistive with a person's working life; he may re-open the issue at any time." (Ginzberg, 1972, p. 169)

Super. Donald E. Super is considered to be one of the foremost theorists of vocational development. Drawing upon a wide range of research and theories of development, particularly in the areas of measurement, and occupational adjustment, he published a theory of vocational development in 1953. He focused on four major elements: vocational life stages, vocational maturity, translating the self-concept into a vocational self-concept, and career patterns. Underlying his theory is the concept that an individual's career development is one part of his total development. His comprehensive theory is summarized in a series of ten propositions (Super, 1953, pp. 189-190):

1. People differ in their abilities, interest, and personalities.
2. They are qualified, by virtue of these characteristics, each for a number of occupations.
3. Each of these occupations requires a characteristic pattern of abilities, interests, and personality traits, with tolerances wide enough, however, to allow both some variety of occupations for each individual and some variety of individuals in each occupation.
4. Vocational preferences and competencies, the situations in which people live and work, and hence their self-concepts change with

time and experience (although self-concepts are generally fairly stable from late adolescence until late maturity), making choice and adjustment a continuous process.

5. This process may be summed up in a series of life stages characterized as those of growth, exploration, establishment, maintenance, and decline, and those stages may in turn be subdivided into (a) the fantasy, tentative and realistic phases of the exploration stage, and (b) the trial and stable phases of the establishment stage.

6. The nature of the career pattern (that is, the occupational level and the sequence, frequency, and duration of trial and stable jobs) is determined by the individual's parental socioeconomic level, mental ability, and personality characteristics, and by the opportunities to which he is exposed.

7. Development through the life stages can be guided, partly by facilitating the process of maturation of abilities and interests, and partly by aiding in reality testing and in the development of the self-concept.

8. The process of vocational development is essentially that of developing and implementing a self-concept—it is a compromise process in which the self-concept is a product of the interaction of inherited aptitudes, neural and endocrine make-up, opportunity to play various roles, and evaluation of the extent to which the results of role playing meet with the approval of superiors and fellows.

9. The process of compromise between individual and social factors, between self-concept and reality, is one of role-playing, whether the role is played in fantasy, in the counselling interview, or in real life activities such as school classes, clubs, part-time work, and entry jobs.

10. Work satisfactions and life satisfactions depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits, and values; they depend upon his establishment in a type of work, a work situation, and a way of life in which he can play the kind of role which his growth and exploratory experiences have led him to consider congenial and appropriate.

Following the lead of Ginzberg, Super (1957) modified and further identified four life stages: (1) Growth, (2) Exploration, (3) Establishment, and (4) Decline.

Growth (conception--14 or 15) is characterized by the development of the self-concept through identification with key figures at home and school, dominance of needs and fantasy, the increasing importance of interests and capacities with increasing social participation and reality testing. This stage is further subdivided into three substages: (a) fantasy (4-10), (b) interest (11-12), and (c) capacity (13-14) where abilities are given more weight and job training requirements are considered. The individual is now ready for the next stage.

Exploration (15-24) is characterized by self-examination, role try-out, occupational exploration in school, leisure activities, and part-time work. This stage also consists of three substages: (a) tentative (15-17), (b) transition (18-21), and (c) trial (22-24) where a seemingly appropriate choice is made, a job is obtained and tried out. Successful completion of this stage leads to the Establishment Stage.

Establishment (24-64) is characterized by trial, and some fluctuation and shifting until a suitable niche is found. Energies are directed at building a career. This stage is subdivided into three substages: (a) trial (25-30), (b) stabilization (31-44) and, (c) maintenance (45-64).

Decline (65- ) is characterized by decline in mental and physical powers and work activity changes.

Super (1963) modified and expanded these life stages to include developmental tasks at each stage, particularly at the Exploratory and Establishment stages. In addition to developmental tasks, Super described the attitudes and behaviors associated with these vocational developmental tasks. He suggested that these identifiable stages, tasks, and behaviors can be used in assessing vocational maturity.

Super recognized that very little work had been done in the field of vocational choice development, particularly in the critical Exploration stage of a person's life. He placed more emphasis than Ginzberg on vocational choice development as a continuous process and castigated vocational counsellors and students of human behavior for singularly neglecting this process "as though life were static after the first full time job is found". (Super, 1957). He also cited Ginzberg and associates for falling into the same trap of discontinuity as others in not properly emphasizing that vocational planning is a process, not a moment. Super placed greater emphasis than Ginzberg on the role of family and self-concept in vocational development than on the part played by the ego function and emotions. He characterized adolescence as a period of cultural adaptation during which the adolescent matures chronologically, socially and emotionally. The adolescent makes a transition from childhood to adulthood and engages in a process of exploration of self and the world of work in three primary areas of socialization: home, school, and work.

Tiedeman. D. Tiedeman is another major contributor to the theory of career choice development. Tiedeman (Tiedeman and O'Hara, 1963) refers

to his work as the Career Development System, rather than a theory. Although Tiedeman (1961) credits Super for having provided a clear outline of vocational development and its investigation, he stresses that there remains an omission, that is, an explicit statement of the process of decision in vocational development and "the structure of decision (which) must be specified before investigators of the theory of vocational development can enter new phases" (p. 15). He analyses vocational development by each of several decisions with regard to school, work, and life which a person makes as he matures. He divides the problem of deciding into two periods, (a) a period of anticipation—and (b) a period of implementation or adjustment.

Tiedeman discusses the above two periods of decision-making in terms of differentiation and integration. He considers the locus of career development to be in a presumably continuously differentiating ego identity as it is formed from experience. For a decision to be made, a person must first experience a problem that makes his present situation unsatisfactory. Various factors must be considered and a choice must be made in order to solve the problem. This is the process of differentiation. Once this choice is made, integration takes place, that is, an adjustment of the person with the new situation which resulted from that choice. If integration is not successful, the individual must rethink his choice and reconsider the factors that figured in his decision. Closure results when differentiated parts are properly integrated. The developmental decision-making process of differentiation and integration is formed of several steps which may be repeated throughout one's lifetime.

The phase of anticipation or differentiation consists of four steps

(Tiedeman and O'Hara, 1963):

1. Exploration. Various goals are considered, courses of action are differentiated, practicality and desirability of each is considered.

2. Crystallization. This step is characterized by preparation to move in a specific direction, stabilization of thought, and readiness to invest along desirable lines.

3. Choice. A choice of decision is arrived at. It is dependent on the adequacy of the crystallization process that led to the choice.

4. Clarification. This is the concluding phase of differentiation. Involved is a further analysis of the choice and a review and resolution of doubts and uncertainties. The individual completes his self-concept in the new situation.

Implementation or adjustment is the process of Integration. It is made up of three phases:

1. Induction. In this phase the individual enters the new situation. The organization or new group is superior to the individual and supersedes some of the aspects of self.

2. Reformation. Here the individual starts to reassert himself on the group. He is not simply a recipient of the group's demands. He is accepted.

3. Integration. This occurs when a balance is reached between the individual's need and the group's demands. A new self-concept is attained within the context of the new group.

Although Tiedeman does not specifically delineate life stages in his problem solving schema, he relies heavily on Erikson's (1959) stages of ego identity. These ego development stages seem to parallel the career stages as formulated by Super. Tiedeman and O'Hara (1963) list the

discontinuities at which point decision-making becomes necessary:

1. Selection of part-time employment while in school and afterwards,
2. Selection of school subjects to be taken in junior high school,
3. Selection of subjects to be taken in high school,
4. Selection of college,
5. Selection of program of study at college,
6. Selection of a graduate school,
7. Selection of first full-time position,
8. Selection of another position when dissatisfaction arises over a former position, and
9. Retirement.

Tiedeman has, however, omitted several very relevant choice points since he has obviously dealt with middle or upper class college-bound population. The omissions that effect a large segment of population (the lower middle and lower class) would include such discontinuities as (a) whether to drop out or continue to adopt a trade, (b) whether to get married or continue in school. These discontinuities are obviously only a very few of many, but surely must confront a large number of individuals.

#### Other Developmental Theorists

Beilen (1955) and Samler (1953) are considered by Tolbert (1974) to be two other major contributors to the theory of vocational development. Beilen clarified the distinction between vocational choice and vocational development and suggested that both concepts are needed in the study of vocational behavior. According to Beilin (1955) the distinction between vocational choice and vocational development is temporal in nature; the former refers to a specific action taken at a particular point in time,

whereas the latter refers to an ongoing process. He, like Super and Ginzberg, related general development concepts, such as continuity, irreversibility, and increasing maturity to vocational development theory.

Joseph Samler, a vocational counselling theorist, also emphasized the developmental aspects of vocational behavior and self-concept in the practical interview setting. He stressed the need for occupational information to promote vocational development and choice, as well as the occupational information that conveys the psychological and social climate and pressures of work and the nature of vocational counselling in the future.

### Career Maturity

In conjunction with the process of development of vocational choice (which Super described as a series of choices resulting in the elimination and retention of alternatives narrowing down to an occupational choice) Super brought in the concept of vocational maturity.

One of the necessary and logical outcomes, both explicit and implicit, of the developmental theories of vocational choice is the concept of vocational maturity. As a person grows physiologically and psychosocially, he also matures in the vocational sense, i.e. in the ability to make independent decisions for himself and plan ahead. Super (1957) states that one of the failures of developmental psychology had been the failure to include vocational maturity in the discussion of other types of maturity, emotional, intellectual, physical, and social. He was instrumental in developing the concept of vocational maturity when he found that a definition of it was necessary for a major developmental study, the Career Pattern Study (Super and Overstreet, 1960). He needed

a basis for constructing a yardstick against which to measure vocational development, and as a guide for the selection of data which can be scaled for its measurement. Super defined vocational maturity in terms of types of behavior and used the term to "denote the degree of development, the place reached on the continuum of vocational development from exploration to decline". (Super, 1957, p. 186).

He described vocational maturity as "vocational age", conceptually similar to mental age in early adolescence (as in the measurement of intelligence) but practically different in late adolescence and early adulthood because more distinctions can be made in the development curve at later stages of development. He stated that vocational maturity can also be described both in terms of the gross units of behavior which constitute the life stages, and in terms of smaller and more refined units of behavior manifested in coping with the developmental tasks of a given life stage.

Super (1957) suggested five basic dimensions of vocational maturity. These dimensions primarily referred to behavior of adolescents in the Exploration stage of development. However, as Super pointed out, these dimensions can be used in varying degrees for people in the establishment, and decline stages, particularly when we consider the crisis points in careers throughout a lifetime, such as job changes, disappearance of trades, and post-retirement decisions. These dimensions are as follows:

1. Orientation to vocational choice,
2. Information and Planning,
3. Consistency of vocational preferences,
4. Crystallization of traits, and
5. Wisdom of vocational preferences.

As a result of further research these dimensions of vocational maturity were modified, refined, and parcelled into indices. Super and Overstreet (1960) have outlined these as listed below:

- Dimension I      Orientation to Vocational Choice.
  - IA      Concern with Choice.
  - IB      Use of Resources.
- Dimension II     Information and Planning.
  - IIA     Specificity of Information.
  - IIB     Specificity of Planning.
  - IIC     Extent of Planning Activity.
- Dimension III    Consistency of Vocational Preferences.
  - IIIA    Consistency within Fields. (Roe, 1956)
  - IIIB    Consistency within Levels.
  - IIIC    Consistency within Families.
- Dimension IV     Crystallization of Traits.
  - IVA     Patterning of Interests.
  - IVB     Interest Maturity.
  - IVC     Liking for Work.
  - IVD     Patterning of Work Values.
  - IVE     Discussion of Rewards of Work.
  - IVF     Acceptance of Responsibility.
- Dimension V      Vocational Independence.
  - VA      Independence of Work Experience.
- Dimension VI     Wisdom of Vocational Preferences.
  - VIA     Agreement: Ability and Preference.
  - VIB     Agreement: Interests and Preference.
  - VIC     Agreement: Interest and Fantasy Preference.

VID Agreement: Level of Interests and Preference.

VIE Socioeconomic Accessibility.

### Major Studies Related to Career Maturity

The concept of career maturity has undergone a great deal of research since its first formulation by Super. A considerable amount of modification has come about as a consequence. Major research studies by John Crites (Vocational Development Project), Gribbons and Lohnes (Readiness for Vocational Planning), and Super (Career Pattern Study) have contributed greatly to the understanding of this phenomenon. These three major studies and their contribution to the understanding of the concept of Career Maturity are reviewed below.

#### Career Pattern Study

Most of the research in vocational development prior to the Career Pattern Study (e.g. Ginzberg) had been cross-sectional in nature. Super saw the limitations in such studies, particularly in the field of career development, and initiated a 20 year longitudinal study in 1950-51 on 142 boys who were in their ninth grade with a view to studying their development into the Establishment stage at around age 35.

Super selected his sample from Middletown, New York, presumably because he felt the community and school systems had characteristics representative of a large segment of American culture and thus would allow considerable generalizations to be made from the findings (Osipow, 1973).

Super and Overstreet (1960) produced the first major monograph entitled "The Vocational Maturity of Ninth Grade Boys" as part of the Career Pattern Study. As a result of research findings, the construct of vocational maturity underwent some modification particularly as it

refers to early adolescence. Several indices were found to be inadequate for that stage of development. These were consistency of Vocational Preferences, Crystallization of Traits (such as vocational interests and attitudes toward work), Vocational Independence, and Wisdom of Vocational Preferences (as judged by abilities, measured interests, and socio-economic accessibility). Although these indices may be important in other respects, such as prediction of success, or may become significant at later stages of development, Super sees them as unrelated to vocational maturity in grade nine.

Tolbert (1974) summarized the findings of the Career Pattern Study by the following observations:

- A. The vocational maturity of ninth-grade boys is characterized by:
  - 1. An awareness of the need to make vocational and educational choices.
  - 2. An acceptance of the responsibility for making plans and decisions.
  - 3. Some planning and participation in information-getting activities.
  - 4. A lack of readiness to decide upon specific direction or occupation.
  - 5. Lack of knowledge about work and training opportunities, failure to utilize resources to obtain information, and little self-understanding.
- B. Phenomena that tend to predict later occupational success (in terms of effective coping behaviors such as "trial", "instrumental", and "establishing" are:
  - 1. Occupational information in the ninth and twelfth grades.
  - 2. Planning in the ninth and twelfth grades.

3. Interest maturity (as measured by the Strong Vocational Interest Blank) in the ninth and twelfth grades.

4. Correlation between the pupil's abilities and those required by the occupation in which he is interested in grade twelve.

5. Information about training and education for the preferred occupation in grade twelve.

6. Several "conventional" school variables such as parental socioeconomic level, social status, intelligence, grades, and participation in school and community services.

7. Awareness of choices to be made, information obtained, and the planning to be done, in both ninth and twelfth grades.

#### Readiness for Vocational Planning (RVP)

Gribbons and Lohnes, stimulated by the Career Pattern Study research on vocational maturity, initiated a similar study in 1958, shorter and more restricted in scope. Their primary focus was on readiness for vocational planning. This ten year study followed the progress of a societal cross-section of 110 boys and girls from grade nine. Since a measure of vocational maturity was needed, Gribbons and Lohnes (1968) developed a semi-structured interview schedule which consisted of the following scales:

1. The factors in curriculum choice, including knowledge of abilities, interests, and values in relation to curriculum; courses in various curricula; relation of curriculum choice to occupational choice.

2. The factors in occupational choice, consisting of abilities and information about occupations.

3. Ability to describe strengths and weaknesses, and to relate them to educational and vocational choices.

4. Accuracy in estimating abilities and achievements, particularly on academic ability test scores.
5. Adequacy of the evidence the individual uses in self-ratings.
6. Awareness of interests, and how they relate to occupational choice.
7. Awareness of values, and how they relate to vocational choice.

The study was designed to investigate the predictive validities of the RVP variables against criteria of career adjustment. The investigators found that RVP scores collected in grade 8 appear to have as much predictive validity for curriculum choice as do scores on the same variables one and one-half years later, when students are that much more mature and have already selected their curricula. They also found that RVP scores were not appreciably related to socioeconomic level of family, but were related to the socioeconomic level of the occupational choices.

In summary, eighth grade scores were better predictors than tenth grade scores (an unexpected result) of the extent of educational and curriculum planning, educational aspiration, and post high school career adjustment. Lack of increase of RVP scores with chronological age raised doubts about the validity of the scales, concepts, and methodology. (Super, 1969), and Crites (1969) raised questions about the "low-order relationships between vocational behavior and grade level".

#### Vocational Development Project (VDP)

Another major longitudinal and cross-sectional study was the Vocational Development Project initiated by John Crites while he was associated with Super's Career Pattern Study. The primary purpose of the study was to develop a standardized, easy-to-use measure of vocational maturity. The VDP is related to and is based on Super's theory of

career development. The standardization sample used for the first round of testing this measure (the Attitude Scale) consisted of 2,822 subjects who were about equally divided by sex and in grades 5 through 12 of the Cedar Rapids, Iowa school system. The population of this city at the time of initial testing was 92,000. It was characterized by a fairly diversified economy, and a representative social structure (Crites, 1971).

Crites (1965) revised Super's definition of vocational maturity by combining the three dimensions, Orientation to Vocational Choice, Information and Planning, and Crystallization of Traits into two dimensions representing the affective and cognitive domains: Vocational Choice Attitudes and Vocational Choice Competencies. He deleted the Vocational Independence dimension, but kept Consistency of Vocational Preferences and Wisdom of Vocational Preferences in the formulation of a model of career maturity in adolescence.

Crites' model of career maturity (1965) is a hierarchical model organized according to four dimensions: Consistency of Career Choices, Realism of Career Choices, Career Choice Competencies, and Career Choice Attitudes. Each dimension is divided into variables. Consistency of Career Choices is subdivided into Time, Field, and Level. Realism of Career Choices is subdivided into Abilities, Interests, Personality, and Social Class, while Career Choice Competencies are grouped by Problem-Solving, Planning, Occupational Information, Self-Appraisal, and Goal Selection. Career Choice Attitudes include Involvement, Orientation, Independence, Preference, and Conception. Appendix A, p. 76, shows a graphic portrayal of the model of Career Maturity.

To date Crites has developed scales to measure two dimensions, Vocational Choice Attitudes and Vocational Choice Competencies. These

scales will be discussed at greater length in the section entitled Measurement.

One of the results of the Vocational Development Project was the development of an easy-to-use inventory for the measure of attitudinal factors in vocational development suitable for grade 5 to 12, and also usable with college seniors. (Tolbert, 1974). Research with the Vocational Development Inventory (VDI) Attitude Scale resulted in some interesting findings. Curricular groups at the same educational level differed in the maturity of their vocational choice attitudes, with the students in the more vocationally-oriented curricula being less mature than others. Adolescents from less favoured socioeconomic circumstances and minority ethnic and racial groups were less vocationally mature. Vocational maturity was related to vocational aspiration, vocational choice, and readiness for vocational planning. Vocational maturity was not related to socioeconomic level, number of siblings, or previous work experience at the grade nine level. Low to moderate positive correlations were revealed on intellectual variables, such as I.Q. and Scholastic Aptitude tests. The more vocationally mature were more task-oriented and better adjusted. Mixed conclusions were drawn regarding the effects of counselling on vocational attitude maturity, although Crites states that some reliable evidence exists to support the assumption that both group and individual counselling help increase maturity of vocational attitudes. A college orientation program resulted in marked gains, whereas an occupations course and life career game did not (Crites, 1971).

A major criticism of the studies just discussed appears to be that of sampling. Although all the major studies claimed to use a cross-

section of socioeconomic status (s.e.s.), the samples were selected from a particular locale, and not on a national basis. Certainly, the cross-sectional sample from Cedar Rapids, Iowa in Crites' study is not the same as a cross-sectional sample from New York City. In order to counter this criticism Crites (1973) cautions the researcher using his testing material that the norms are not national, and that the researcher is advised to develop norms for his own area. Super's sample (Super and Overstreet, 1960) involved only boys selected at the grade nine level in the mid sized community (40,000) of Middletown, New York, which is within easy driving distance of the metropolis. Generalizations from these samples appear to be limited by virtue of their geographic locations.

#### Variables Influencing Career Maturity

A review of literature indicates that a great deal of research has been undertaken in the field of career development of adolescents and young adults. In the main, this research has yielded conflicting results, indicating weaknesses in either theoretical constructs or measures, or both. The results also portray the relative youth of the concept of career maturity in comparison to other constructs and indicate that more extensive studies need to be undertaken. The final results of longitudinal studies, like the Career Pattern Study and the Vocational Development Project, have not been published to date. Presumably these will resolve some of the conflicting issues. This section will attempt to summarize the results of various studies describing the effects of variables such as personality, intelligence, self-concept, socioeconomic status, ethnicity, school curriculum, counselling, educational attainment, sex, and geographical location on career maturity.

### Personality

Martin Bohn (1966) investigated Super's claim that vocational maturity is related to other personality attributes. He found that the personality structure of individuals with high maturity scores (as measured by the Interest Maturity Scale of the Strong Vocational Interest Blank) were related to more mature personality characteristics as measured by the Adjective Check List. The high scores were found to be, on the average, more achievement oriented, more independent, more sociable, more sensitive, more persuasive, and less prone to be self-critical or to admit personality shortcomings. Willis Bartlett (1968) corroborated Bohn's findings and suggested that the results indicated that the development of vocational behavior is analogous to the development of mature personality characteristics.

### Intelligence

Studies by various researchers (Crites, 1969; Lawrence and Brown, 1976; Maynard and Hansen, 1970; Super and Bohn, 1970) all tend to agree that intelligence correlates significantly with career maturity. Of note is Maynard and Hansen's study on career maturity of black and white inner-city youth and white suburban boys. Although career maturity scores differed significantly, the differences all but disappeared when intelligence test results were taken into account.

### Self-Concept

Lawrence and Brown (1976) found that self-concept appeared to have a different impact on career maturity for twelfth graders depending on the race and sex of the subject. Self-concept was a significant predictor for only certain aspects of career maturity and the researchers suggested that it has more validity for white males than for females or blacks.

Jones et al. (1975) found a positive relationship to exist between social class and self-concept, and career maturity of female adolescents.

Dillard's (1976) study did not support Super's contention that there is a strong relationship between self-concept and career maturity.

#### Socioeconomic Status

This variable has been investigated extensively. Although some researchers (Ansell and Hansen, 1971; Crites, 1965; Jones et al., 1975; Super and Overstreet, 1960; Dillard, 1976) found that socioeconomic status predicts the level of career maturity, others (Lawrence and Brown, 1976; Campbell and Parsons, 1972) do not agree with these findings. Campbell and Parsons differentiated disadvantaged from non-disadvantaged subjects by referring to census statistics for per capita income, educational level of parents, and housing. They reported that, although certain important differences between disadvantaged and non-disadvantaged students were observed, the differences did not consistently favor one group. Disadvantaged students gave more thought to school plans and future jobs, whereas the non-disadvantaged students exhibited higher career maturity scores and occupational aspiration levels. The investigators suggest that the community variable confounded some of the results i.e. a person sees himself in relation to the world of his local community and the idea of being disadvantaged or non-disadvantaged is relevant only within the individual's social milieu.

#### Ethnicity

Studies researching the relationship of ethnic group and career maturity by Lawrence and Brown (1976), Moracco (1976), and Lo Cascio et al. (1976) contend that there exists a significant relationship between ethnic origin and career maturity. These studies do not agree

with the results obtained by Ansell and Hansen (1971) and Maynard and Hansen (1970). Ansell and Hansen indicated that other factors such as socioeconomic status and not ethnicity were predictive of career maturity. It appears that belonging to a particular ethnic group or race is not predictive of career maturity. Other variables, such as socioeconomic level and intelligence need to be examined in conjunction with ethnicity.

#### School Curriculum

There appears to be little research undertaken in connection with school curricula, types of schools, and their effect on career maturity. One such study was done by Herr and Enderlein (1976) who investigated the relationship of career attitude maturity scores and school system and four different curricula. School differences accounted for differences in the career maturity of students at the ninth grade and in the amount of maturity which occurred from grade nine to grade twelve. In terms of curricula, the study demonstrated that students in academic and business curricula scored significantly higher than students in general and vocational curricula. Background differences appeared to account for curriculum choice and these in turn affected career maturity scores. Rate and level of career maturity was influenced by school and curriculum effects.

#### Educational Attainment

Willis Bartlett (1968) in his study of manpower trainees, corroborated Crites' statement that career maturity increases with grade and educational level attained. He found no significant difference between career maturity scores based on the subject's age, but he found a significant difference between career maturity scores and educational level.

### Counselling

Anderson and Heimann (1957) tested the effect of vocational counselling on the career development and maturation of junior high school girls. They found that counselling had a positive effect and suggested that girls at the eighth grade level are developmentally ready for preliminary career planning activities.

### Sex

Although Anderson and Heimann did not compare career maturity of boys and girls, other studies have looked at this variable. Crites (1971) did not find significant differences to exist in relation to sex and career maturity. The results of a six year longitudinal study has led Crites to alter his position. While at the grade seven level he found no statistically significant difference between the mean scores of boys and girls, thereafter girls were found to be reliably more mature in their attitudes towards the career decision-making process (Crites, 1976). Also, studies by Lawrence and Brown (1976), Smith and Herr (1972) and Herr and Enderlein (1976) indicate that girls score higher in career maturity measures than boys in the same grade level. These findings tend to agree with research conducted on other maturity measures i.e. that girls mature sexually, emotionally and developmentally at an earlier age than boys during the adolescent period.

### Location

Geographical location and its effect on career maturity has not been extensively studied. Super and Overstreet (1960) suggested that rural boys appeared to be more vocationally mature than urban boys due to work experiences on farms, experiences that help them see in a more clear-cut yet isolated manner certain vocational patterns being followed. Asbury

(1968) investigated the correlates of the career maturity of disadvantaged Appalachian grade eight pupils. He compared their mean career maturity scores with the standardization sample for the Vocational Development Inventory (Crites, 1971) which was made up of predominantly middle class Iowa students. The results of Asbury's study indicated significantly lower mean scores for the Appalachian disadvantaged students. Campbell and Parsons (1972) investigated disadvantaged and non-disadvantaged students from four unnamed different geographical areas in the U.S. As mentioned previously, their results were inconclusive.

#### Formulation of the Study

On the basis of the review of literature concerning career maturity and the importance placed by researchers and theorists on this concept as it concerns realistic and appropriate career choices, a study was conducted which compared the relative effects of geographic location, sex, and level of occupational information on the career maturity of grade nine students. This age group was selected since it is at this age and grade level that the school system forces the sometimes irreversible course and curricular choices on students. It is important for both the students and society that these choices are not made in a haphazard manner. A review of testing instruments (Sorenson, 1974) revealed the Career Maturity Inventory (CMI) developed by J.O. Crites (1973) was the most appropriate measure of career maturity.

#### Hypotheses

Five major null hypotheses resulted from the review of literature.

##### Hypothesis I

There is no statistically significant difference in the mean.

scores on the CMI Attitude Scale between urban and rural grade nine students ( $\alpha = .05$ ).

On the basis of the literature surveyed, it seems possible that urban students would score higher on this measure than rural students. Asbury (1968) and Crabtree and Hales (1974) found rural children generally less career mature than urban children. Various reasons are offered. Rural children have fewer role models than urban children and less frequent social contact with people from diverse occupations. Less adequate funding for school programs may be available and generally there is less variety in part-time jobs. (Pietrofesa, 1974). Asbury (1968) suggested that disadvantaged rural students in his study were less vocationally mature since their vocational development was not strongly related to the realism of their aspirations. On the other hand, Super found no significant differences between urban and rural students. Given the sparsity of literature dealing with this locational variable, it is difficult to predict the outcome of this comparison.

### Hypothesis II

There is no statistically significant difference in the mean scores on the CMI Occupational Information test between urban and rural grade nine students ( $\alpha = .05$ ).

Some previous studies have shown a lack of strong relationship between parent's occupations and their children's occupational knowledge. (Wehrly, 1973). Perhaps this same conclusion applies to children from rural and urban situations. However, Nelson (1963) reported that urban children possess more knowledge about occupations than rural children. In view of the mixed results from various studies, it would be difficult to predict a direction for the second hypothesis.

Hypothesis III

There is no statistically significant difference on the mean scores of the CMI Attitude Scale between boys and girls at the grade nine level ( $\alpha = .05$ )

On the basis of the literature surveyed it would be difficult to predict a sex difference in career maturity at the grade nine level.

Hypothesis IV

There is no statistically significant difference on the mean scores of the CMI Occupational Information test between boys and girls at the grade nine level ( $\alpha = .05$ ).

Hypothesis V

There is no statistically significant correlation (Pearson  $r$ ) between scores on the CMI Occupational Information test and the scores on the CMI Attitude Scale ( $\alpha = .05$ ).

On the basis of the literature reviewed, it appears possible to predict a moderate positive correlation between occupational knowledge and career attitude maturity. Crabtree and Hales (1974) found students lacking in occupational information to be less career mature than those with ready access to occupational literature and direct occupational contact. Ehrle (1970) implied that students without sufficient occupational information lack the means with which to think about the future realistically. Westbrook (1976b) found a correlation of .43 to exist between occupational information and career maturity as measured by the CMI.

## CHAPTER III

### Methodology of the Thesis Research

#### Overview

The purpose of the study was to compare the predictive value of geographical location and gender of grade nine students on the following variables: (a) Career Attitude Maturity and (b) Occupational Information. From a theoretical as well as a practical viewpoint it was also desirable to investigate the relationship between occupational information and career attitude maturity.

#### Research Design

A descriptive field survey was employed in this study. This technique was selected because neither treatments nor control groups were necessary for this research. What was required was to measure existing attitudes and levels of experience.

#### Sample

Subjects for this study were 152 grade nine students in academic programs from three high schools. One school is located in the Greater Vancouver area and the other two are located in the Southern Interior of British Columbia. The intended sample (selected by school authorities) was to consist of 90 urban and 90 rural students, divided equally by sex. Absenteeism and spoiled measures reduced the sample to 88 rural students (36 males and 52 females) and 64 urban students (30 males and 34 females). Neither I.Q. scores nor socioeconomic information for the subjects were available to the researcher.

A maximum polarity of urban and rural schools was desirable for the examination of possible differences. This polarity was attempted by a selection of school districts from an analysis of census statistics

(Appendix B, p. 77). Letters requesting assistance in this study were sent to District Superintendents of Schools (Appendix D, p. 79) in the selected districts and consenting replies were received by mail and telephone. The District Superintendents selected the schools which they felt were representative of the school district.

#### Demographic Study of Schools

It was felt that a demographic description of the three schools involved in the study would be desirable in order to help illuminate the results of this study.

The urban school is a modern, well-equipped open-classroom junior secondary school located in a heavily-populated industrial and residential suburb of Vancouver. The school's population is approximately 900. No counsellors are on staff and no career exploration programs are in effect. Instead, each teacher serves as a guidance counsellor whenever a student requires help.

The larger of the two rural schools is located in a small town (population 2,000) whose main function is to provide services to the surrounding agricultural community. The school, comprising 850 students from grade 9 to 12, is a standard two-story structure and contains a large library and auditorium. The students appeared well-disciplined and courteous. A congenial rapport was observed between them and the teaching staff, three of whom serve as part-time counsellors. A career education program is in effect but is not available to grade nine students. The community's source of revenue is agriculture (fruit farming) which accounts for the chronic seasonal unemployment typical of a rural community.

The smaller of the rural schools is located in a small community (population 800) which serves as a centre for a ranching and fruit growing

region. Seasonal unemployment is also characteristic of this area. The school's 280 students are enrolled in grades 9 to 12. Virtually no public recreational or cultural facilities exist in the village, the only library being the school library. Two of the school's teachers serve as part-time counsellors. No career exploration or guidance programs are available. Most of the teachers on staff commute daily from a larger community 45 miles distant. Although the two rural schools have physical differences, the students appear to have similar socioeconomic backgrounds and similar attitudes towards the school staff. The rural students in the sample do not appear to be economically disadvantaged in comparison to the urban students.

According to the Financial Post Survey of Markets 1976/77, average male income in 1971 for the urban area in the study was \$7,559 and the average income for the males in the rural area was \$5,985. Since there is no large discrepancy in incomes, the rural area in question is not considered by the researcher to be disadvantaged economically in comparison to the urban area.

### Testing Instruments

The following section deals with a description of measuring devices used to determine two of the dimensions of career maturity, (a) career attitude maturity, and (b) occupational information. Both measures are part of the Career Maturity Inventory (CMI) developed by J.O. Crites in 1965 under the original appellation, Vocational Development Inventory (VDI). Career attitude maturity (considered synonymous with career maturity by Crites) is measured by the CMI Attitude Scale; knowledge of occupational information is measured by a subtest of the CMI Competence Test, the

Occupational Information test. In addition, a questionnaire (Appendix C p. 78) developed by the researcher to gain supplementary demographic information was administered to each subject.

#### Career Maturity Inventory Attitude Scale

The CMI consists of (a) the Attitude Scale, and (b) the Competence Test, which comprises five subscales. The Attitude Scale consists of 50, age and grade related, True/False items scored for a total Career Maturity score. The Attitude Scale of the CMI differentiates the responses of fifth through twelfth grades; all of its items are related to grade and age with which the total Career Maturity score correlates .46. The test-retest reliability for one year is .71. The maturity of choice attitudes is related to both indecision and unrealism in career choice.

Internal consistency of the Attitude Scale was estimated by KR20 and was found to be, on the average, .74. No coefficients of equivalence have been determined because alternate forms of the Scale have not been constructed. Content validity was studied by ten expert judges and percentage of agreement for items was found to be 74%. No definitive conclusions have been drawn regarding criterion-based validity although findings (Crites, 1974) indicate the Attitude Scale has demonstrated criterion-related validity.

#### Career Maturity Inventory Competence Test

The Competence Test has not undergone as much research as the Attitude Scale. Westbrook (1976) conducted a study of the relationships between Career Choice Attitudes and Career Choice Competencies of grade nine students. He found that the Attitude and Competence Test subscales and the total score were interrelated. However, the Competence Test, according to one reviewer (Sorenson, 1974) is based on a number of

untested assumptions, a basic assumption being that individuals who can accurately appraise the career relevant capabilities of others, are good self-appraisers.

The Competence Test consists of five parts measuring the following Career Choice Competencies: Knowing Yourself (Self-Appraisal); Knowing About Jobs (Occupational Information); Choosing a Job (Goal Selection); Looking Ahead (Planning); What Should They Do? (Problem Solving).

The items in all the tests are followed by multiple-choice answers, including "I don't know." Crites conducted an inspectional analysis of the open-ended responses. Results indicated a monotonic (decreasing) trend in "don't know" from the lower to the upper grades. It also became apparent that the inclusion of a "don't know" alternative might tend to reduce whatever score variance might be attributable to response bias. Norms for grades nine to twelve have been collected for various parts of the U.S. No Norms exist for Canada.

As mentioned previously, only the Occupational Information (Knowing About Jobs) subtest was used in this study. Theoretical and empirical studies have shown that there is reason to hypothesize that occupational information is a salient dimension of Career Choice Competencies (Crites, 1973). The items are based upon Roe's (1950) Field and Level classification, with additions and revisions to make them as representative as possible of the world of work. It is felt that the occupations listed are a representative and comprehensive sampling of frequently chosen occupations in which employment opportunities are good and for which widely used interest inventories and informational materials are available (Crites, 1973). It is of particular interest to this study whether occupational knowledge (as acquired through access to information) has a

significant effect on career attitude maturity.

### Student Questionnaire

Due to the descriptive nature of the study, a questionnaire (Appendix C, p. 78) was designed to obtain supplementary information on the subjects. The objections of some school authorities prevented the researcher from asking specific questions regarding socioeconomic status, ethnic background and other personal details. It was felt, however, that responses to some of the general items may illuminate the results of the study.

### Testing and Data Collection

The testing instruments and the questionnaire were group-administered and hand-scored by the researcher. Scoring was double-checked by another scorer. The tests were administered in mid-June, 1977 and administration was limited to times and places specified by school authorities. Total time involved for each group was one hour. The CMI Attitude Scale took approximately 30 minutes, and the CMI Occupational Information test took approximately 20 minutes to administer. The questionnaire was completed by the end of the hour. Instructions for administration as specified in the test manual were strictly followed.

The students at the smaller rural school were tested in a classroom on a Monday morning. Girls and boys wrote the test together. The boys and girls at the larger rural school composed two separate guidance classes and were tested the next day at 10 a.m. and 2 p.m. respectively. The urban students were tested one week later in ready-formed classroom groups in three morning sessions.

### Data Analysis

Scores for both measures, the CMI Attitude Scale and the CMI Occupational Information test, were tabulated. Means and standard deviations were calculated by gender for the rural and urban groups.

A two-way analysis of variance was computed to compare the difference of means in the two dependent variables (career attitude maturity and occupational information) according to geographical location and sex at a significance level of  $\alpha = .05$ .

Assuming that career attitude maturity and occupational information are continuous and symmetrical and possess a linear relationship, a Pearson product-moment correlation coefficient was calculated and its significance tested at the  $\alpha = .05$  level. The significance level of  $\alpha = .05$  was chosen to reduce the possibility of committing a Type I error and rejecting a true hypothesis.

An attempt was made to analyse the responses to particular items in the CMI Occupational Information test. It was felt that such an analysis would assist in describing the similarities or differences in occupational knowledge of rural, urban, male and female subjects.

The responses to the student questionnaire, due to the nature of the questions, were general in nature. Percentage figures are used in comparison analysis.

## CHAPTER IV

### Results and Discussion

The data collected during this study were analysed statistically. Results of the analyses are described and discussed in this chapter according to the hypotheses previously set out.

#### Comparison of Urban and Rural Career Maturity

The major focus of this study was to investigate the differences in career maturity of urban and rural grade nine students. It was hypothesized that there would be no statistically significant difference in the mean scores on the Career Maturity Inventory (CMI) Attitude Scale between urban and rural grade nine students (Hypothesis I). On the basis of a two-way analysis of variance (Table I, p. 47) the null hypothesis was accepted. These results tend to support the findings of Crites (1971) who found no difference to exist. They do not support other studies that found urban students to be more career mature than rural students. Nor do these results support Super and Overstreet's (1960) conclusions that rural boys, due to work experiences open to them, appear to be more vocationally mature than urban boys. Among possible explanations for this lack of differentiation are the following: (a) This study compared a societal cross-section of students from rural and urban environments. A few studies such as by Campbell and Parsons (1972) whose results favoured urban students were actually comparing disadvantaged rural students with middle class urban students. (b) It should be noted that although geographical environments are quite different for urban and rural students, parental occupation types do not differ greatly. Appendix E, p. 81, shows that only 33% of rural boys and 40% of rural girls gave their father's

TABLE I  
MEANS, VARIANCES, STANDARD DEVIATIONS, AND ANALYSIS OF VARIANCE  
FOR THE CAREER MATURITY INVENTORY, ATTITUDE SCALE

Group	N	Mean	Variance	Standard Deviation
Urban Students	64	33.88	20.98	4.58
Rural Students	88	34.19	24.21	4.92
Total	152	34.06	22.66	4.76

Analysis of Variance				
Source	df	MS	F	P
Urban/Rural (L)	1	3.33	.15	.70
Gender (G)	1	3.37	.15	.70
L x G	1	77.34	3.43	.07
Within	148	22.57		
Total	151			

occupations as strictly of the rural type (farm worker, logger). The fact that a greater proportion of father's occupations are the types one would find in an urban setting, it appears to have eliminated some of the suspected experiential differences between rural and urban students.

#### Comparison of Urban and Rural Occupational Information

The level of occupational knowledge of urban and rural grade nine students was tested by the CMI Occupational Information test. It was hypothesized that there would be no statistically significant difference between the mean scores on the CMI Occupational Information test of urban and rural students (Hypothesis II). The null hypothesis was supported by a two-way analysis of variance (Table II, p. 49). No statistically significant difference was found. The majority of studies indicate that a difference does exist in favour of the urban students. A possible explanation for the lack of differentiation in this study may be found in Sewell and Orenstein's (1965) investigation. They argue that even though occupational and educational plans of rural youth are different due to locational factors, it would be unreasonable to assume that rural youths are completely ignorant of the major professional, managerial, and technical positions available in larger urban communities. The findings of this study tend to add support to their conclusion. Further, it seems on observation, that conditions for most rural residents have markedly improved over the last few years. The improvements in transportation systems and in the communications field have greatly reduced the isolation factor for rural students. These advances, particularly in the mass media, have given the rural student (in this sample) a much better opportunity to gain similar vicarious learning experiences to those available to the urban student.

TABLE II  
 MEANS, VARIANCES, STANDARD DEVIATIONS, AND ANALYSIS OF VARIANCE  
 FOR THE CAREER MATURITY INVENTORY,  
 OCCUPATIONAL INFORMATION TEST

Group	N	Mean	Variance	Standard Deviation
Urban Students	64	15.31	9.12	3.02
Rural Students	88	15.28	6.81	2.61
Total	152	15.30	7.73	2.78

Analysis of Variance				
Source	df	MS	F	P
Urban/Rural (L)	1	.00	.00	.99
Gender (G)	1	.18	.02	.74
L x G	1	1.36	.17	.68
Within	148	9.84		
Total	151			

### Comparison of Male and Female Career Maturity

Of equal importance to this study is the investigation of the effects of gender on career maturity. As previously hypothesized (Hypothesis III), no statistically significant difference appears in career maturity when based on the subjects' sex. A two-way analysis of variance (Table I, p. 47) was conducted and no statistically significant difference was found between the mean scores of grade nine males and females on the CMI Attitude Scale. Of interest is a breakdown of mean scores by gender and location in Table III, p. 51. The discussion in Chapter II leads to the conclusion that career maturity is closely related to the levels of other forms of maturity. Girls, who mature more quickly than boys during adolescence, should produce higher scores on the CMI Attitude Scale. The findings of this study do not support this relationship nor the results of Crites' (1976) study which indicated that from grade seven to grade twelve, girls score consistently higher on this scale than boys.

A possible explanation for the lack of differentiation in this study may lie in the effect that women's liberation movements had on girls' career choice planning. Traditionally, most women have had very few career opportunities. In fact, career choice for most was limited to either nursing, teaching, typing, or homemaking. Choices among these few options may have been fairly easy to make. The current emphasis on equal job opportunities has greatly increased the choice options for females, perhaps making the selection of careers as difficult (if not more difficult) for girls as for boys. The variety and number of female role models, although increasing, is still much smaller than male role models. It appears, then, that the above factor may have reduced the expected differences in career maturity between boys and girls. This factor suggests an area for further research.

TABLE III  
MEANS, VARIANCES, AND STANDARD DEVIATIONS BY GENDER AND LOCATION  
FOR THE CAREER MATURITY INVENTORY, ATTITUDE SCALE

Group	N	Mean	Variance	Standard Deviation
Rural Males	36	33.28	23.23	4.82
Rural Females	52	34.83	24.30	4.93
Urban Males	30	34.60	17.31	4.16
Urban Females	34	33.24	23.91	4.89
Total Males	66	33.88	20.70	4.55
Total Females	86	34.20	24.40	4.94

### Comparison of Male and Female Occupational Information

The null hypothesis (Hypothesis IV) stating that no statistically significant difference exists in the mean scores on the CMI Occupational Information test between genders at the grade nine level has been supported by a two-way analysis of variance (Table II, p. 49). Table IV, p. 53, further illustrates the results of the comparison. Little research, to the author's knowledge, has been carried out with respect to this dimension. The results indicate that girls and boys are equally aware of the various occupations listed in this measure. The findings support the studies of Crites (1973) and Gribbons and Lohnes (1968) which concluded that learning experiences of boys and girls are relatively the same.

### Relationship of Career Maturity and Occupational Information

It was hypothesized in Chapter II that there would be no statistically significant correlation (Pearson  $r$ ) between scores on the CMI Attitude Scale and the CMI Occupational Information test (Hypothesis V). Pearson correlation coefficients were calculated (Table V, p. 54) and the null hypothesis was rejected. The results of this study support Crites' (1965) premise that the correlations between career choice competency variables and attitude variables should be in the .30's and .40's. The correlation between the CMI Attitude Scale and the CMI Occupational Information test in this study is .40. This result also supports the findings of Westbrook (1976b) whose investigation shows a .43 correlation between the CMI Attitude Scale and the CMI Occupational Information test. It appears that the level of career maturity (CMI Attitude Scale) is closely related to the level of occupational knowledge (CMI Occupational Information test) in the possession of a grade nine student. Of interest

TABLE IV  
MEANS, VARIANCES, AND STANDARD DEVIATIONS BY GENDER AND LOCATION  
FOR THE CAREER MATURITY INVENTORY,  
OCCUPATIONAL INFORMATION TEST

Group	N	Mean	Variance	Standard Deviation
Rural Males	36	15.25	5.71	2.39
Rural Females	52	15.35	7.62	2.76
Urban Males	30	15.47	10.96	3.31
Urban Females	34	15.18	7.73	2.78
Total Males	66	15.32	8.01	2.83
Total Females	86	15.28	7.56	2.75

TABLE V

PEARSON R CORRELATIONS BETWEEN ATTITUDE SCALE AND OCCUPATIONAL  
INFORMATION TEST OF THE CAREER MATURITY INVENTORY

Group	N	R Square	Pearson r	Significance
Rural Males	36	.28	.53	.0005
Rural Females	52	.23	.48	.0001
Urban Males	30	.002	.05	.40
Urban Females	34	.22	.47	.0025
Total	152	.16	.40	.00001

is the relationship of these two variables in the case of urban males. Whereas the correlations for rural males and females, and urban females are .53, .48, and .47 respectively, the correlation for urban males is only .05, a statistically non-significant correlation. The testing conditions were the same for urban males and females. This fact appears to rule out many possible explanations for this anomalous result. The factor of promised anonymity of subjects rules out the possibility of studying the results on an individual basis.

#### Analysis of Responses to Items in the CMI Occupation Information Test

Of additional interest to the study is a summary of responses to specific items in the CMI Occupational Information test (Table VI, p. 56). This table presents a summary of responses judged to be career mature. In general, there appear to be no notable differences in the overall knowledge level of subjects with respect to sex or location. Sexual bias appears negligible when only 48% of rural girls identified the occupation of (clothes) buyer; 61% of rural boys and 67% of urban boys identified this occupation correctly. The overall knowledge of specific occupations warrants examination. Abstract occupations such as social worker (item 31) and lawyer (item 40) and specialists such as dietician (item 38) did not receive a high percentage of correct responses by any group. It appears that these types of occupations are not yet within the experience of the majority of ninth grade students.

#### Comparisons with Norms

Crites (1973) has produced tables reflecting the norms of the Iowa standardization sample and the results of other studies using his instruments Table VII, p. 57, summarizes the mean scores and standard deviations

TABLE VI  
COMPARISON OF CORRECT RESPONSES<sup>a</sup> BY GENDER AND LOCATION  
FOR THE CAREER MATURITY INVENTORY,  
OCCUPATIONAL INFORMATION TEST

Item Number	Rural		Urban	
	Female %	Male %	Female %	Male %
21	67	64	65	70
22	95	94	97	80
23	56	89	59	77
24	67	58	56	63
25	98	92	85	100
26	98	94	97	83
27	98	97	91	90
28	90	78	76	87
29	63	72	68	77
30	63	72	59	84
31	60	53	59	57
32	48	61	71	67
33	83	72	91	97
34	92	94	97	87
35	69	72	59	63
36	96	86	100	90
37	92	94	97	99
38	52	42	38	53
39	92	89	85	77
40	58	42	68	57

<sup>a</sup>Percentage figures were used due to the unequal cells.

TABLE VII  
COMPARISON WITH GRADE NINE NORMS FOR THE CAREER MATURITY INVENTORY  
ATTITUDE SCALE<sup>a</sup>

Group	N	Mean	Standard Deviation
Iowa	703	36.50	4.82
Texas	582	32.59	5.69
Pennsylvania	1273	34.69	4.93
Tennessee	484	32.97	5.13
British Columbia	152	34.06	4.76

<sup>a</sup>All data with exception of British Columbia have been derived from the Administration and Use Manual of the Career Maturity Inventory (Crites, 1973).

for the CMI Attitude Scale. The mean score on the CMI Attitude Scale for the sample used in this study is 34.06, approximately one-half standard deviation lower than the standardization mean of 36.50. Mean scores for Tennessee and Texas are only slightly lower than the mean of the B.C. sample. Table VIII, p. 59, provides a comparison of mean scores of various grade levels of the standardization sample with the B.C. grade nine sample on the CMI Occupational Information test. The comparison reveals some unexpected results. The mean score of the B.C. grade nine student (15.30) is approximately one standard deviation higher than the mean score of the Iowa students (11.35). In fact, B.C. ninth graders even scored higher than the twelfth graders in Crites' sample. A comparison of standard deviations indicates that B.C. students' scores were more homogeneous than the norm group's scores. The results of the comparisons indicate that while the sample in this study had lower career maturity scores, they possessed greater knowledge of occupational information than the standardization sample. The results of this comparison lead to two possible explanations: (a) possession of occupational information is not as conducive to career maturity as hitherto assumed, and (b) possession of occupational information without the concurrent help in internalizing this knowledge is of little help in making an appropriate career choice. The rural students had counselling services available to them, whereas these services were not readily available to the urban students. In view of the preceding statement, the researcher tends to support the latter explanation.

TABLE VIII  
COMPARISON WITH OTHER GRADE NORMS FOR THE CAREER MATURITY INVENTORY  
OCCUPATIONAL INFORMATION TEST<sup>a</sup>

Group	N	Mean	Standard Deviation
Iowa Grade 8	280	11.59	4.60
Grade 9	197	11.35	4.82
Grade 10	318	12.23	5.04
Grade 11	302	13.79	4.86
Grade 12	214	14.43	4.67
B.C. Grade 9	152	15.30	2.82

<sup>a</sup>Figures (except B.C.) were obtained from the Administration and Use Manual of the Career Maturity Inventory (Crites, 1973).

## CHAPTER V

### Summary and Conclusions

It is the purpose of this final chapter to present a brief overview of the study as well as to postulate implications of the results and to propose areas of future related research.

### Overview and Summary of Results

The original focus of the study involved the following investigations: (a) to compare the career maturity of urban and rural grade nine students, (b) to compare the occupational information of urban and rural grade nine students, (c) to compare the career maturity and occupational knowledge with the gender of the grade nine students, and (d) to investigate the relationship between occupational information and career maturity.

To this end samples were taken from an urban school in the Greater Vancouver area and from two rural schools in the Southern Interior of British Columbia. The measures selected to investigate career maturity and occupational information were the Career Maturity Inventory Attitude Scale and the Career Maturity Inventory Occupational Information test developed by J.O. Crites (1973).

In regard to the first investigation just cited, it was found that there was no statistically significant difference between rural and urban career maturity. This result conflicts with some studies mentioned in Chapter II which primarily compared rural and urban career maturity based on socioeconomic status. Disadvantaged rural students were compared with non-disadvantaged urban students. This present study, however, supports the results of Crites' (1971) investigation, which concluded

that few, if any, differences exist between rural and urban students on the career maturity attitude scale. Some of the reasons offered for this lack of differentiation, despite obvious urban advantages of more adequate school funds, better facilities, are the following: (a) This study compared a societal cross-section of students from urban and rural areas rather than middle class urban with working class rural. Presumably then, non-disadvantaged rural students are no less career mature than non-disadvantaged urban students. (b) There may be a greater awareness of the need to plan for the future by rural students (Gribbons and Lohnes, 1968). (c) There seems to be a greater and more amicable student-teacher relationship in rural areas, leading to greater personal contact. (d) There appear to be more visible (although limited in variety) role models for the rural children than for urban children.

Comparison of occupational information based on geographical location likewise resulted in no statistically significant difference, contrary to most studies cited in Chapter II. It appears that although there may be more and varied occupational role models available to urban students, it may be that they do not take advantage of the opportunity to investigate on their own. Also the absence of professionally trained counsellors in the urban school and resultant lack of readily available educational and occupational information may have contributed to the reduction of the apparent urban advantage. It has previously been suggested that the opportunities for greater student-teacher contact may be more available in a rural school. The availability of counsellors (even though part-time) and the resultant readily available occupational and educational information may have contributed to the reduction of the expected rural-urban differences. Rural students are perhaps in closer

contact with their role models and participate to a greater extent in the running of a family farm or business than the children of urban workers. A city parent who leaves for work every morning but does not discuss his work with his child, does not impart any occupational information to him. (The author had occasion to counsel with a grade 12 student who fantasized working as an accountant. Although his father was a chartered accountant, the student had no idea what his father's work entailed).

In comparing the career maturity (CMI Attitude Scale) of girls and boys at the same grade level, it was found that no statistically significant differences existed, contrary to the results of studies cited in Chapter II. It was expected that girls who, at that age level are physically, emotionally, and socially more mature than boys, would tend to score higher than boys on the career maturity dimension. It appears that the increasing demands for females in the labour force and social expectations resulting from the very recent emphasis on equality of opportunity in occupations, have imposed complex problems at this stage of career choice development. Perhaps girls are even more apprehensive about the "world out there" than boys.

Similarly, a comparison of levels of occupational knowledge (CMI Occupational Information test) based on gender revealed no statistically significant difference. No difference was expected as a result of the findings of Crites (1973) and Gribbons and Lohnes (1968). A study by Gold (1977) revealed that very little information is available to girls in texts, which apparently tend to sex-stereotype occupations. Presumably if biases did not exist in texts, girls would tend to score higher than boys on the occupational information dimension. But, texts are not the

only sources of information, and it is doubtful that many adolescents glean their occupational information from literature in any case.

Examination of the relationship (Pearson  $r$ ) between scores on the CMI Occupational Information test and the CMI Attitude Scale revealed that a significant positive correlation ( $r=.40$ ) exists between these two variables. This relationship holds true for the sample as a whole as well as for rural males and females and urban females. The exception was urban boys for whom the correlation between career maturity scores and occupational information scores ( $r=.05$ ) is not statistically significant. This lack of consistency would require further individual examination, not only of score fluctuation, but of the personality variables of the urban boys themselves. Unfortunately, the anonymity promised the subjects renders this examination impossible.

In summary then, comparison of career maturity scores (CMI Attitude Scale) and occupational information scores (CMI Occupational Information test), based on gender and geographical location, revealed no statistically significant difference. A statistically significant positive correlation ( $r=.40$ ) was found to exist between career maturity (CMI Attitude Scale) scores and occupational information (CMI Occupational Information test) scores.

#### Implications of the Study

Theoretical studies cited in Chapter II highlight the importance of career maturity as a predictor of future career adjustment. The junior high school years have been shown by investigators (Campbell and Parsons, 1972; Super and Overstreet, 1960; Gribbons and Lohnes, 1968) to be clearly a time of significance and have major consequences for the students' future educational and career plans. To this end the whole

spectrum of variables affecting career maturity has been studied. Unfortunately, perhaps due to sampling procedure or because only specific populations were studied, the literature abounds with mixed and inconclusive results.

Perhaps the variables which have not received a great deal of attention, are geographical location and gender. Although most studies dealing with geographical location as a variable conclude that rural students possess lower career maturity than urban students, they have been specific to socioeconomic status comparisons. It is obvious that children from isolated, impoverished communities in the Ozarks or Appalachian would not be as well developed career-wise as middle-class city children. It is obvious also that children from the Ozarks are not representative of rural children. Therefore, other variables such as physical isolation, media and communications and school counselling facilities need to be looked at in defining the term rural prior to making comparisons. The question of sex differences in career maturity may have suffered a similar fate. Confounding extraneous variables such as differing social and cultural environments may have crept into these studies. Longitudinal studies (Crites, 1976) have suggested that females possess greater career maturity than males. However, no mention has been made of the new social influences which may have affected the career maturity of a new group of grade nine students. In spite of the great interest shown in the developmental aspect of career choice, no studies have been conducted in the Canadian scene, to the best knowledge of the author.

The results of the present study imply that a great deal of research still needs to be carried out on this subject. This study has shown that

no differences exist in the career maturity between rural and urban students nor between males and females at the grade nine level. Various reasons for this lack of differentiation have been postulated: (a) Urban students are not given the required help and counselling in order to take advantage of their presumably greater opportunities to gain knowledge and maturity. (b) Little or no attention has been given to the expansion or development of counselling services for girls in spite of recent social developments.

Results of the student questionnaire (Appendix E, p. 81) indicate that 31% of the subjects in this study nearing the completion of grade nine still had no idea of what they wished their future occupations to be. This is particularly evident in the case of urban males (37%) and urban females (35%). These figures imply that approximately one-third of the subjects in the sample may have (a) chosen courses and/or curricula without a goal in mind, or (b) preferred to defer their planning, or (c) received no counselling or help in course or curriculum selection.

No significant differences were found in the level of occupational knowledge between sexes and geographical locations. Previous research led to the expectation that urban students would score higher on this variable than rural students. The results indicate that urban students may not have taken advantage of the vicarious information and the more varied role models available to them. They also reflect a lack of career exploration programs at the urban school. Although neither the rural students nor the urban students had the opportunity to participate in a career exploration program it appears that the existence of trained counsellors in the rural schools (with the resultant availability of occupational information) may have eliminated the supposed urban advantage. It has

already been mentioned that girls may have been discriminated against in texts dealing with occupations (Gold, 1977). The lack of difference in level of occupational information between girls and boys may be attributable to a lack of real progress in portraying more females in occupational roles in new texts.

The relationship of occupational information to career maturity has been shown to be statistically significant at the  $\alpha = .05$  level. The implication is that the implementation of or improvement in career exploration programs, field trips to industry and higher schools, a greater availability of occupational literature and counselling services, would lead to an improvement in career maturity. Hoppock (1967) has assembled an excellent resource book in methods of compiling and disseminating occupational information. The lack of significant correlation between these variables for urban boys leads to the speculation that career maturity is not dependent on the level of occupational information. Some boys with low scores in career maturity have shown that they have a very good grasp of occupational information, and vice-versa. The implications are that boys who are emotionally and developmentally ready to make career preliminary decisions regarding career choice cannot do so without sufficient occupational information. Conversely, those who have not reached an acceptable level of maturity to make a choice should not "jump the gun" even though they possess a sufficient amount of information.

The comparison with norms of career maturity and occupational information may have implications for the role of guidance and counselling in B.C. schools. The subjects in this study produced a mean score on career maturity almost one standard deviation lower than the standardization

norm. However, their mean score on occupational information was higher than that for twelfth graders standardization group. This implies that mere possession of occupational information without the additional help of counsellors in internalizing that information may be insufficient in making realistic, appropriate educational and career decisions. Serious consideration should be given to the expansion and improvement, or implementation of counselling services in B.C. schools particularly at the elementary and junior secondary schools.

The Career Maturity Inventory appears to be an acceptable measure to be used in diagnosing students with problem areas and assessing counselling needs. It appears to be particularly valuable in the early diagnosis of those children who display disparate scores on this measure. Assessment and diagnosis appears essential prior to entry into high school, at which time students are forced to make choices vital to their future development.

#### Suggestions for Future Research

This study was limited to a descriptive field study of a specific population due to the constraints of time and finances. Since the literature alluded to the value of longitudinal studies, particularly on the career maturity dimension, a study involving a cross-section of students in various curricula could be carried out. Of interest to school authorities could also be the curricular comparisons of career maturity. The results of this study pointed to insufficient counselling services and career exploration programs available to students at the early exploratory stage of career development. To this end an experimental design could be implemented using pretests and posttests to

ascertain the effect of these various programs on the career maturity of students. This study is envisaged using a control group and an experimental group of students. The subjects in the experimental group would be enrolled in a career development program. A pretest and posttest would be administered to both groups. Results then, may be evaluated to see if exposure to a career exploration program has any significant effect on the level of career maturity. Also in an effort to determine the career adjustment of students, a follow-up program could be instituted at various individual schools or districts. The role of the community needs more careful scrutiny and sociological studies could be carried out in this direction.

The results of this study tend to indicate that the use of the Career Maturity Inventory may be helpful in individual assessment of students' ability and readiness to make educational and career choices. It may also assist the school counsellor to take corrective measures in order to help increase the students' ability to cope successfully with vocational tasks in the future. The results also tend to indicate that very serious deliberation needs to be done by various school authorities about instituting sufficient counselling services. They also indicate a need to keep abreast of social developments and how they affect school populations.

**REFERENCES**

## REFERENCES

- Anderson, D. G., & Heimann, R. A. Vocational Maturity of Junior High School Girls. Vocational Guidance Quarterly, March 1976, 191-195.
- Ansell, E. M., & Hansen, J. C. Patterns in Vocational Development of Urban Youth. Journal of Counseling Psychology, 1971, 18, 505-508.
- Arbuckle, D. S. Occupational Information in the Elementary School. Vocational Guidance Quarterly, Winter 1963-1964, Vol. 12.
- Asbury, F. A. Vocational Development of Rural Disadvantaged Eighth Grade Boys. Vocational Guidance Quarterly, December 1968, 109-113.
- Bartlett, W. E. Vocational Maturity and Personality Variables of Man-power Trainees. Vocational Guidance Quarterly, December 1968, 104-108.
- Bartlett, W. E. Vocational Maturity: Its Past, Present, and Future Development. Journal of Vocational Behavior, 1971, 1, 217-229.
- Beilin, H. The Application of General Development Principles to the Vocational Area. Journal of Counseling Psychology, 1955, 2, 53-57.
- Beuhler, C. Der menschliche Lebenslauf als psychologisches Problem. Leipzig: Hirzel, 1933. (Super, D. E. The Psychology of Careers. New York: Harper, 1957.)
- Bohn, M. J. Vocational Maturity and Personality. Vocational Guidance Quarterly, December, 1966, 123-126.
- Campbell, R. E., & Parsons, J. L. Readiness for Vocational Planning in Junior High School: A Socio-Economic and Geographical Comparison. Journal of Vocational Behavior, 1972, 2, 401-417.
- Crabtree, P. D., & Hales, L. W. Holland's Hexagonal Model Applied to Rural Youth. Vocational Guidance Quarterly, March 1974, 218-223.
- Crites, J. O. Measurement of Vocational Maturity in Adolescence: 1. Attitude test of the Vocational Development Inventory. Psychological

- Monographs, 1965, 79 (2, Whole No. 595).
- Crites, J. O. Vocational Psychology. New York: McGraw-Hill, 1969.
- Crites, J. O. The Maturity of Vocational Attitudes in Adolescence. Inquiry Series, Monograph No. 2, Washington, D. C.: American Personnel and Guidance Association, 1971.
- Crites, J. O. Theory and Research Handbook for the Career Maturity Inventory. Monterey, California: CTB/McGraw-Hill, 1973.
- Crites, J. O. Problems in the Measurement of Vocational Maturity. Journal of Vocational Behavior, 1974, 4, 25-31.
- Crites, J. O. A Comprehensive Model of Career Development in Early Adulthood. Journal of Vocational Behavior, 1976, 9, 105-118.
- Crites, J. O., & Semler, I. J. Adjustment, Educational Achievement, and Vocational Maturity as Dimensions of Development in Adolescence. Journal of Counseling Psychology, 1967, 14, 6, 489-496.
- Dillard, J. M. Relationship between Career Maturity and Self-Concept of Suburban and Urban Middle-and Urban Lower-Class Preadolescent Black Males. Journal of Vocational Behavior, 1976, 9, 311-320.
- Ehrle, R. A. Vocational Maturity, Vocational Evaluation, and Occupational Information. Vocational Guidance Quarterly, September 1970, 41-45.
- Erikson, E. H. Childhood and Society. New York: Norton, 1963.
- Gesell, A., Ilg, F. L., & Ames, L. B. Youth: The Years From 10 to 16. New York: Harper and Row, 1956.
- Ginzberg, E., Ginsburg, S. W., Axelrod, S., & Herma, J. L. Occupational Choice. New York: Columbia University Press, 1951.
- Ginzberg, E. Career Guidance. New York: McGraw-Hill, 1971.
- Ginzberg, E. Toward a Theory of Occupational Choice: A Restatement. Vocational Guidance Quarterly, March 1972, 3, 169-176.

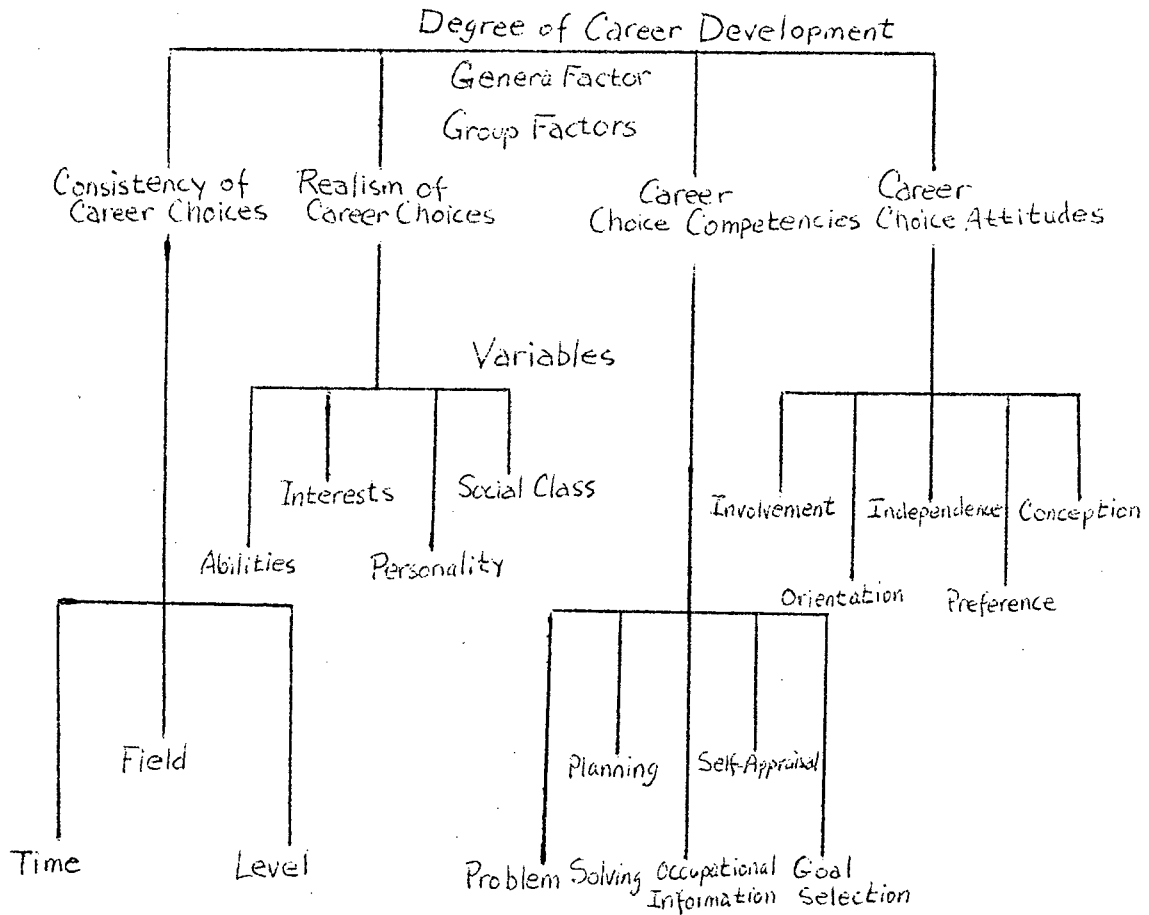
- Gold, S. Sex Stereotyping in the Schools. Education Canada, Spring 1977, 23-27.
- Gribbons, W. D., & Lohnes, P. R. Emerging Careers. New York: Teachers College Press, Teachers College, Columbia University, 1968.
- Herr, E. L., & Enderlein, T. E. Vocational Maturity: The Effects of School, Grade, Curriculum and Sex. Journal of Vocational Behavior, 1976, 8, 227-238.
- Herr, E. L., & Cramer, S. H. Vocational Guidance and Career Development in Schools: Toward a Systems Approach. Boston: Houghton Mifflin, 1972.
- Hoppock, R. Occupational Information. New York: McGraw-Hill, 1967.
- Jones, O. M., Hansen, J. C., & Putnam, B. A. Relationship of Self-Concept and Vocational Maturity to Vocational Preferences of Adolescents. Journal of Vocational Behavior, 1976, 8, 31-40.
- Lawrence, W., & Brown, D. An Investigation of Intelligence, Self-Concept, Socioeconomic Status, Race, and Sex as Predictors of Career Maturity. Journal of Vocational Behavior, 1976, 9, 43-52.
- Lifton, W. M. Vocational Guidance in the Elementary School. Vocational Guidance Quarterly, Winter 1959.
- Lo Cascio, R., Nesselroth, J., & Thomas, M. The Career Development Inventory: Use and Findings with Inner-City Dropouts. Journal of Vocational Behavior, 1976, 8, 285-292.
- Maslow, A. H. Toward a Psychology of Being. New York: Harper, 1954.
- Maynard, P. E., & Hansen, J. C. Vocational Maturity Among Inner-City Youth. Journal of Counseling Psychology, 1970, 5, 400-404.
- Miller, M. F. Relationship of Vocational Maturity to Work Values. Journal of Vocational Behavior, 1974, 5, 367-371.
- Moracco, J. C. Vocational Maturity of Arab and American High School

- Students. Journal of Vocational Behavior, 1976, 8, 367-373.
- Nelson, R. C. Knowledge and Interests Concerning Sixteen Occupations Among Elementary and Secondary School Students. Educational and Psychological Measurements, 1963, 4, 741-754.
- Pietrofesa, J. J., & Splete, H. Career Development: Theory and Research. New York: Grune & Stratton, 1975.
- Roe, A. The Psychology of Occupations. New York: Wiley, 1956.
- Samler, J. Toward a Theoretical Base for Vocational Counseling. Personnel and Guidance Journal, 1953, 1, 34-45.
- Sewell, W. H., & Orenstein, A. M. Community of Residence and Occupational Choice. American Journal of Sociology, 1965, 70, 551-563.
- Smith, E. D., & Herr, E. L. Sex Differences in the Maturation of Vocational Attitudes Among Adolescents. Vocational Guidance Quarterly, March 1972, 177-182.
- Sorenson, G. Review of Career Maturity Inventory. Measurement and Evaluation in Guidance, 1974, 1, 54-57.
- Stevic, R., & Uhlig, G. Occupational Aspirations of Selected Appalachian Youth. Personnel and Guidance Journal, 1967, 45, 435-439.
- Super, D. E. A Theory of Vocational Development. American Psychologist, 1953, 8, 185-190.
- Super, D. E. The Psychology of Careers. New York: Harper & Row, 1957.
- Super, D. E., & Overstreet, P. L. The Vocational Maturity of Ninth-Grade Boys. New York: Bureau of Publications, Teachers College, Columbia University, 1960.
- Super, D. E., Starishevsky, R., Matlin, N., & Jordaan, J. P. Career Development: Self-Concept Theory. New York: College Entrance Examination Board, 1963.

- Super, D. E. Vocational Development Theory: Persons, Positions, and Processes. Counseling Psychologist, 1969, 1, 2-9.
- Tiedeman, D. V. Decision and Vocational Development: A Paradigm and Its Implications. Personnel and Guidance Journal, 1961, 40, 15-20.
- Tiedeman, D. V., & O'Hara, R. P. Career Development: Choice and Adjustment. New York: College Entrance Examination-Board, 1963.
- Tolbert, E. L. Counseling for Career Development. Boston: Houghton Mifflin, 1974.
- Warren, P. J. Trends in Non-Urban School Systems. Education Canada. Spring 1977, 4-11.
- Wehrly, B. L. Childrens' Occupational Knowledge. Vocational Guidance Journal, December 1973, 124-129.
- Westbrook, B. W. Interrelationship of Career Choice Competencies and Career Choice Attitudes of Ninth-Grade Pupils: Testing Hypotheses Derived from Crites' Model of Career Maturity. Journal of Vocational Behavior, 1976a, 8, 1-12.
- Westbrook, B. W. The Relationship between Career Choice Attitudes and Career Choice Competencies of Ninth-Grade Pupils. Journal of Vocational Behavior, 1976b, 9, 377-383.

APPENDICES

## APPENDIX A

A MODEL OF CAREER MATURITY IN ADOLESCENCE<sup>1</sup>

1. Adapted from Crites, J. O. Theory and Research Handbook for the Career Maturity Inventory. Monterey, California: CTE/McGraw-Hill, 1973.

## APPENDIX B

SCHOOL DISTRICTS WITH OVER 15% OF LABOUR FORCE  
INVOLVED IN PRIMARY INDUSTRY

School District No.	Percentage Total	Farming, Fishing Hunting	Forestry Mining
01 Fernie	15.0	2.6	12.4
03 Kimberley	15.7	2.8	13.7
10 Arrow Lakes	18.5	3.8	14.7
13 Kettle Valley	24.0	13.4	10.6
14 Southern Okanagan	23.4	20.9	2.5
16 Keremeos	33.1	28.4	4.7
21 Armstrong-Spallumcheen	23.7	20.2	3.4
31 Merritt	19.0	6.0	13.0
34 Abbotsford	17.3	16.5	0.8
48 Howe Sound	15.3	1.3	14.0
49 Ocean Falls	20.2	11.1	9.1
50 Queen Charlotte	19.4	5.5	13.9
55 Burns Lake	19.8	7.5	12.3
56 Nechako	16.6	6.4	10.2
60 Peace River North	17.1	11.6	5.5
66 Lake Cowichan	16.4	0.5	15.9
72 Campbell River	16.0	3.0	13.0
75 Mission	16.2	9.4	6.8
76 Agassiz-Harrison	20.0	11.9	8.1
85 Vancouver Island North	23.2	3.9	19.3
86 Creston-Kaslo	19.9	11.9	8.0
87 Stikine	15.1	2.2	12.9
89 Shuswap	17.6	11.3	6.3

1. Fung, W. et al. Organization of Secondary Schools and Elementary and Secondary Class Sizes 1975-1976 (75-5433) Vancouver: B. C. Research: Educational Data Services, Division of Communications, British Columbia Department of Education, March 1976.

## APPENDIX C

## STUDENT QUESTIONNAIRE

This questionnaire will assist me a great deal. Please answer each question to the best of your knowledge. If you do not wish to answer a question for whatever reason, you may leave that item out. When completed, your answers will remain strictly confidential.

1. Age \_\_\_\_\_ years.
2. Sex M or F \_\_\_\_\_.
3. Date of birth: day \_\_\_\_\_ month \_\_\_\_\_ year \_\_\_\_\_.
4. Place of birth: Town \_\_\_\_\_ Province \_\_\_\_\_.
5. What is your Father's occupation? \_\_\_\_\_.
6. What is your Mother's occupation? \_\_\_\_\_.
7. What is the number of children in your family? (including yourself)  
\_\_\_\_\_.
8. How long have you lived in this area? \_\_\_\_\_ years.
9. What do you plan to do upon finishing school? \_\_\_\_\_  
\_\_\_\_\_

## APPENDIX D

## SAMPLE OF LETTER OF REQUEST TO SCHOOL DISTRICT SUPERINTENDENTS

I am a Master of Arts candidate in Counselling Psychology at the University of British Columbia. At present I am working on a thesis in partial fulfillment of my degree requirements. My area of interest is in the vocational/career development of high school students in their early adolescent years.

Career counselling has undergone a number of changes in the past three decades, the emphasis having shifted from a focus on "trait-and-factor" type of vocational guidance to a focus on the process of career development. The majority of theoretical and empirical research studies have indicated that occupational choice is a life-long developmental process, particularly crucial during early adolescence, when students are asked to make curricular and course choices which will affect their future. The quality of the choices made by adolescents are predictive of their occupational, educational, and personal adjustment during later years. One of the criteria of effective choice-making is the level of the student's career maturity.

Career Maturity is a developmental concept introduced by Donald E. Super in 1953. This concept has been divided into the following dimensions: Consistency of Career Choices, Realism of Career Choices, Career Choice Competencies, and Career Choice Attitudes. The latter two dimensions can be measured by the Career Maturity Inventory developed by John O. Crites of Harvard University.

The purpose of my study is to survey the Career Maturity and Occupational Information of grade nine students in rural and urban areas of British Columbia in order to assess the need for career education courses.

My needs are to administer the Career Maturity Inventory to about ninety grade nine students in your district. Preferences would be an equal number of boys and girls and that they be selected from academic courses.

This inventory should not take more than one hour to administer, and anonymity of both students and schools will be respected. I would be pleased to return to the schools to explain to interested students and staff the results of the study when completed.

I would like to telephone you on this matter in a few day's time.  
Your cooperation and assistance in this study will be greatly appreciated.

Yours very truly,

George J. Tesla, B.A.  
Graduate Student  
Department of Counselling Psychology  
University of British Columbia

William A Borgen, Ph.D.  
Assistant Professor (Supervisor)  
Department of Counselling Psychology  
University of British Columbia

## APPENDIX E

## RESPONSE HIGHLIGHTS OF STUDENT QUESTIONNAIRE

Comparison of Fathers'<sup>a</sup> Occupation Types<sup>b</sup>

Group	Rural Occupation	Urban Occupation
Rural Males	33%	67%
Rural Females	40	60
Urban Males	7	93
Urban Females	12	88

Students Undecided About Future Occupations<sup>c</sup>

Group	Percent Undecided
Rural Males	28%
Rural Females	27%
Urban Males	37%
Urban Females	35%

<sup>a</sup>The term "Father" is intended to mean "head of household".

<sup>b</sup>Rural occupation types include all occupations directly concerned with primary industry such as farming, fishing, mining, and logging.

<sup>c</sup>These include students who responded with two or more unrelated occupations, such as social worker and engineer.

Note: Responses to other items in the Student Questionnaire were deemed to be of limited value to the study, or were too general for analysis.