

THE UNIVERSITY OF MANITOBA

EXPLORATION OF ADOLESCENT CAREER DECISION BEHAVIORS
GRADES 8 TO 12

by

Larry R. Gagne

A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements for
the Degree of Master of Education

Department of Educational Psychology
Winnipeg, Manitoba

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ABSTRACT

The purpose of this cross-sectional study was to examine the variation of specific career decision behaviors of adolescents across grades 8 to 12. Three hundred and fifty-four students attending grades 8 to 12 classes in the Red River School Division participated in the study. Four measures were administered to the students: the Career Maturity Inventory, Attitude Scale, Counseling Form B-1, which yielded a total Attitude score and five subscale scores; the Assessment of Career Development, Career Planning Knowledge Scale; the Career Decision Scale; and the Career Development Inventory, Extent of Career Planning Scale. Mean scores by grade level and by sex were obtained for these nine variables: Career Maturity Attitude, Decisiveness, Involvement, Independence, Orientation, Compromise, Career Planning Knowledge, Vocational Indecision, and Extent of Career Planning. Grade-point average for each student was obtained from school records.

Graphic illustrations to describe the differences in mean scores across the grades were drawn. Analysis of variance and t-test procedures to examine size of differences in mean scores between grades and between sexes were used. Correlation coefficients to examine relationships among the nine career decision variables, and relationships between each of the nine variables and students' grade-point averages were also computed.

Results of the study indicated that, in general and in accordance with theory, career decision variable mean scores changed across grades 8 to 12. Within grade levels, some career decision behavior sex differences were found. While Career Maturity Attitude, Career Planning

Knowledge, Vocational Indecision, and Extent of Career Planning were found to be related, study results suggest that these specific career decision behaviors should be treated as independent components of career decision-making.

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CHAPTER I

INTRODUCTION

The process of adolescent development across the high school years and into productive and satisfying adult careers has long been the concern of schools and of counselling. Crites (1976) suggested that it is hard to imagine a conceptual problem more salient than that of how and why young people enter and adjust to their jobs as they do. In a world of accelerating changes, young people are likely to be uncertain about the relationship between what they know about themselves and what they imagine for themselves tomorrow. According to Jepsen (1976), a vast number of high school juniors and seniors lack the necessary knowledge to make reasoned decisions about their places in the world of work.

The fact that adolescents vary greatly in career maturity, in the planfulness of their approach to life, in their tendency to anticipate choices which they will have to make, in their exploration of alternatives, and in their tendency to acquire relevant information suggests that educators need data on these characteristics when planning curricula, researchers need them in evaluating programs, and counsellors need means of assessing these characteristics as a preliminary to educational and vocational counselling (Super, 1974). Knowing students' career maturity helps counsellors to establish a baseline for charting their career maturation and for analyzing the quality of career decision-making of these students (Crites, 1978).

Throughout the 1970's, there were many trends that influenced the

development and use of tests for career counselling, guidance, and education. Among these were the introduction and widespread adoption of career education programs, the development and administration of wide-scale assessment programs at both local and national levels, and the development of new applications of computer technology in the areas of test scoring, reporting, and computerized guidance systems (Miller, 1982). These developments resulted in an increased interest and awareness in the uses of testing in career planning that stimulated efforts to develop new instruments or revise existing instruments and to develop new scoring and reporting procedures. These measures reflected a clearer understanding of the nature of career development and of specific attitudes and skills important to the career planning process. Some of these instruments were new. Others progressed from the research and development phase to become generally available for use on a commercial basis. Still others represented the combination or clustering of existing tests into one instrument.

This variety of career development instruments posed the practical problems of instrument selection and score interpretations for counselors, evaluators, and researchers (Jepsen & Prediger, 1981). Were career development dimensions as diverse as the scale titles suggested? To what extent were the scales interchangeable? Did scores on one instrument duplicate scores on other instruments? Could one instrument cover all dimensions of career development? Did scores place students in approximately the same order as achievement scores?

In an attempt to address the above questions, Jepsen and Prediger (1981) examined common and unique dimensions of adolescent career development as assessed by several well-established instruments. Their

focus was on paper-and-pencil, objectively scored tests and inventories which appeared to assess aspects of career decision-making and planning. Nineteen scores from six career development instruments and one achievement test battery were obtained from a group of 11th graders who had not been involved in any systematic career guidance activities. By means of factor analysis statistical procedures, they identified three main clusters of measures. The first cluster represented the convergence of five scales: the Assessment of Career Decision-Making Exploration, Crystallization, and Choice stages, the Assessment of Career Development Certainty of Choice, and the Career Decision Scale. All five seemed to measure certainty about occupational choice. The second cluster represented the convergence of four scales: Career Development Inventory, World of Work Information Scale, and Career Decision-Making Scale; Career Skills Assessment Program, Career Decision-Making Skills Scale; and Assessment of Career Development, Career Planning Knowledge Scale. The similar quality assessed in this cluster was the ability to conceptualize career decisions. The third cluster comprised one convergent pair: the Career Development Inventory, Extent of Planning Scale, and the Assessment of Career Development, Career Planning Involvement Scale. Those two scales seemed to assess the frequency of planning and information-seeking activity. The Career Maturity Inventory, Attitude Scale, was moderately correlated with all of the instruments from each of the clusters.

Jepsen and Prediger (1981) recommended that instrument users select at least one instrument from each cluster, if breadth in career development characteristics was desired. If a single inventory giving the broadest coverage was what the user wanted, then it was

suggested that the Career Maturity Inventory, Attitude Scale, be considered.

Overview of the Research

The present investigation explored the differences in specific career decision behaviors of grades 8 to 12 students from a rural Manitoba school population. Career decision behaviors were broadly conceived as those observable changes during the adolescent years that exemplify progress toward a set of career commitments (Warner & Jepsen, 1979). Four selected measures were used to analyze nine specific variables which provided a basis for speculation about underlying dimensions and the overall structure of adolescent career development: Crites' Career Maturity Inventory, Attitude Scale (Counseling Form B-1); American College Testing Program's Assessment of Career Development, Career Planning Knowledge Scale; Osipow's Career Decision Scale; and Super's Career Development Inventory, Extent of Career Planning Scale. Each of the three clusters outlined by Jepsen and Prediger (1981) were represented in the study. Cluster 1, certainty about occupational choice, was represented by the Career Decision Scale. Cluster 2, the ability to conceptualize career decisions, was represented by the Career Planning Knowledge Scale. Cluster 3, the frequency of planning and information-seeking activity, was represented by the Extent of Career Planning Scale. The Career Maturity Attitude Scale was used to add overall breadth of measurement. No claim, however, was made that these scores reflected a complete domain of adolescent career development.

Purpose of the Study

The main purpose of this study was to investigate the variation of group mean scores on measures of selected career decision behaviors for independent samples of grades 8 to 12 students. The resulting data were analyzed for the following research questions:

1. Does each career decision behavior differ across grades 8 to 12 in the direction predicted by theory?
 - a. Does the Career Maturity Attitude score increase?
 - b. Does the degree of Decisiveness in career decision-making increase?
 - c. Does the degree of Involvement in career decision-making increase?
 - d. Does the degree of Independence in career decision-making increase?
 - e. Does the level of Orientation to career decision-making increase?
 - f. Does the degree of Compromise in career decision-making increase?
 - g. Does the amount of Career Planning Knowledge increase?
 - h. Does the degree of Vocational Indecision decrease?
 - i. Does the Extent of Career Planning increase?
2. Are there sex differences in career decision behaviors within each grade level?
3. How do the career decision behaviors relate to each other within each grade level?
4. How does grade-point average relate to each of the nine career decision behaviors?

Concept of Career Development

As recently as 25 years ago, the concept of career development was largely unknown and unarticulated, although it had been presaged by Carter's (1940) conceptualization of the formation of career attitudes in adolescence and Super's (1942) use of life stages in the analysis of career exploration and establishment (Crites, 1978). The prevailing views of career behavior before the 1950's were almost entirely non-developmental. These views characterized career decision-making as a "time-bound, largely static event which occurred at the crossroads of life, usually upon high school graduation, when an adolescent did a self-assessment, analyzed the world of work, and then decided what to do" (Crites, 1978, p.3). It was assumed that career choice was a more or less isolated experience in the ongoing life activities of the individual, having little or no effect upon subsequent success and satisfaction. Seldom was attention given to either the antecedents or the consequences of the choice act.

This concept of career choice involved a host of trait-and-factor measures (aptitudes, interests, and personality characteristics) which were designed to facilitate the process of matching people to jobs. This model of career choice and the process of a rationalistically oriented career counselling built upon it still persists; however, "it is in an incipient decline and is being challenged by contemporary emphasis upon career education and development" (Crites, 1978, p.3).

The newer ways of conceptualizing the young person's relationship to school and work had their origins in the recognition of the developmental context within which the processes of learning and decision-making occur (Crites, 1978). Psychologists such as Buehler (1933),

Pressey and Kuhlen (1939), and Super (1942) were early in applying the concept of life stages to vocational choice and adjustment. It was a study by Ginzberg and Associates (1951), followed by the continuing work of Havighurst (1953), Super and Associates (1953, 1957, 1963), Tiedeman and O'Hara (1963), and Katz (1963), among others, which directed the attention of psychologists and counsellors to the possible contributions of a developmental approach (Super, 1974).

Ginzberg and Associates (1951) were among the first to observe that the choice of an occupation was a process, not simply a one-time event. It extended approximately from age ten to twenty-one and progressed through differentiable periods of deliberation, culminating in a more or less satisfactory and satisfying compromise between personal needs and occupational realities. Super (1953) characterized the career development process as ongoing, continuous, and generally irreversible. It was a process of compromise and synthesis within which his primary construct, the development of the self-concept, operated (Herr & Cramer, 1979). Vocational behavior was seen as developing from less complex and less effective behavior to more complex and more effective behavior with increasing age from childhood well into adulthood. Furthermore, it became increasingly reality-oriented and goal-directed.

Several theories focusing on the developmental approach have emerged during the past three decades. Others, whose work fits with Ginzberg's and Super's, include Tiedeman and O'Hara (1963), Crites (1969, 1976), Katz (1966), Gibbons and Lohnes (1966), Jepsen (1976), and Jordaan (1979).

Career Maturity

Career maturity is a construct which naturally emerges from developmentally-oriented career theories. Its existence is inferred from a number of observable facts (Jordaan, 1979). Some individuals commit themselves to an occupation fairly early in their lives, while others never do or do so only after a prolonged period of trial and error. Some have realistic career objectives and are able to attain them, while others do not. Some individuals feel secure in their occupations, while others have only a tenuous grip on them. Some individuals are satisfied with their jobs and the progress they have made, while others are not. In short, some individuals are more successful than others in choosing, entering, and progressing in an occupation they find satisfying. One reason for the difference would seem to be that some people are more aware than others of the decisions that must be made at various points in their lives. As a consequence, they are more ready and better equipped to make and carry out decisions.

The term "career maturity" had its roots in the Career Pattern Study undertaken initially by Super, Crites, Hummel, Moser, Overstreet and Warnath in 1957. In that study, the major question considered was whether 9th grade boys were ready to make the curricular, essentially prevocational, decisions required of them by typical school systems. A theoretical definition of career maturity was developed whereby career maturity denoted the place reached on a continuum of vocational (career) development from exploration to decline. Career maturity seemed to proceed along five dimensions: orientation to vocational choice, information and planning, consistency of vocational choice, crystallization of traits, and wisdom of vocational preferences. An

individual's career maturity could thus be defined by his or her standing along these dimensions in relation to either chronological age and expected life stage, or to the behavior of others coping with the same developmental tasks (Super et al, 1957).

Crites (1961) later defined vocational (career) maturity as that construct which referred to the maturity of an individual's vocational behavior as indicated by the similarity between his behavior and that of the oldest individuals in his vocational life stage (Crites, 1968). One assumption of the concept of career maturity was that as one got older, one was more able to discriminate effectively and realistically among available courses of action (Crites, 1974).

Direction of Growth in Career Development

Development implies growth, evolution, progression, and maturation. A number of researchers and theorists, among them Crites, Ginzberg, Gribbons, Lohnes, Jordaan, Heyde, Tiedeman, O'Hara, and Super, have attempted to delineate the directions in which career development might be expected to proceed. These directions, usually conceived of as dimensions or indices of vocational maturity, involve:

1. Greater familiarity with and more effective use of environmental resources and opportunities.
2. Greater awareness of and concern with impending and eventual choices.
3. More effective and more systematic exploration of one's self and one's environment.
4. More extensive and more specific educational and occupational information.

5. Better understanding of the factors to be considered in making various kinds of choices.
6. Greater awareness of factors which might upset or delay one's plans and of ways of circumventing or coping with these contingencies.
7. Greater willingness to assume personal responsibility for one's decisions.
8. Greater awareness of one's ability to determine the course and outcomes of events through the kinds of decisions one makes.
9. Greater awareness of personal assets and deficits and of their implications for choice.
10. A clearer, more complete, better integrated, and more realistic self-concept.
11. The translation of this self-concept first into general and then into more specific occupational terms.
12. Greater commitment to one's goals and subsequently to one's occupation.
13. More specific, stable, and realistic objectives.
14. More specific plans for achieving these objectives.
15. Goals, and eventually an occupation, which are more in accord with one's interests, abilities, values, personality traits, self-concept, work experience, and job skills.
16. Ability to compromise between desire and reality, between the hoped for and the feasible.
17. The selection of educational and occupational environments which are more compatible with one's personality and life style.
18. Stable employment offering job security and prospects of a decent livelihood.

It therefore seems realistic to expect the level of career development to increase systematically with age over the high school years. Studies of various aspects of career development have supported this expectation (Noeth & Prediger, 1978). For example, Jordaan (1974) reported that, from grades 9 to 12, boys in the Career Pattern Study became more aware of the significant characteristics of occupations, obtained more information about occupations which interested them, and developed more specific plans for obtaining further education, job training, and on-the-job experience. Jepsen (1976) showed that students in the 12th grade had more complex information strategies and more elaborate rationales supporting their occupational choices than they had in the 9th grade. Gibbons and Lohnes (1968) reported growth from grades 8 to 10 in various aspects of readiness for vocational planning. Ansell and Hansen (1971) found similar results across grades 8 through 12 in a cross-sectional study of lower-and middle-class high school boys.

Several longitudinal studies of career-related attitudes have been developed. Crites (1975) found changes across grades 7 through 12, and Herr and Enderlein (1976) reported similar results across grades 9 through 12. In fact, the latter study illustrated that while vocational (career) maturity, as measured by the Career Maturity Inventory, does proceed monotonically (incrementally) by grade level, school effects, curriculum effects, and sex differences also influence the rate and level of vocational maturity which occurs. Herr and Enderlein (1976) also concluded that the vocational (career) maturity of girls and boys differed, with the former maturing earlier and advancing further than boys during the adolescent period.

In a cross-sectional study of various knowledge components of career development, Westbrook and Parry-Hill (1963) found increases for each grade across grades 6 to 9 (Noeth & Prediger, 1978). Noeth and Prediger (1978) examined trends in major components of career development across grades 8 to 12 and found further evidence that career development systematically increased with age over the high school years. Results for the five scales on which growth was observed suggested that students became more knowledgeable about job duties, psychosocial aspects of work, worker attributes, and the amounts and types of training/education usually associated with various occupations. The results also indicated that students became more knowledgeable about the career planning process, sought more information, took part in more self-career exploratory activities, and better focused their exploratory behaviors on occupational preferences. Students also showed significant increases in career planning involvement from grades 8 to 12. These trends appeared to be a function of what could be termed normal growth (Noeth & Prediger, 1978). Evidence that various aspects of career development develop over the early adolescent years is thus substantial.

Limitations

In this study, a cross-sectional design using independent samples from each grade level was used over a longitudinal approach to allow the researcher to observe students of varying grades simultaneously. A longitudinal design would have included one group of students being observed across grades 8 through 12. The greatest advantage of the cross-sectional design was one of economy. It was not necessary to wait

until one group of students progressed from grades 8 through 12 since groups of individuals were selected at the different grade levels. The cross-sectional approach, however, assumed that the groups of students selected at different grade levels were comparable. In a longitudinal approach, groups of students would not only be comparable. They would be identical, provided that the repeated measurements did not lead to either practice effects or fatigue.

Trained counsellors and teachers from the four schools administered the tests to their respective groups of students. Testing of each grade level was performed during one session.

The samples used in this study represented all students in grades 8 to 12 presently attending schools in one rural Manitoba school division. While the samples were not representative of all groups of grades 8 to 12 students from the province, all grades 8 to 12 students in this division were included to improve the quality of the sampling procedure.

Definition of Terms

The nomenclature for the variables measured by the instruments used in this study was derived from several sources, including theoretical and general psychological terms.

Career Maturity Attitude was defined as the total score obtained on 50 of the 75 items on the Career Maturity Inventory, Attitude Scale (Counseling Form B-1). Career Maturity Attitude referred to the maturity of an individual's vocational behavior as indicated by the

similarity between his attitudinal behavior and that of the oldest individuals in his vocational life stage (Crites, 1961).

Five variables, rationally deduced from career development theory, constituted the Attitude Scale of the Career Maturity Inventory (Counseling Form):

Decisiveness in career decision-making was defined as the score obtained on 10 specific items of the Career Maturity Inventory (Counseling Form). Decisiveness referred to the extent to which an individual was definite about making a career choice (Crites, 1978).

Involvement in career decision-making was defined as the score obtained on 10 specific items of the Career Maturity Inventory (Counseling Form). Involvement constituted the extent to which an individual was actively participating in the process of making a choice (Crites, 1978).

Independence in career decision-making was measured by the score obtained on 10 specific items of the Career Maturity Inventory (Counseling Form). Independence characterized the extent to which an individual relied upon others in the choice of an occupation (Crites, 1978).

Orientation to career decision-making was defined as the score obtained on 10 specific items of the Career Maturity Inventory (Counseling Form). Orientation referred to the extent to which an individual was task-or-pleasure-oriented in his or her attitude toward work and the values that he or she placed upon work (Crites, 1978).

Compromise in career decision-making was measured by the score obtained on seven items of the Career Maturity Inventory (Counseling Form). Compromise depicted the extent to which an individual was

willing to compromise between needs and realities (Crites, 1978).

Career Planning Knowledge was operationally defined as the score obtained on the 40 item scale, Career Planning Knowledge of the Assessment of Career Development Inventory, developed by the American College Testing Program. This scale assessed the knowledge of basic career development principles, reality factors and steps involved in the career planning process (ACTP, 1974).

Vocational Indecision was measured by the score obtained on the 16 item Career Decision Scale developed by Osipow (1976) and adapted for high school students by Hartman and Hartman (1982). Vocational Indecision was related to the elements involving lack of structure and confidence with respect to dealing with vocational decision-making, choice anxiety leading to avoiding decision-making, the possibility of external barriers to preferred choices, difficulty in choosing from several attractive possibilities, and personal conflict of some type in career decision-making (Osipow, 1980).

Extent of Career Planning was defined as the score obtained on the 20 item Extent of Career Planning Scale selected from the Career Development Inventory (School Form). Extent of Career Planning implied the awareness of the need to obtain and use information, to look ahead, and to make tentative plans (Thompson et al., 1981).

CHAPTER II

REVIEW OF RELATED LITERATURE

Approaches to Career Development and Choice

"Even though career development theory is, as yet, fragmented and incomplete, what is presently known provides a beginning basis for programmatic efforts to spur the development of effective career behavior. If one views the confluence of approaches, theory, and research with objectivity and minimum timidity, one finds tentative sets of constructs and propositions to explain differential career behavior and decision-making, as well as to provide guidelines for aiding such processes" (Herr & Cramer, 1979, p. 68).

Osipow (1968) explained that to categorize models of behavioral phenomena of any kind ran the risk of oversimplification. Nevertheless, some classification of the assorted explanatory motifs was a prerequisite for intelligible discussion about them. For his purpose, four distinct approaches to thinking about career development fell into place:

1. Trait-factor Theories (Parsons, 1909; Hull, 1928; Kitson, 1925)
2. Sociological Model - Reality or Accident Theory (Caplow, 1954; Hollingshead, 1949; Miller and Form, 1951)
3. Developmental or Self-concept Theory (Buehler, 1933; Super, 1957; Samler, 1953; Ginzberg, 1951; Rogers, 1951)
4. Personality Theories (Hoppock, 1957; Holland, 1959; Roe, 1957).

Osipow (1968) stressed that these models were closely intertwined and in many instances drew heavily upon one another both in terms of

actual practice and in empirical research.

In a chapter based on a thorough survey of the literature, Herr and Cramer (1979) categorized theories of career development as follows:

Trait-factor or Actuarial Approach

The individual is regarded within a pattern of traits - interests, aptitudes, achievements, personality characteristics - which can be identified through objective means, usually psychological tests or inventories. These traits, measures of which are termed career decision "content", are then profiled to represent the individual's potential. A great many variables enter into career decision-making: work values, occupational stereotypes and expectations, residence, family, socio-economic status, child-rearing practices, general adjustment, personality factors including needs and propensity for risk-taking, educational achievement, level of aspiration, and sex. Each of these is influenced and overlaps with the others. They are thought to act in a dynamic interrelationship (Herr & Cramer, 1979).

Decision Theory

Increasingly apparent in the professional literature are attempts to theorize about educational and occupational choice through the use of decision models. In one sense, these approaches are economic in origin (Herr & Cramer, 1979). A fundamental assumption in many of these decision models is that one chooses a career or an occupational goal that will maximize the gain and minimize the loss. This gain or loss is not necessarily money but anything of value to the individual.

Implicit in such an approach is the expectation that an individual can be assisted to predict the outcomes of each alternative and the probability of such outcomes.

Situational and Sociological Theories

Much floundering in decision-making, vocationalization, or career development stems from situational circumstances or the social structure of which one is a part. This is due both to limited avenues through which one can implement choice and from limited knowledge of available opportunities (Herr & Cramer, 1979). Chance becomes a determinant of personal opportunities for choice. Sociological factors such as one's social group and the social structure exert an influence on vocational (career) development and choice. As well, geography, the historical moment in time, occupational characteristics, and political factors affect the career development of any individual. Stopping there, however, understates the situational effects on choice, because, while interacting with such external circumstances, the individual also incorporates and will act upon a belief system held by family, peers, neighborhood, ethnic, and religious groups (Herr & Cramer, 1979).

Psychological Theories

Psychological approaches to career development stress intrinsic individual motivation to a greater degree than the other approaches discussed above (Herr & Cramer, 1979). The major assumption of these psychological approaches is that individuals develop certain needs and seek satisfaction of these needs through occupational choices because of differences in personality structure. It is contended that

different occupational areas are populated by persons of different need types or personality types. These approaches develop a classification of personality or need, and then relate it to gratifications available in different environments, occupational or educational.

Developmental Theories

Developmental emphases on career behavior and decision-making differ from the other approaches, not because they reject the latter, but rather because they are typically more inclusive, more concerned with longitudinal expressions of career behavior, and more inclined to highlight the importance of self-concept development across the life span (Herr & Cramer, 1979). These theories focus on developmental stages, tasks, or phases, typically as aspects of a life-long process. The works of Ginzberg (1951) and Super (1953) are major representations of this approach. Their major tenets are presented below.

Ginzberg, Ginsburg, Axelrod, and Herma (1951) were early leaders in speculating about career development as a process which culminated in an occupational choice in one's early twenties. To them, occupational choice was a developmental process; it was not a single decision but a series of decisions made over a period of years. Each step in the process had a meaningful relation to those which preceded and followed (Herr & Cramer, 1979). Values, environmental realities, psychological attributes, educational opportunities, and achievements affected the process. At that time, movement was seen as largely irreversible: one could not go back and take a different option. Compromise between desires and reality entered into the choice, and one had to give up options in order to attain a desired goal. It was also

possible that one could not always utilize one's abilities or realize one's goals to the fullest extent. Vocational decision-making could be portrayed in the following stages:

Fantasy period (before age 11): the child believed he could do whatever he wanted to do. Needs and impulses were translated into occupational choices.

Tentative period (ages 11-17): interests, abilities, and values were used in making choices. Choices were tentative, as reality factors were not given adequate consideration. Interests, capacities, and values were considered at subsequent substages. At about age 17, all three factors were brought together and utilized in choosing.

Realistic period (age 17-young adulthood): choices were made in this period. There were compromises between reality factors - job requirements and educational opportunities - and personal factors. Substages of this period included exploration, crystallization, and specification.

Ginzberg later made some major modifications in the theory: the process of vocational choice and development was lifelong and open-ended, irreversibility was no longer considered valid, and optimization replaced compromise (Tolbert, 1974).

Super's (1953) proposal followed Ginzberg's very shortly. Super had provided early input into the Ginzberg (1951) statement but he believed that it was deficient in several respects. In response to those conditions, Super formulated his own theory comprised of ten major propositions, each of which was testable and, indeed, could provide the framework for a longitudinal research study:

1. People differ in their abilities, interests, 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 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 these stages may in turn be subdivided into (a) the fantasy, tentative, and realistic phases of the exploratory stage and (b) the trial and stable phases of the establishment stage.
6. The nature of the career pattern (that is, the occupational level attained and the sequence, frequency, and duration of trial and stable jobs) is determined by the individual's socioeconomic level, mental ability, personality characteristics, and the opportunities to which he is exposed.
7. Development through the life stages can be guided by facilitating the process of maturation of abilities and interests, 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 inher-

ited aptitudes, neural and endocrine make-up, opportunity to play various roles, and evaluations 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 social factors and 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 role which growth and exploratory experiences have led him to consider congenial and appropriate (Herr & Cramer, 1979).

Super (1957) synthesized much of the early work of Buehler (1933), Hoppock (1935), and Ginzberg (1951) in his longitudinal attempt to focus developmental principles on the staging and the determination of career patterns. He gave prominence to an individual's mastery of increasingly complex tasks at different stages of career development. By synthesizing the work of Miller and Form (1951) and of Havighurst (1953), he prepared an outline of his own perceptions of life stage phenomena:

Growth (Birth-14 years). The key concept develops through identification with key figures in the family and school. Needs and fantasy are dominant early in this stage. Interests and abilities become more important with increasing social participation and reality testing. The individual learns behaviors associated with self-help, social

interaction, self-direction, industrialness, goal setting, and persistence. Substages are: fantasy (4-10 years), interest (11-12 years), and abilities (13-14 years). The major task is the development of a picture of the kind of person one is, an orientation to the world of work, and an understanding of the meaning of work.

Exploration (15 years - 24 years). Self-examination, role try-outs, and occupational exploration take place in school, leisure activities, part-time, and full-time work. Substages are: tentative (15-17 years), transition (18-21 years), and trial-little commitment (22-24 years). The main tasks are to crystallize, specify, and implement a vocational preference. By considering needs, interests, abilities, values, and opportunities, the individual identifies possible fields and levels of work, converts a generalized choice to a more specific choice, and tries out this choice as a potential life work. If the job is not appropriate, the individual may reinstitute the process of crystallizing, specifying, and implementing a preference.

Establishment (25 years - 44 years). Having found an appropriate field, the individual makes an effort to establish a permanent place in it. Changes which occur are changes of position, job, or employer, not of occupation. Substages are: Trial-Commitment and Stabilization (25-30 years) and Advancement (31-44 years). Consolidation (Settling down) is the key event in the first substage while creativity and superior performance are clearly reflected in the second substage.

Maintenance (45 years - 64 years). Preservation of achieved status and gains appears to be the main concern of the individual during this stage. Little new ground seems to be broken while the individual tries to maintain the present status.

Decline (65 years -). As physical and mental powers decline, work activity changes and in due course ceases. Substages are: Deceleration (65-70 years) and Retirement (71 on). The pace of work slackens, duties are shifted, and part-time jobs often replace full-time occupations. Retirement varies with complete cessation of work or shift to part-time, volunteer, or leisure activities.

For nearly a quarter of a century, Super and his colleagues have carried on the Career Pattern Study to attempt to validate and refine his own theory (Herr & Cramer, 1979).

Review of Related Research

Research on both the longitudinal and situational aspects of career development has been increasing for the past two decades (Herr & Enderlein, 1976). The Career Pattern Study, initiated by Super in the early 1950's and finally completed in 1973, shed important light on the direction and magnitude of changes which take place during the high school years. While paying special attention to attributes and behaviors which were thought to be indicative of how well an individual was coping with a particular developmental task, the Career Pattern Study also studied those attitudes and behaviors which might be required for, or might result from, the completion of a given developmental task (Jordaan, 1979). These included wisdom of preference, occupational information, work experience, acceptance of responsibility, planning, implementation of preference, use of resources, awareness of contingency factors, and weighing of alternatives. The more important findings were that 12th grade boys were more aware of the significant characteristics of occupations and had more information about occupa-

tions which interested them than they did in the 9th grade; that they had more specific plans for obtaining the required training, education, and on-the-job experience; and that they showed greater readiness to assume personal responsibility for securing a beginning job or the required education and training. Unexpected and perhaps crucial to an understanding of the events of the post-high school years was the finding that 12th grade preferences were not more realistic or more appropriate than 9th grade preferences. At age 18, about half of the subjects were still entertaining goals which were not in keeping with their socioeconomic circumstances, their measured interests, or their level of ability. While they were better informed about occupations than they were in the 9th grade, most 18 year olds still knew relatively little about the occupation they thought they might enter. Only about half had well-thought-out plans for actually getting the needed training, education, or beginning job or had done something to implement the plans that they had. The importance of planning as a dimension of career maturity was well-established by the findings of this Career Pattern Study (Crites, 1978).

Like the Career Pattern Study, the Career Development Study by Gibbons and Lohnes (1966) was a longitudinal study which followed a group of subjects through adolescence to adulthood. Unlike the Career Pattern Study, it included girls as well as boys. The subjects were studied at two-year intervals over an 11-year period beginning in the 8th grade. Focus in the early part of the study was on assessing "readiness for vocational planning" as indicated by eight types of information elicited during a 30 to 40 minute interview. The subjects' responses were scaled to yield eight Readiness for Vocational Planning

scores, each of which was designed to represent a different aspect or dimension of vocational maturity. Tenth graders scored significantly higher than eighth graders on all of the following scales:

1. Factors in curriculum choice
2. Factors in occupational choice
3. Verbalized strengths and weaknesses
4. Accuracy of self-appraisal
5. Evidence for self-ratings
6. Interests (and their relation to occupational choices)
7. Values (and their relation to occupational choices)
8. Independence of choice.

These findings, as did the Career Pattern Study data, indicated that older students differed vocationally from younger students (Jordaan, 1979).

Crites' Vocational Development Project (1961) merits specific attention because of the longitudinal nature of the design, the instruments that were developed, the specific variables that were covered, and the systematic research program that was followed. The purpose of the project emerged from the need to develop a standardized, easy-to-use measure of vocational maturity. Standardization of the Attitude Scale and the Competence Scale involved approximately 5,000 elementary and high school students in grades 5-12. Results indicated that the construct "career maturity" increased monotonically (incrementally) across age and grade.

In a longitudinal study of occupational decision processes over the high school years, Jepsen (1976) examined five developmental trends:

1. Exclusion: change from considering many occupations as alternatives,

to considering a few alternatives, and finally to selecting one.

2. Consistency: change from considering occupations from discrepant levels and fields to considering occupations from similar levels and fields.
3. Specification: change from choices expressed as fields of work, to choices expressed as occupations, and finally to choices expressed as one position or job.
4. Choice basis complexity: change from considering a few global factors to considering many specified factors.
5. Resource utilization: change from occasional to frequent use of information resources.

Growth was defined as increased frequency in classes of behavior from early 9th grade to late 12th grade. Results generally substantiated developmental trends regarding increased choice basis complexity and greater resource utilization. Females tended to express occupational choices with greater specificity in the 12th grade than in the 9th grade, thus supporting the Specification trend. Trends toward naming less discrepant choices were not supported in this study and changes were clearly contradictory for the Exclusion trend. Concepts from Ginzberg's (1951) theory suggest the following summary: Students expanded their basis for occupational choices while change toward greater choice crystallization was less evident. Perhaps crystallized choices appear later than do complex rationale. Such speculation offers challenging hypotheses for further research (Jepsen, 1976).

Noeth and Prediger (1978) performed a longitudinal study across grades 9 through 12, using the Assessment of Career Development (ACD).

The following ACD scales were used: Knowledge of Occupational Characteristics, Knowledge of Occupational Preparation Requirements, Career Planning Knowledge, Career Planning Involvement, and Exploratory Occupational Experiences. These scales were used because they assessed major components of career development. There appeared to be a real need to examine growth in these two areas of career development: knowledge and involvement (Noeth & Prediger, 1978).

An analysis of vocational indecision was seen as important by Breton (1972). This concept appeared to have been examined mainly through the study of individuals who already had reached a career decision; an uncrystallized goal generally had been considered as characteristic of the early stages of this process. A better understanding of the decision-making or developmental process would be expected by the study of the factors that appeared to hinder its smooth unfolding.

In an effort to promote self-counselling about career indecision, Osipow, Carney, Winer, Yanico, and Koschier (1976) developed an instrument to identify barriers which prevented individuals from making career decisions. It appeared that a finite number of relatively discrete circumstances were responsible for the problems that individuals had in reaching appropriate closure and implementation of educational and vocational decisions (Osipow, 1980).

On examining standardized measures of adolescent career development, Jepsen and Prediger (1981) identified four factors which appeared to represent general theoretical constructs of career development. These factors were labelled Cognitive Resources for Decision-Making, Decision-Making Style, Systematic Involvement in Career Decision-

Making, and Decision-Making Stage/Certainty. Underlying these dimensions were variables which could be measured by distinct career development instruments: ability to conceptualize career decisions, certainty about occupational choice, and frequency of planning and information-seeking activity. Evidence also suggested that the Career Maturity Inventory, Attitude Scale, could be used as a single inventory giving the broadest coverage of adolescent career development (Jepsen & Prediger, 1981).

Instruments for Measuring Career Development

In this study, career decision behaviors were assessed by four measurement scales: Crites' Career Maturity Inventory, Attitude Scale (Counseling Form B-1); American College Testing Program's Assessment of Career Development, Career Planning Knowledge Scale; Osipow's Career Decision Scale; and Super's Career Development Inventory, Extent of Career Planning Scale. Research on each is described below.

Career Maturity Inventory, Attitude Scale, Counseling Form B-1

The Career Maturity Inventory (CMI), formerly entitled Vocational Development Inventory (VDI), was conceived and constructed to measure the maturity of attitudes and competencies that are critical to career decision-making (Crites, 1978). Two types of measures were designed by Crites to assess the maturity of these behaviors: the Attitude Scale and the Competence Test. Only the Attitude Scale was used in this study.

Two forms of the Attitude Scale are currently available: Screening Form A-2 and Counseling Form B-1. Both are paper-and-pencil

inventories consisting of True-False statements of attitudes toward work. Screening Form A-2 contains 50 items, takes about 30 minutes to administer and yields one total Career Maturity Attitude score. Counseling Form B-1 consists of 75 items and takes about 40 minutes to administer. Counseling Form B-1, used in this study, was designed to provide one total Career Maturity Attitude score, based on the same 50 items of Screening Form A-2. The 75 item form also yields five separate scores for the five attitudinal variables which measure it: Decisiveness, Involvement, Independence, Orientation, and Compromise in career decision-making. The total Career Maturity Attitude score is the number of correct responses to the 50 items in Counseling Form B-1 which are identical to the 50 items in Screening Form A-2. The separate score on any of the five subscales of the Attitude Scale, Counseling Form B-1, is the total number of correct responses to the seven or ten items of that particular subscale. Appendix A identifies those items from Counseling Form B-1 that are designed to yield scores for Career Maturity Attitude, Decisiveness, Involvement, Independence, Orientation and Compromise. In addition to the 47 items in the Counseling Form B-1 that comprise ten items for each of four subscales and seven for the fifth subscale, there are 28 items that do not contribute to the five subscale scores. These 28 items (including 22 items from the Screening Form and six newly added items) are being studied relative to the goal of completing the Compromise test and providing an Unrealism score (Crites, 1978).

Reliability and Validity. The Attitude Scale, Counseling Form B-1, should be considered a research instrument in terms of the data available for interpretation of the five separate variables (Crites, 1978).

The 1975 study from which the frequency distributions were derived was not designed to yield a nationally-representative sample. A total of 7082 students participated in the study. These students were from school districts with enrollments larger than 4000 students and representing six states.

Because 50 items from the Counseling Form are those from the Screening Form, there is some applicability of the reliability and validity statistics for the Screening Form to the Counseling Form of the Attitude Scale (Crites, 1978). Test-retest reliability for the Attitude Scale, Screening Form A-2 has been demonstrated in a number of large sample studies (N's ranging from 255 to 1349) with students in grades six through twelve. The correlation coefficients over these studies ranged from a low of .65 to a high of .84 with the mean correlation being .74. This latter coefficient is comparable to coefficients of other instruments similar to the Attitude Scale (Crites, 1978).

Recent Kuder-Richardson (KR-20) internal consistency estimates have been calculated for the five attitude subscales of the Counseling Form B-1 (Crites, 1978). These coefficients range from .50 for Compromise in career decision-making to .72 for Orientation to career decision-making. These values are generally lower than would be expected for aptitude or achievement tests, in which homogeneous sets of items are constructed to measure uni-dimensional objectives of learning, such as subtraction skills or spelling ability. For "nonintellective" scales, however, such as those for career choice attitude variables, these internal consistencies are more acceptable (Crites, 1978).

Crites (1974) noted that the content validity of the Attitude Scale was established by selecting the attitudes that it was designed to measure from contemporary theories of career development. A study by Hall (1962) described how expert judges agreed with the empirically-derived scoring key for the Attitude Scale three times out of four (Crites, 1978). Criterion-related validity for the Attitude Scale was shown by correlating it with other measures of similar variables such as realism in vocational aspiration and consistency, decision, and realism in career choice. Significant correlations have been found to exist with Miller and Haller's Occupational Scale (Bathory, 1967) and with Gibbons and Lohnes' Readiness for Vocational Planning Scale (Cooter, 1966). The accumulated research on the Attitude Scale supports its construct validity. In general, it appears to be related to variables to which theoretically, it should be related, and unrelated to variables to which it should not be related (Crites, 1978).

Sex Differences on the Career Maturity Attitude Scale. While the items of the Attitude Scale are phrased to be meaningful to both sexes, longitudinal research (Rathburn, 1973) indicates that sex differences do emerge during the high school years. In his study, based upon six-year longitudinal data, it was found that, although males and females did not differ significantly in their career choice attitudes in the seventh grade, they did during the later years of adolescence. At each succeeding grade level, females had higher mean scores on the Attitude Scale than had males. Using longitudinal data collected over three points in time, Herr and Enderlein (1976) reported that the career maturity of girls and boys differed, with the former maturing earlier and advancing further than boys during the adolescent

period. These findings do not imply that the Attitude Scale cannot be used with both sexes, but it might be expected that females would score higher than males as they progress with their secondary school education (Crites, 1978).

The Relation Between Intellectual Factors and Career Attitudes.

Several studies have established that the correlation of Grade Point Average with the Attitude Scale is comparable to the relationship of the CMI Attitude Scale with measures of intelligence and scholastic aptitude: approximately .35 (Cover, 1968; Harris, 1966; Williams, 1967). In a group of 257 ninth grade boys, Dutt (1968) reported an r value of .42 between the Otis Quick-Scoring Mental Ability Tests and the Attitude Scale. Tamminen and Miller (1968) determined an r value of .40 between the Minnesota Scholastic Aptitude Test (MSAT) and the Attitude Scale. Forrest (1971) found a significant relationship ($r=.42$) between the Attitude Scale and the cognitive scale (Scale C) of Super's Career Development Inventory. These results of research on the Attitude Scale are also consistent with findings reported by Super and Overstreet (1960) on the Indices of Vocational Maturity and by Gribbons and Lohnes (1968) on the Readiness for Vocational Planning scales in which verbally expressed career attitudes have been shown to relate to verbal intelligence or aptitude. Crites (1978) suggested that these results are to be expected if it is assumed that attitudes mediate decision-making.

Assessment of Career Development - Career Planning Knowledge Scale

Designed for use with 8th through 11th grade students as part of a school's developmental career guidance program, the Assessment of

Career Development (ACD) is based on the viewpoint that career development is primarily an educational concern involving the assessment of achievement. In the ACD, level of achievement is defined by amount of knowledge in various career-related areas and number of career-related experiences of various kinds (American College Testing Program, 1974). Eleven scales assess the following components of career development: occupational awareness, self-awareness, and career planning and decision-making. Of the eleven scales, three cover career-related knowledge and eight cover career-related experiences.

The Career Planning Knowledge scale consists of 40 items; 22 of these items are True-False while the other 18 require the selection of the most appropriate answer. The Career Planning Knowledge Scale yields one total score. About 20 minutes are required for completion of the scale. The items on this scale describe career planning knowledge as:

1. Knowledge of Basic Career Development Principles
 - a. Continuous nature of career development and decision-making
 - b. Impact of work on one's life
 - c. Multipotentiality of people for occupations
2. Knowledge of Reality Factors
 - a. Post-high school education training and financial aid
 - b. Labor market functioning and trends
3. Knowledge of the Career Planning Process
 - a. When to start planning - the importance of early planning
 - b. Procedures to follow in career exploration and decision-making.

Minor changes were made on items 81 and 104 to increase their face validity for Manitoba high school students.

Reliability and Validity. Reliability data for the ACD are based on the 10% sample of the 28,298 norm group students in grades 8, 9, and 11 used for the intercorrelations of ACD scales. The unweighted means and standard deviations for this sample were found to be very similar to the means and standard deviations for the entire norm group with scores weighted so as to be representative of the nation. Thus, the 10% sample should also be reasonably representative of students nationwide (American College Testing Program, 1974).

Reliability estimates for the longer ACD scales (54, 40, 32, and 90 items) ranged from .71 to .93 for grade 8, .75 to .93 for grade 9, and .75 to .92 for grade 11. Median internal consistency reliability coefficients for the six experience cluster scales were about .77, .77, and .79 for grades 8, 9, and 11. These appeared to be quite respectable for 15-item scales (American College Testing Program, 1974). The reliability coefficients for several of the shorter ACD scales border on the minimum values acceptable for the interpretation of scores to individuals. However, the reliabilities appear to be quite adequate for interpreting the results of moderate to large groups (Thorndike and Hagen, 1969). With respect to score changes from test to retest, only on the case of the Occupational Characteristics Scale for the 9th grade is there evidence of a substantial score increase. The data, as a whole, indicate that prior experience with the ACD has little effect on score level when the ACD is readministered after nine weeks (American College Testing Program, 1974).

The ACD does not claim to measure the psychological dimensions of vocational maturity. Neither is its purpose to predict future behavior, although it may be found to be useful when so applied. Evidence of ACD

validity is provided by its content as distributed across the specifications of the instrument (American College Testing Program, 1974). In this respect it is similar to most achievement tests used in schools. Potential users can decide if the test is appropriate to their needs by examining the content that is sampled by each of the scales of the ACD.

Research data from correlational analyses depict very low relationship between scores on the knowledge scales and the experience and involvement scales. For example, the correlation between the Career Planning Knowledge and Career Planning Involvement Scales is .05, whereas the correlation between the former and the Occupational Characteristics Scale is .67. Likewise, the correlation between the Occupational Characteristics Scale and the general Exploratory Occupational Experiences Scale is only .10. On the other hand, inter-correlations of the experience scales are in the moderate range. The relative independence of the knowledge and experience components of career development support the decision to assess both in the ACD.

Sex Differences and the ACD. Weighted data for the national norm group showed consistent sex differences in performance across grades 8, 9 and 11 (American College Testing Program, 1974). As expected, females scored slightly higher than males on the three knowledge scales. Not expected, however, were the rather substantial differences in standard deviations, with the scores for females consistently showing less variability than the scores for males (ACTP, 1974).

Career Decision Scale

In an effort to identify barriers preventing individuals from making career decisions, the authors of the Career Decision Scale

(Osipow, Carney, Winer, Yanico and Koschier, 1976) generated a list of 16 descriptions of antecedents for career indecision. Two items indicating career certainty were added along with an open-ended question allowing the respondent to list other barriers not represented in the scale items. The Career Decision Scale adapted for high school students by Hartman and Hartman (1982) was used in this study. The scale contained 16 items to which responses on a scale of four (exactly like me) to one (not at all like me) were made, yielding one total score. The higher the score, the less decided the individual was about his/her career. Depending on their reading skill, most individuals should complete the scale within 10 to 15 minutes.

Reliability and Validity. Two studies by Osipow, Carney, and Barak (1976) reported test-retest correlation of items and total scores. Results demonstrated that the scale as a whole had high test-retest reliability (.902 in one study and .819 in the other, based on 56 and 59 subjects, respectively). Over generally a two week period, item test-retest correlations ranged from a low of .343 to a high of .820, with the majority of the rest-retest correlations falling in the .60 or .70 range (Osipow, 1980).

Slaney and Palko-Nonemaker (1981) found Career Decision Scale test-retest reliability scores to range from a low of .19 to a high of .70 over a six week period, with an overall test-retest reliability of .70 for all combined items. These reliability scores are lower than those found by Osipow, Carney, and Barak (1976). However, it should be remembered that Osipow, Carney, and Barak (1976) retested in two weeks while Slaney and Palko-Nonemaker retested in six weeks.

In a study to investigate the construct validity of the Career

Decision Scale, Westbrook (1980) administered the following instruments to 200 technical, vocational, and general education students: Career Maturity Inventory Attitude Scale, Form A-1; Career Maturity Inventory, Competence Test; Scholastic Aptitude Test, Verbal (SATV); and Mathematical (SATM) College Entrance Examination Board. Results of the study seemed to provide some support for the construct validity of the Career Decision Scale. The Scale correlated more highly with independent measures of career indecision than it did with other measures. The Scale correlated substantially with affective measures of career maturity. In general, the Scale correlated more highly with measures in the affective domain than it did with measures in the cognitive domain. There was practically no relationship between scores on the Career Decision Scale and measures of achievement.

Hartman and Hartman (1982) performed a study with 206 seniors in a suburban Chicago high school to examine the concurrent and predictive validity of the Career Decision Scale adapted for high school students. After completing the Scale, students were asked to write a statement describing their career decision. These statements were rated by two graduate students who were instructed to determine if the students' statements about a career decision appeared to be decided or undecided. Pearson correlates between ratings and test scores were calculated to examine the concurrent validity of the Scale. Correlations of .57 and .59 were considered to be encouraging signs that the Career Decision Scale had sufficient concurrent validity with this sample of high school seniors. The predictive validity portion of the study demonstrated that the Career Decision Scale did indeed predict decided and undecided students' behaviors. However, the scores were not expected

to be predictive of decided or undecided students for too many years ahead, since most students do not remain undecided indefinitely (Hartman & Hartman, 1982).

Westbrook, Simonson, and Arcia (1978) reported, in an unpublished study, that the Career Maturity Inventory Attitude Scale correlated more highly with the Career Decision Scale than it did with various scholastic aptitude measures.

Niece and Bradley (1979) reported significant "age" differences on the Career Decision Scale: "older" students showed greater decidedness than younger students. This study was based on grade levels, from which age differences are inferred. This was consistent with other studies by Osipow (1978) on the Career Decision Scale and on career maturity (Crites, 1973), which indicate that the tasks are more related to grade level demands than age, although age and grade are correlated (Osipow, 1980).

Sex Differences and the Career Decision Scale. Niece and Bradley (1979) reported no sex differences on the Career Decision Scale. This finding was consistent with studies by Slaney (1978), Osipow (1978), and Osipow, Carney, and Barak (1976). Contrary to the above, a study based on college freshmen (Gordon & Osipow, 1976) found males to be more decided than females. Osipow (1978) tested one large sample of high school students with the Career Decision Scale and found that females were more certain of their educational objectives, considered their career choice, knew more about this choice, and narrowed their options more than males did. Overall, females seemed more certain of their career objective (Osipow, 1980).

Career Development Inventory - Extent of Career Planning Scale

The Career Development Inventory (CDI) was made available for general use as a sound instrument for assessing career development and vocational or career maturity (Thompson and Lindeman, 1981). Its publication follows research beginning in 1951 (Super, 1957) that documented the lack of readiness for career decisions in the 9th grade (Super & Overstreet, 1960), paved the way for the development of practical measures, and then led to test and inventory development work, underway since 1967 (Myers et al., 1972).

The Career Development Inventory has a School Form, designed for use in junior and senior high schools, and a College and University Form, for use in higher education. The forms are similar in rationale and structure. They differ in item content, which is adapted to the appropriate occupational options and levels of education.

The School Form was designed for use in grades 8 through 12 and has national norms for grades 9 through 12. The Career Development Inventory consists of eight scales. Five assess specific dimensions of career development; two measure two group factors (conative and cognitive) that underlie these dimensions; and one scale combines the two factors and thus provides a total score.

The Extent of Career Planning Scale comprises 20 items in which the student reports the career planning in which he or she has engaged and the degree of engagement (Thompson & Lindeman, 198.): for example, talking about career plans with an adult friend and getting a part-time or summer job that will help in deciding what kind of occupation to choose. These items also have students rate their own knowledge of the kind of work that they would like, including what people really do

on the job, abilities, and training needed.

The Extent of Career Planning Scale takes about ten minutes to complete. Students select the most appropriate response for each item from a set of multiple choices. Raw scores are derived by assigning scores of one to five for responses a) to e), respectively. The total score is the sum of the values for the 20 items.

Reliability and Validity. The scales of the inventory have been developed with careful attention to current psychometric standards (Hilton, 1974). One of the measures of the reliability of the CDI scales was obtained by means of the test-retest method, measuring the consistency of the subjects' responses over a short period of time. Eighty-two tenth graders from four different schools took the test a second time at intervals varying from two to four weeks. The test-retest reliabilities obtained for the scales and the combined scores ranged from .71 to .87 (Hilton, 1974). Evidence of reliability was also provided in terms of the internal consistencies (Cronbach alpha coefficients) of the five scales and the reliability estimates (alpha coefficients) of the combined scales. The measures of internal consistency for the combined scales ranged from .79 to .88 with a median of .86. These scales clearly had adequate reliabilities for use in individual counselling and in analyses of group differences (Thompson & Lindeman, 1981). A similar conclusion could be drawn for the Career Planning, Career Exploration, and World of Work Scales, which had median scale reliabilities of .89, .78, and .84, respectively.

The items in the Career Development Inventory are based on the theoretical model that was developed and tested by the Career Pattern Study. This model was tested independently by Gibbons and Lounsbury



(1968), Asis (1971), Vriend (1968); it was modified and then tested by Crites (1973), and further refined by Super (1974) in light of the accumulated evidence. This work can be considered evidence of the validity of the career maturity model on which the CDI is based (Thompson & Lindeman, 1981). Content validity of the CDI appears to have been established.

Evidence of the CDI's construct validity is based on subgroup differences (sex, grade, and program) and on the factor structure of the instrument (Thompson & Lindeman, 1981). Because of the large N's, tests of statistical significance of differences between males and females or between grade means provide little meaningful information regarding construct validity. Although not all of the differences between 9th and 12th grade means are meaningful in terms of the construct validity criterion, the pattern of the differences and their consistency from scale to scale are strong evidence of the construct validity of the separate and combined CDI scales (Thompson & Lindeman, 1981).

In examining construct validity, differences in means among students in different programs were investigated. Students in honors programs had larger means, particularly on the cognitive scales. In grades 10, 11, and 12, students in college preparatory and business programs tended to have higher scores than those in general and vocational programs, again particularly on the cognitive scales. On the conative or attitudinal scales, the vocational/technical students scored higher, perhaps because they would be entering the work force sooner and thus had planned and explored more than had other students. In general, the differences between these groups provided further evidence

of the construct validity of the CDI scales (Thompson & Lindeman, 1981).

Sex Differences and the Career Development Inventory. Although the CDI items were deliberately written in unisex terms, they were not selected to mask differences between males and females (Thompson & Lindeman, 1981). However, the basic theory of career development would predict minimal sex differences. Norm studies show relatively few instances in which sex differences within a grade were meaningful (Thompson & Lindeman, 1981). Notable differences occurred in grades 11 and 12 on Decision-Making, World of Work Scales, and on their combination: here, females tended to make higher scores. At these grade levels, such differences were consistent with sex differences often found in academic achievement (Thompson & Lindeman, 1981). The cognitive CDI scales are more highly correlated with academic achievement measures than are Career Planning, Career Exploration, and their combined scale. The infrequent and moderate sex differences are further evidence of the construct validity of the Career Development Inventory.

Figures 1 and 2 illustrate group mean scores of grades 8 to 12 students used to interpret results on the nine career decision variables measured in this study. These mean scores were obtained from standardization samples of grades 8 to 12 students tested by the various test developers in the assessment of the Career Maturity Attitude Scale, Counselling Form B-1; the Assessment of Career Development, Career Planning Knowledge Scale; the Career Decision Scale; and the Career Development Inventory, Extent of Career Planning Scale.

Figure 1

Mean scores for the nine career decision variables , based on standardized groups

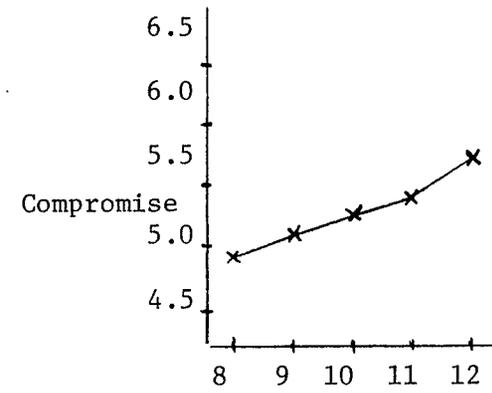
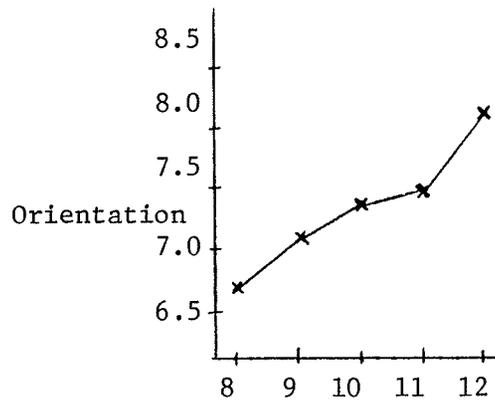
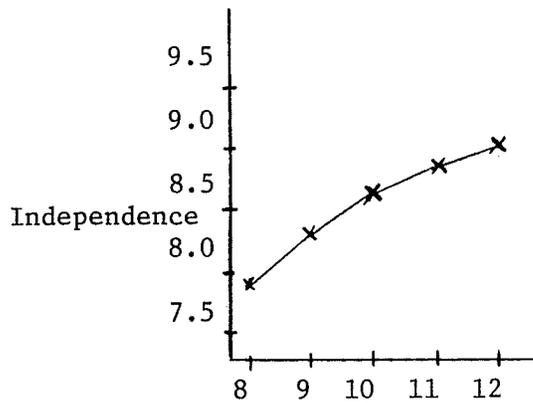
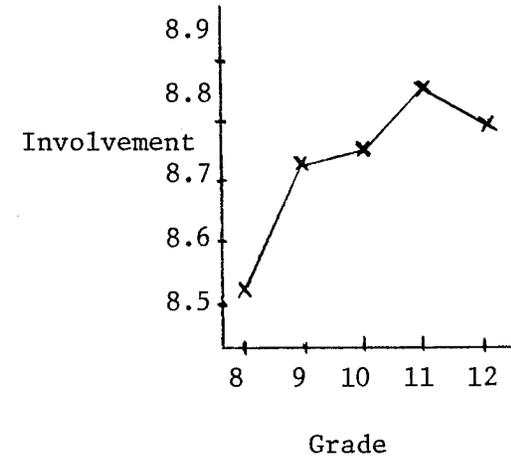
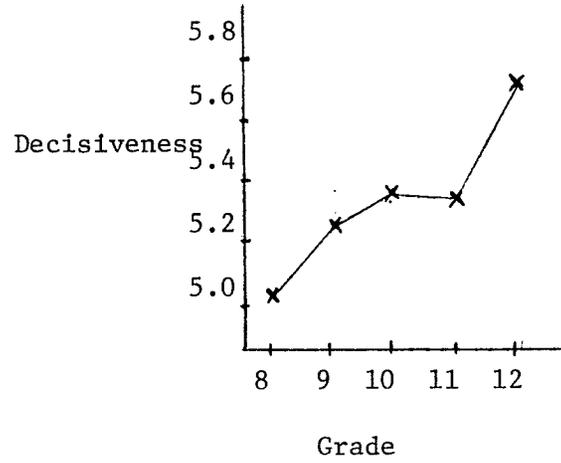
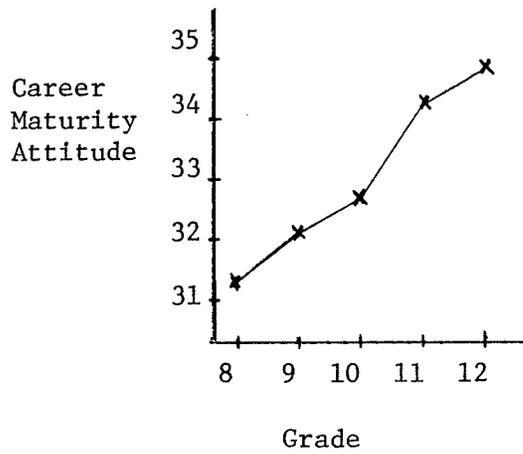
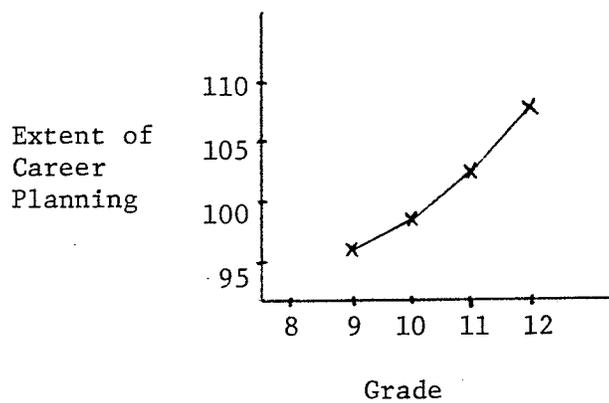
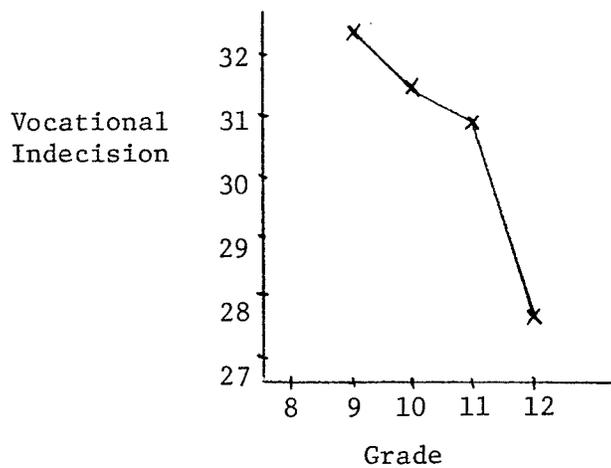
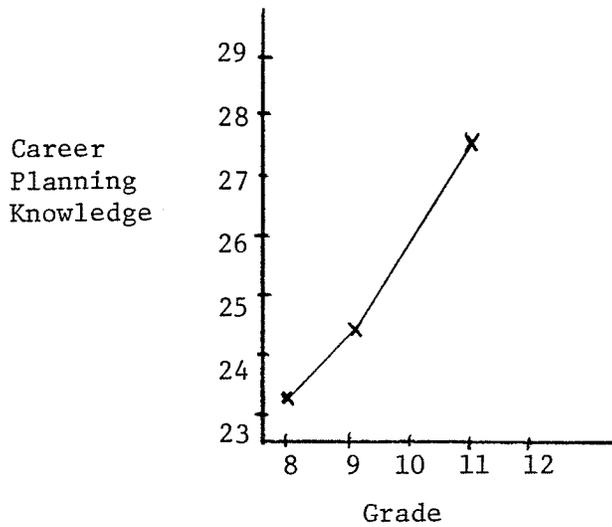


Figure 2

Mean scores for the nine career decision variables,
based on standardization groups (cont'd)



CHAPTER III

METHOD

Subjects

The cross-sectional research sample consisted of independent samples of all students in grades 8 to 12 who were attending junior and senior high schools in the Red River School Division located in south-eastern Manitoba. Grades 8, 9, 10, 11, and 12 were represented by 85, 73, 58, 65, and 73 students, respectively. Table 1 illustrates the sample distribution by grade level and by sex.

Table 1
Study Sample by Grade and By Sex

Grade	Male (161) ^a	Female (193) ^a	Total (354) ^a
8	41	44	85
9	32	41	73
10	28	30	58
11	21	44	65
12	39	34	73

^aNumbers in parentheses indicate the number of students in each group.

Procedure

The four measurement scales, requiring a total of approximately 90

minutes for completion, were administered to entire classes of students in early spring of 1983. Counsellors and teachers of the participating schools were given complete sets of instructions so that similar testing conditions and procedures prevailed.

Instrumentation

Career decision behaviors were assessed by four measurement scales:

Crites' Career Maturity Inventory, Attitude Scale, Counseling Form B-1

This 75 item scale yielded one total Career Maturity Attitude score and five subscores for the following variables: Decisiveness, Involvement, Independence, Orientation and Compromise in career decision-making. The Career Maturity Attitude score was the total number of correct responses to 50 items of the scale. The subscores of the five attitudinal variables listed above were determined by the totals of correct responses to the seven or ten items of the subscales: ten items for Decisiveness, ten items for Involvement, ten items for Independence, ten items for Orientation, and seven items for Compromise. Appendix A classifies the items for each variable.

American College Testing Program's Assessment of Career Development, Career Planning Knowledge Scale

This 40 item scale produced one Career Planning Knowledge score.

Osipow's Career Decision Scale

One score reflecting the Vocational Indecision variable was obtained from the 16 item Career Decision Scale.

Super's Career Development Inventory, Extent of Career Planning Scale

This 20 item scale yielded one score for the variable, Extent of Career Planning.

The entire 151 item questionnaire provided nine separate raw scores for each of the 354 subjects:

One Career Maturity Attitude score

One Decisiveness in career decision-making score

One Involvement in career decision-making score

One Independence in career decision-making score

One Orientation to career decision-making score

One Compromise in career decision-making score

One Career Planning Knowledge score

One Vocational Indecision score

One Extent of Career Planning score

Grade-point averages (GPA) were computed from the students' reported mid-term grades, obtained from the respective school records.

Analysis of Data

Mean scores and standard deviations of the nine separate career decision variables were calculated separately for grades 8, 9, 10, 11, and 12. Mean scores and standard deviations of each variable for both sexes within each grade level were also determined.

The direction and magnitude of change of mean scores of each variable across grades 8 to 12 were examined by plotting the mean scores of each variable across the grades on separate graphs.

Analysis of variance procedures were used to examine the statis-

tical significance of differences in mean scores between grade levels on each of the nine variables.

Differences between mean scores for sexes within each grade for each of the nine variables were investigated by means of t-test procedures.

The relation between the nine variables for the overall sample, within each grade level, and for both sexes in the overall sample, were examined through use of Pearson correlation coefficients. Correlations between each of the nine variables and students' reported grade-point average were also computed.

CHAPTER IV

RESULTS

The direction and magnitude of differences between grades will be summarized for the nine career decision behaviors examined in this study.

Table 2, on the next page, contains means and standard deviations for each career decision variable by grade. A visual representation of the changes across the grades appears in Figures 3 and 4 on pages 52 and 53.

In general, mean scores of the career decision variables progressed across the grades, according to the trends illustrated by the mean scores of the standardization samples described in Figures 1 and 2, on pages 44 and 45 . Increasing mean scores from grades 8 to 12 were obtained for Career Maturity Attitude, Career Planning Knowledge, and Extent of Career Planning. Orientation and Compromise mean scores increased across grades 9 to 12 but decreased from grades 8 to 9. Involvement and Independence mean scores also showed general increases from grades 8 to 12. However, on both variables, the grade 10 mean scores were higher than the grade 11 mean scores. The mean scores for Decisiveness followed a fluctuating pattern across the grades. The grade 8 mean score was higher than the grade 9 mean score. The Decisiveness mean score was highest for the grade 12 level. Vocational Indecision mean scores decreased from grades 9 to 12 and increased from grade 8 to 9. Results of this part of the study revealed that the grade 8 mean scores were higher than the grade 9 mean scores for Decisiveness, Orientation, and Compromise. The mean score for Vocational Indecision

Table 2

Means (M) and Standard Deviations (SD) for Career Decision Variables (By Grade)

Variable		Grade 8 (N=85)	Grade 9 (N=73)	Grade 10 (N=58)	Grade 11 (N=65)	Grade 12 (N=73)
Career Maturity	M	30.12	30.49	32.66	33.35	34.90
	SD	5.33	4.21	4.31	4.54	3.47
Decisiveness in Career Decision-Making	M	4.67	4.00	4.66	4.35	5.05
	SD	2.23	2.05	2.32	2.42	2.41
Involvement in Career Decision-Making	M	8.04	8.74	9.16	9.02	9.01
	SD	1.98	1.42	1.14	1.05	0.96
Independence in Career Decision-Making	M	8.09	8.33	8.62	8.52	8.63
	SD	2.07	1.51	1.58	1.51	1.64
Orientation to Career Decision-Making	M	5.54	5.50	5.98	6.37	7.38
	SD	2.57	2.18	2.14	2.32	2.25
Compromise in Career Decision-Making	M	4.60	4.32	5.03	5.17	5.34
	SD	1.49	1.35	1.36	1.22	1.22
Career Planning Knowledge	M	22.20	24.12	26.86	27.60	27.86
	SD	4.61	4.42	4.84	3.39	4.02
Vocational Indecision	M	34.93	37.63	33.72	33.22	31.11
	SD	8.40	6.00	7.00	8.50	8.70
Extent of Career Planning	M	54.88	54.68	55.97	61.56	62.75
	SD	12.76	11.95	10.64	15.53	11.58

Figure 3

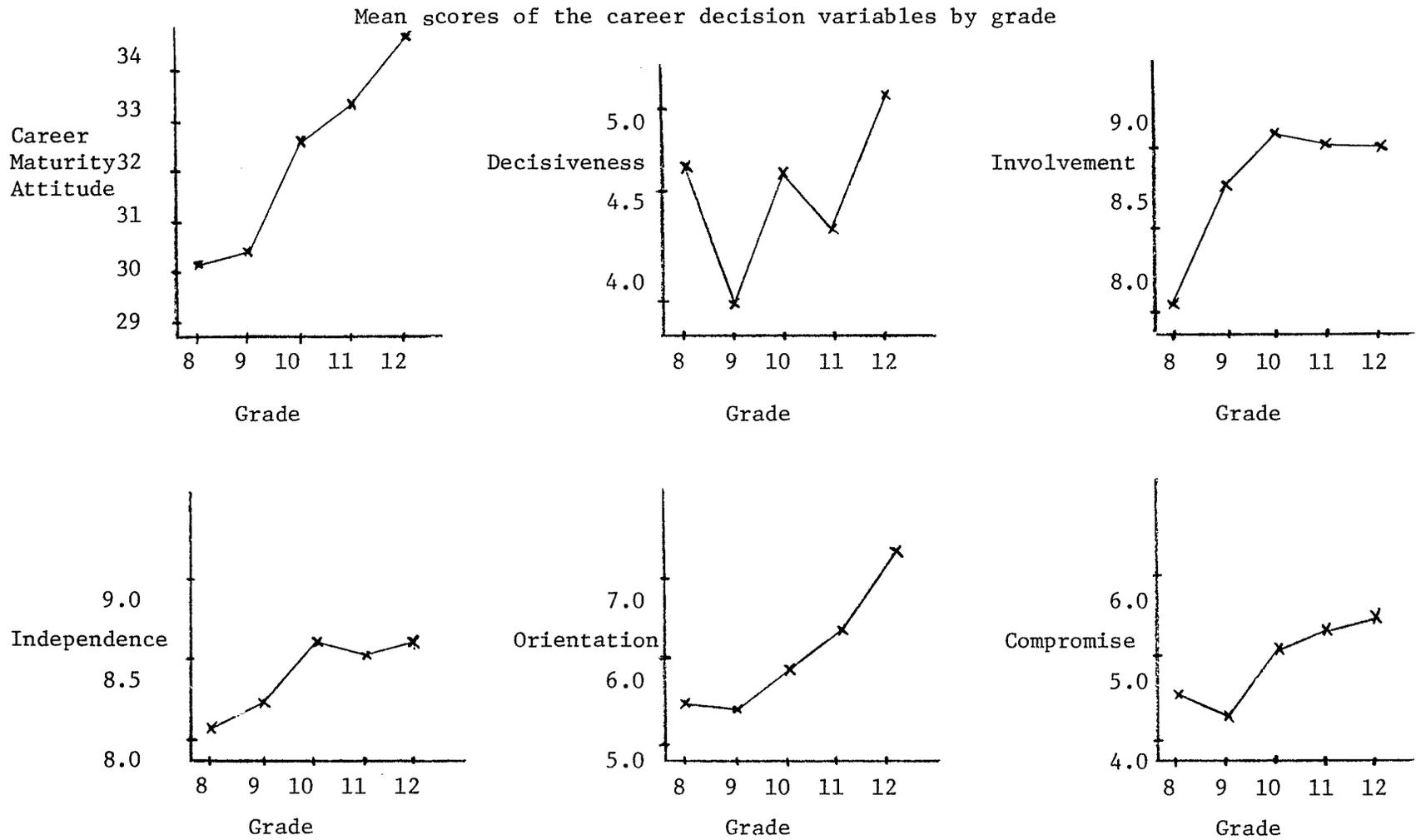
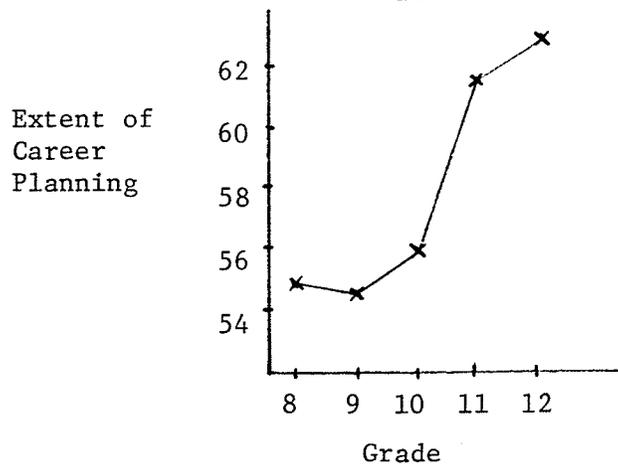
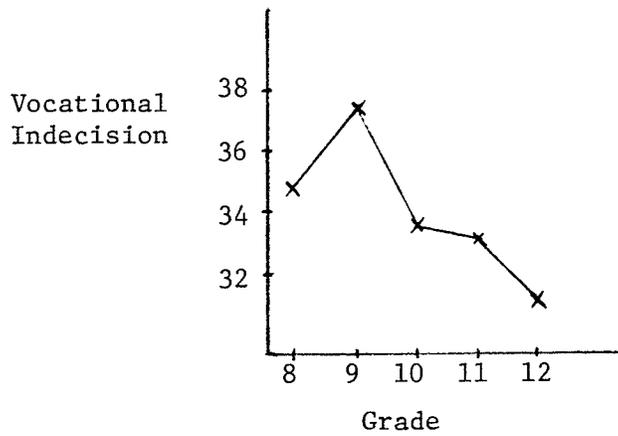
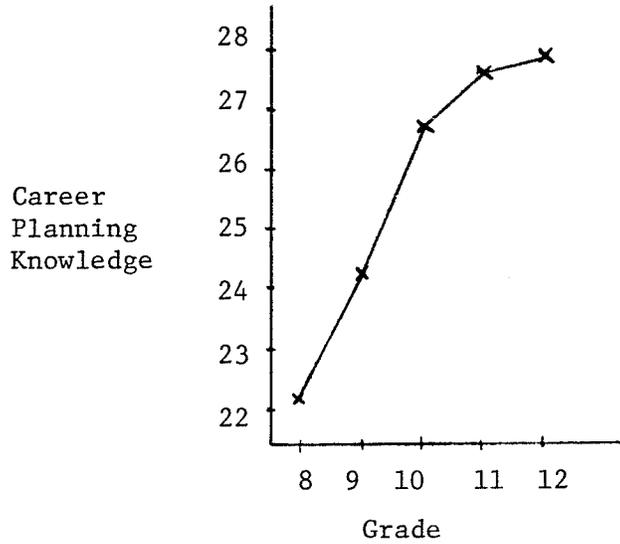


Figure 4

Mean scores of the career decision variables by grade (cont'd)



was lower for grade 8 than for grade 9. Involvement and Independence mean scores also were higher for grade 10 than for grade 11.

Analysis of variance procedures were carried out to explore differences between grades for the career decision variable mean scores. Significant differences across these five grades at the .001 level were found for the following seven variables: Career Maturity Attitude, Involvement, Orientation, Compromise, Career Planning Knowledge, Vocational Indecision, and Extent of Career Planning. No significant differences between grades were found for Decisiveness and Independence. Table 3 on page 55 summarizes the analysis of variance results.

Because differences between grades on seven of the nine career decision variables were detected, Scheffé test procedures were used to compare all possible group means for each variable. Significant differences at the .05 level were obtained between grade 8 or grade 9 mean scores and grades 10, 11, or 12 mean scores for seven career decision variables: Career Maturity Attitude, Decisiveness, Involvement, Orientation, Compromise, Career Planning Knowledge, and Extent of Career Planning. No two group means were significantly different at the .05 level for Decisiveness and Independence. Significant differences in group mean scores generally resulted between a lower grade (8 or 9) and a higher grade (10, 11, 12). Tables 4 and 5 on pages 56 and 57 summarize these statistics and illustrate how the career decision variable mean scores differed between grades.

Table 6 on page 58 lists mean scores and standard deviations of the nine career decision variables by grade and by sex. These results are graphically displayed in Figures 5 and 6 on pages 60 and 61. Table 7 summarizes t-test results for sex differences on each career

Table 3

Summary of the Analysis of Variance on the Mean Scores of the Career Decision Variables
across Grades 8 - 12

Variable	d.f.	F Ratio	Significance
Career Maturity Attitude	4 348	15.32	p < .001
Decisiveness	4 348	2.14	N.S.
Involvement	4 348	7.93	p < .001
Independence	4 348	1.37	N.S.
Orientation	4 348	8.31	p < .001
Compromise	4 348	7.21	p < .001
Career Planning Knowledge	4 348	25.17	p < .001
Vocational Indecision	4 344	6.81	p < .001
Extent of Career Planning	4 344	6.71	p < .001

Table 4

Summary of Scheffé Procedure with the Mean Scores of Career Decision Variables across Grades 8-12

Career Maturity Attitude					Decisiveness				
GR8	GR9	GR10	GR11	GR12	GR8	GR9	GR10	GR11	GR12
GR8					GR8				
GR9					GR9	No two groups were			
GR10	*				GR10	significantly different			
GR11	*	*			GR11	at the .05 level			
GR12	*	*			GR12				
Involvement					Independence				
GR8	GR9	GR10	GR11	GR12	GR8	GR9	GR10	GR11	GR12
GR8					GR8				
GR9	*				GR9	No two groups were			
GR10	*				GR10	significantly different			
GR11	*				GR11	at the .05 level			
GR12	*				GR12				
Orientation					Compromise				
GR8	GR9	GR10	GR11	GR12	GR8	GR9	GR10	GR11	GR12
GR8					GR8				
GR9					GR9				
GR10					GR10				
GR11					GR11		*		
GR12	*	*	*		GR12	*	*		

* Denotes pairs of groups significantly different at the .05 level

Table 5

Summary of Scheffé Procedure with the Mean Scores of Career Decision Variables across Grades 8-12 (cont'd)

Career Planning Knowledge					Vocational Indecision						
	GR8	GR9	GR10	GR11	GR12		GR8	GR9	GR10	GR11	GR12
GR8						GR8					
GR9						GR9					
GR10	*	*				GR10					
GR11	*	*				GR11		*			
GR12	*	*				GR12		*			
Extent of Career Planning											
	GR8	GR9	GR10	GR11	GR12						
GR8											
GR9											
GR10											
GR11	*	*									
GR12	*	*									

* Denotes pairs of groups significantly different at the .05 level

Table 6

Means (M) and Standard Deviations (SD) for Career Decision Variables (By Grade and By Sex)

Variable	Grade 8		Grade 9		Grade 10		Grade 11		Grade 12	
	Male (N=41)	Female (N=44)	Male (N=32)	Female (N=41)	Male (N=28)	Female (N=30)	Male (N=21)	Female (N=44)	Male (N=39)	Female (N=34)
Career Maturity Attitude	M 28.80	31.34	30.23	30.68	31.96	33.30	35.14	32.50	35.26	34.50
	SD 5.20	5.20	4.91	3.64	4.02	4.53	3.77	4.67	3.53	3.41
Decisiveness	M 4.93	4.43	4.16	3.88	4.79	4.53	5.52	3.80	5.67	4.35
	SD 2.14	2.31	1.77	2.25	2.41	2.27	1.99	2.43	2.45	2.20
Involvement	M 7.02	8.98	8.35	9.02	8.75	9.53	9.10	8.98	9.00	9.03
	SD 2.13	1.27	1.62	1.19	1.35	0.73	1.00	1.09	0.97	0.97
Independence	M 7.12	9.00	8.19	8.44	8.29	8.93	8.57	8.50	8.36	8.94
	SD 2.12	1.56	1.60	1.45	1.49	1.62	1.57	1.50	1.86	1.30
Orientation	M 5.63	5.45	5.94	5.17	6.04	5.93	7.19	5.98	7.82	6.88
	SD 2.28	2.84	1.95	2.30	2.10	2.21	1.72	2.47	2.23	2.20
Compromise	M 4.41	4.77	4.32	4.32	4.89	5.17	5.38	5.07	5.26	5.44
	SD 1.28	1.65	1.17	1.49	1.45	1.29	1.02	1.30	1.19	1.26
Career Planning Knowledge	M 20.76	23.58	22.31	25.54	25.25	28.37	27.48	27.66	27.74	28.00
	SD 5.22	3.48	4.53	3.83	5.20	4.00	2.68	3.70	3.85	4.26

Table 6 (cont'd)

Vocational	M	36.79	33.23	37.34	37.85	34.32	33.17	31.90	33.86	30.03	32.39
Indecision	SD	8.27	8.24	5.72	6.27	7.35	6.72	7.91	8.80	7.44	9.96
Extent of	M	56.23	53.60	56.59	53.20	57.79	54.27	64.00	60.42	62.05	63.58
Career Planning	SD	13.28	12.28	11.77	12.02	9.09	11.82	13.08	16.56	11.29	12.05

Figure 5

Mean scores of the career decision variables by grade and by sex

x—x male
o—o female

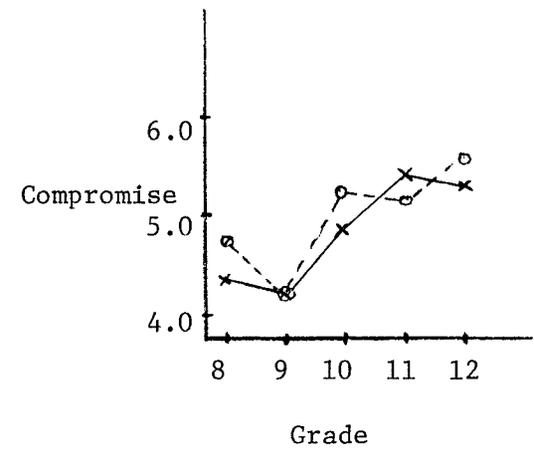
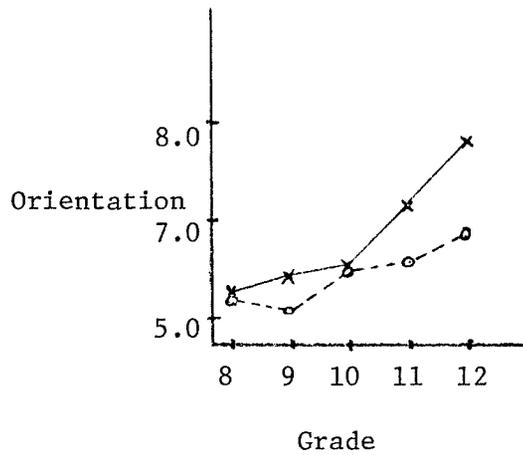
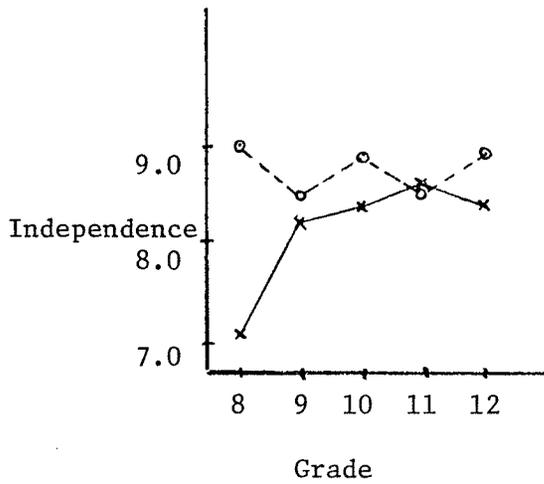
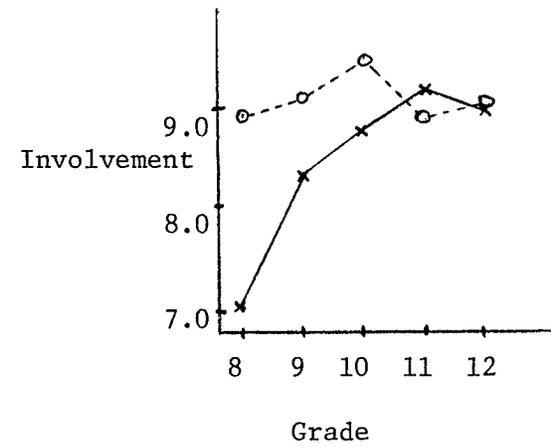
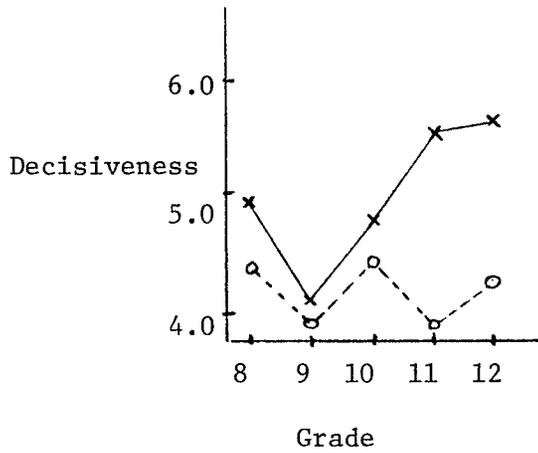
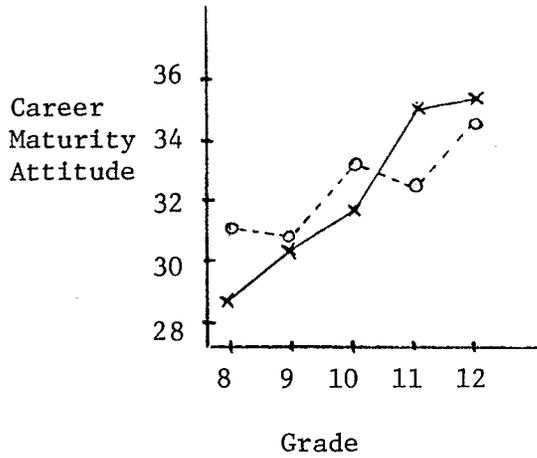


Figure 6

Mean scores of the career decision variables by grade and by sex
(cont'd)

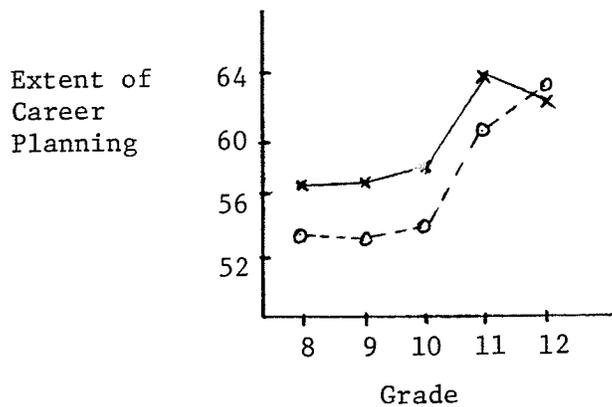
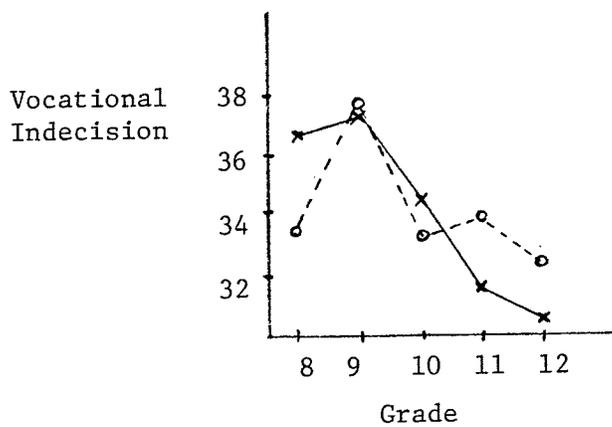
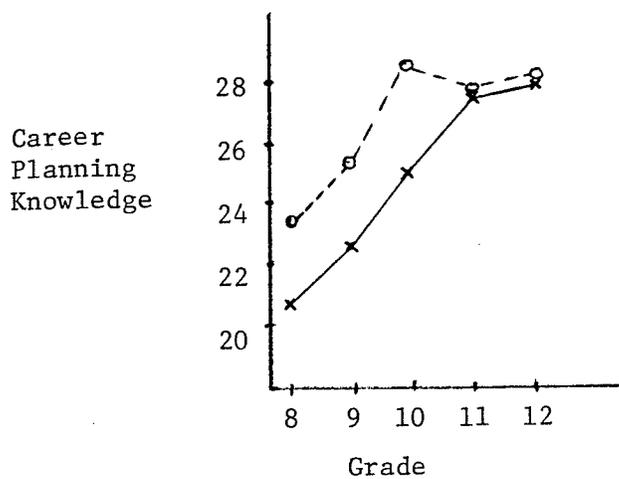


Table 7

T-tests for Differences between Males and Females within each Grade on the Career Decision Variables

Variable		Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Career Maturity Attitude	t	-2.25**	-0.45	-1.18	2.26**	0.93
	df	83	70	56	63	71
Decisiveness	t	1.02	0.58	0.41	2.84*	2.39**
	df	83	70	56	63	71
Involvement	t	-5.18*	-2.02**	-2.27**	0.42	-0.13
	df	83	70	56	63	71
Independence	t	-4.67*	-0.68	-1.58	0.18	-1.53
	df	83	70	56	63	71
Orientation	t	0.32	1.49	0.18	2.02**	1.80
	df	83	70	56	63	71
Compromise	t	-1.11	0.02	-0.76	0.97	-0.65
	df	83	70	56	63	71
Career Planning Knowledge	t	-2.93*	-3.30*	-2.57**	-0.20	-0.27
	df	82	71	56	63	71
Vocational Indecision	t	1.95	-0.36	0.62	-0.86	-1.15
	df	80	71	56	62	70
Extent of Career Planning	t	0.93	1.21	1.26	0.85	-0.55
	df	80	71	56	61	70

* Denotes significance at the .01 level (two-tailed) ** Significance at the .05 level (two-tailed)

decision variable within each grade level. Previous research studies have shown that females tend to score higher than males on Career Maturity Attitude and Career Planning Knowledge. This study's results indicated similar findings for Career Planning Knowledge. A somewhat conflicting picture was revealed for Career Maturity Attitude. The mean score on Career Maturity Attitude was found to be significantly different for females over males at the grade 8 level, and continued to be higher, but not significantly, for females at the grades 9 and 10 levels. The Career Maturity Attitude mean score for males was found to be significantly higher than the mean score for females at the grade 11 level. The Career Maturity Attitude mean scores for both sexes were very similar at the grade 12 level. In this study, Career Maturity Attitude mean scores did increase for both sexes across grades 8 to 12. However, the mean scores of females on this variable were not higher than the mean scores of males across every grade. Table 7, on page 62, summarizes t-test results.

Figures 5 and 6 on pages 60 and 61 revealed that the mean scores of males were generally higher than the mean scores of females on the Decisiveness, Orientation, and Extent of Career Planning variables. Significant sex differences for males over females were detected within grades 11 and 12 for Decisiveness, and within grade 11 for Orientation. Mean scores of females were generally higher than mean scores of males for the Involvement, Independence, Compromise, and Career Planning Knowledge variables. Significant sex differences for females over males were found within grades 8, 9, and 10 for Involvement; within grade 8 for Independence; and within grades 8, 9, and 10 for Career Planning Knowledge. Females appeared to be less undecided on the

Vocational Indecision variable at the grade 8 level, while males appeared to be more decided than females on their career plans at the grades 11 and 12 levels. These results revealed the same type of conflicting evidence obtained in related research.

Pearson product-moment correlation coefficients were computed for all pairs of the nine career decision variables as well as the students' reported GPA. Table 8 on page 65 illustrates the correlations between the ten variables for the entire sample of 354 cases. Table 9 on page 66 and Table 10 on page 67 represent correlation coefficients for the same pairs of variables for the male sample and for the female sample, respectively. Tables 11, 12, 13, 14, and 15 on pages 68, 69, 70, 71, and 72 illustrate the correlation matrices for grades 8, 9, 10, 11, and 12, respectively. Only correlation coefficients significant beyond the .005 level will be reported.

For the overall sample, low correlations between GPA and Career Maturity Attitude, Involvement, Compromise, and Career Planning Knowledge were found. For the male sample, GPA correlated more moderately with Involvement and Career Planning Knowledge, and had a low correlation with Compromise. Meanwhile, low correlations between GPA and Career Maturity Attitude, and between GPA and Compromise were found for the female sample. Higher correlations between GPA and Involvement and between GPA and Career Planning Knowledge were detected at the Grade 8 level. Moderate correlations were also computed at the grade 8 level between GPA and Career Maturity Attitude, between GPA and Independence, and between GPA and Compromise. At the grade 9 level, GPA correlated moderately with Compromise. No other significant correlations were obtained between GPA and other variables at the

Table 8

Pearson Correlations for Career Decision Variables (Grades 8-12, N=354)

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X
I. GPA		.18*	.00	.33*	.16	.04	.25*	.29*	-.10	.07
II. Attitude			.51*	.56*	.32*	.64*	.44*	.49*	-.48*	.25*
III. Decisiveness				.04	.07	.54*	.27*	.05	-.53*	.32*
IV. Involvement					.32*	.14	.26*	.51*	-.23*	-.02
V. Independence						.10	.09	.25*	-.17*	.04
VI. Orientation							.41*	.15	-.49*	.50*
VII. Compromise								.25*	-.39*	.15
VIII. Career Planning Knowledge									-.24*	.12
IX. Vocational Indecision										-.27*
X. Extent of Career Planning										

* Denotes significance at the .001 level

Table 9

Pearson Correlation Coefficients for Career Decision Variables (Males - Grades 8-12, N=161)

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X
I. GPA		.18	-.06	.37*	.17	.04	.31*	.36*	-.01	.12
II. Attitude			.47*	.68*	.41*	.62*	.41*	.58*	-.49*	.23**
III. Decisiveness				.09	.09	.49*	.19	.09	-.49*	.39*
IV. Involvement					.39*	.22	.31*	.57*	-.29*	.02
V. Independence						.21	.09	.31*	-.23**	.09
VI. Orientation							.39*	.21	-.48*	.50*
VII. Compromise								.26*	-.30*	.24*
VIII. Career Planning Knowledge									-.30*	.14
IX. Vocational Indecision										-.31*
X. Extent of Career Planning										

*Denotes significance at the .001 level

** Denotes significance at the .002 level

Table 10

Pearson Correlation Coefficients for Career Decision Variables (Females - Grades 8-12, N=193)

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X
I. GPA		.18**	.14	.17	.05	.11	.20**	.13	-.19	.07
II. Attitude			.58*	.43*	.23*	.68*	.46*	.40*	-.48*	.28*
III. Decisiveness				.10	.13	.56*	.35*	.09	-.57*	.26*
IV. Involvement					.13	.16	.22*	.36*	-.19**	-.02
V. Independence						.07	.07	.08	-.12	.02
VI. Orientation							.45*	.16	-.51*	.50*
VII. Compromise								.24*	-.45*	.11
VIII. Career Planning Knowledge									-.19**	.15
IX. Vocational Indecision										-.25*
X. Extent of Career Planning										

* Denotes significance at the .001 level

** Denotes significance at the .005 level

Table 11

Pearson Correlation Coefficients for Career Decision Variables (Grade 8, N=85)

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X
I. GPA		.28**	-.17	.60*	.37*	.08	.28**	.55*	-.07	.07
II. Attitude			.45*	.64	.41*	.65*	.39*	.45*	-.48*	.17
III. Decisiveness				.00	.17	.54*	.16	-.03	-.45*	.37*
IV. Involvement					.34*	.21	.32*	.47*	-.30**	-.04
V. Independence						.15	.08	.19	-.22	.08
VI. Orientation							.41*	.17	-.49*	.42*
VII. Compromise								.27	-.35*	.17
VIII. Career Planning Knowledge									-.19	.03
IX. Vocational Indecision										-.19
X. Extent of Career Planning										

* Denotes significance at the .001 level

** Denotes significance at the .005 level

Table 12

Pearson Correlation Coefficients for Career Decision Variables (Grade 9, N=73)

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X
I. GPA		.20	.15	.22	.15	.10	.37*	.17	-.27	-.14
II. Attitude			.44*	.61*	.30	.49*	.40*	.27	-.33**	-.09
III. Decisiveness				.02	.01	.43*	.27	.02	-.54*	.10
IV. Involvement					.34**	-.02	.34**	.50*	-.09	-.29
V. Independence						.10	.08	.21	.00	-.18
VI. Orientation							.40	-.17	-.34**	.30**
VII. Compromise								.02	-.40*	-.13
VIII. Career Planning Knowledge									-.16	-.12
IX. Vocational Indecision										.19
X. Extent of Career Planning										

* Denotes significance at the .001 level

** Denotes significance at the .005 level

Table 13

Pearson Correlation Coefficients for Career Decision Variables (Grade 10, N=58)

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X
I. GPA		.08	-.17	.27	-.13	-.14	.18	.48	.04	.15
II. Attitude			.67*	.46*	.35**	.57*	.46*	.45*	-.50*	.22
III. Decisiveness				.24	.08	.64*	.40*	.05	-.54*	.31
IV. Involvement					.29	.08	.17	.61*	-.37**	-.03
V. Independence						.11	.01	.32	-.23	-.04
VI. Orientation							.40*	.05	-.53*	.49*
VII. Compromise								.22	-.42	.09
VIII. Career Planning Knowledge									-.22	.07
IX. Vocational Indecision										-.31
X. Extent of Career Planning										

* Denotes significance at the .001 level

** Denotes significance at the .005 level

Table 14

Pearson Correlation Coefficients for Career Decision Variables (Grade 11, N=65)

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X
I. GPA		.19	.14	.16	.10	.12	.24	.19	-.12	.29
II. Attitude			.66*	.45*	.21	.65*	.25	.46*	-.52*	.27
III. Decisiveness				.12	.11	.59*	.38*	.19	-.58*	.36**
IV. Involvement					.18	.15	.02	.44*	-.27	.04
V. Independence						.01	-.02	.25	-.26	.10
VI. Orientation							.18	.17	-.51*	.53*
VII. Compromise								.20	-.37*	-.03
VIII. Career Planning Knowledge									-.17	-.11
IX. Vocational Indecision										-.34**
X. Extent of Career Planning										

* Denotes significance at the .001 level

** Denotes significance at the .005 level

Table 15

Pearson Correlation Coefficients for Career Decision Variables (Grade 12, N=73)

Variable	I	II	III	IV	V	VI	VII	VIII	IX	X
I. GPA		.13	.06	.13	.05	-.07	.19	.25	-.07	.00
II. Attitude			.49*	.30**	.16	.60*	.40*	.36*	-.37*	.34**
III. Decisiveness				-.09	-.07	.52*	.13	-.03	-.52*	.41*
IV. Involvement					.33**	-.03	.09	.27	-.05	.02
V. Independence						-.02	.12	.16	-.04	.03
VI. Orientation							.45*	-.02	-.41*	.61*
VII. Compromise								.06	-.23	.35*
VIII. Career Planning Knowledge									-.14	.25
IX. Vocational Indecision										-.40*
X. Extent of Career Planning										

* Denotes significance at the .001 level

**Denotes significance at the .005 level

other grade levels.

Career Maturity Attitude correlated moderately with Career Planning Knowledge and with Vocational Indecision for the overall sample, while it had a low correlation with Extent of Career Planning. For the male and female samples, moderate correlations were detected between Career Maturity Attitude and Career Planning Knowledge, and between Career Maturity Attitude and Vocational Indecision. A low correlation was obtained between Career Maturity Attitude and Extent of Career Planning. Correlation matrices for grades 8, 9, 10, 11, and 12 revealed similar patterns of coefficients for the same relationships described above. A more moderate correlation between Career Maturity Attitude and Extent of Career Planning was obtained at the grade 12 level.

For the overall sample, a low correlation was obtained between Career Planning Knowledge and Vocational Indecision. No significant correlation between Career Planning Knowledge and Extent of Career Planning was found. Career Planning Knowledge correlated more moderately with Vocational Indecision for the male sample, and had a low correlation with Vocational Indecision for the female sample. No significant correlation was obtained between Career Planning Knowledge and Extent of Career Planning for both male and female samples. Correlation matrices for grades 8, 9, 10, 11, and 12 revealed no significant correlations between Career Planning Knowledge and Vocational Indecision, and between Career Planning Knowledge and Extent of Career Planning.

Vocational Indecision had a low correlation with Extent of Career Planning for the overall sample, for the male sample and for the female sample. No significant correlation was obtained between Voca-

tional Indecision and Extent of Career Planning at the grades 8, 9, 10 levels. More moderate correlations between Vocational Indecision and Extent of Career Planning were found at the grades 11 and 12 levels.

Career Maturity Attitude correlated very moderately with Decisiveness, with Involvement, with Independence, with Orientation, and with Compromise for the overall sample, for the male sample, and for the female sample. Moderate correlations between Career Maturity Attitude and the five variables just listed were also obtained for the grades 8 to 12 samples.

CHAPTER V

DISCUSSION

The main purpose of the study was to investigate differences in mean scores on measures of nine selected career decision behaviors for independent samples of students from grades 8 to 12. A cross-sectional approach of simultaneous measurement of students from five grades was used.

Three hundred and fifty-four students undertaking grades 8 to 12 programs in the Red River School Division participated in the study. These students were administered a questionnaire containing four career measurement scales: Career Maturity Inventory, Attitude Scale, Counseling Form B-1, which also yielded five subscale scores; Assessment of Career Development, Career Planning Knowledge Scale; Career Decision Scale; and Career Development Inventory, Extent of Career Planning Scale. Grade-point averages from the subjects' mid-term spring grades were also computed to give a total of ten variable scores for each individual.

Mean scores and standard deviations were obtained at each grade level for the following nine career decision variables: Career Maturity Attitude, Decisiveness, Involvement, Independence, Orientation, Compromise, Career Planning Knowledge, Vocational Indecision, and Extent of Career Planning. Mean scores and standard deviations for each career decision variable by grade and by sex were calculated. Correlation coefficients between each career decision variable pair and between GPA and the nine career decision variables were computed for the overall sample, for the entire sample by sex, and for each grade

level.

Results of this study provided evidence that, in general, for the overall sample, mean scores of the nine career decision variables progressed across grades 8 to 12 according to theory:

1. Career Maturity Attitude mean scores increased across grades 8 to 12.
2. The Decisiveness mean score decreased from grade 8 to grade 9 and increased from grades 9 to 12.
3. Involvement mean scores increased from grades 8 to 10 and levelled off from grades 10 to 12.
4. Independence mean scores increased from grades 8 to 10 and levelled off from grades 10 to 12.
5. Orientation mean scores were similar for grades 8 and 9 and increased from grades 9 to 12.
6. The Compromise mean score decreased from grade 8 to grade 9 and increased from grades 9 to 12.
7. Career Planning Knowledge mean scores increased from grades 8 to 12.
8. The Vocational Indecision mean score increased from grade 8 to grade 9 and decreased from grades 9 to 12.
9. Extent of Career Planning mean scores were very similar for grades 8, 9, and 10 and increased from grades 10 to 12.

Significant differences between grades for these career decision variables were obtained between the lower grades (8 and 9) and the higher grades (10, 11, and 12). Grade 8 mean scores were higher, but not significantly, than grade 9 mean scores on Decisiveness, Orientation and Compromise, and lower on Vocational Indecision. Grade 10 mean scores were higher, but not significantly, than grade 11 mean scores on Decisiveness, Involvement, and Independence.

These results supported the evidence provided by Crites (1975) and by Herr and Enderlein (1976) that Career Maturity Attitude mean scores increase across grades 8 to 12. Results supported findings obtained by the American College Testing Program (1974) that Career Planning Knowledge mean scores increase across the grades, and research provided by Thompson and Lindeman (1981) that Extent of Career Planning mean scores increase from grades 9 to 12. Vocational Indecision mean scores obtained in this study supported the evidence provided by Osipow (1980) that Vocational Indecision mean scores decrease across grades 9 to 12.

Examination of the mean scores of the career decision variables by grade and by sex revealed similar patterns in the changes in mean scores across the grades for both males and females. These findings provided some support for sex differences on the various career decision behaviors. Herr and Enderlein (1976) concluded that the career maturity of girls and boys differed, with the former maturing earlier and advancing further than boys during the adolescent period. Similarly, Rathburn (1973) found that females had statistically higher means than males on Career Maturity Attitude in the higher grades. This sample's study results supported their conclusions at the grades 8, 9, and 10 levels. At the Grade 11 level, the Career Maturity Attitude mean score was significantly higher for males than for females. At the grade 12 level, the Career Maturity Attitude mean scores for males and females were very similar.

On the Career Planning Knowledge Scale, females scored higher than males across the grades. These results support the evidence provided by American College Testing Program (1974) that mean scores for females were slightly higher than mean scores for males on this variable.

Previous research results on sex differences and the Career Decision Scale are somewhat contradictory. Niece and Bradley (1979) reported no sex differences on this scale. Gordon and Osipow (1976) found freshmen males to be more decided than females. Osipow (1978) reported that from one large sample of high school students, the Vocational Indecision mean scores for females were lower than the mean scores for males. Females seemed more certain of their career plans. This study's results indicated that the mean scores were lower, but not significantly, for females than males at the grades 8 and 10 levels, while the mean scores were lower, but not significantly, for males than females at the grades 9, 11, and 12 levels.

Study results for the Extent of Career Planning variable revealed that the mean scores were slightly higher for males across the grades. These minimal sex differences supported the findings provided by Thompson and Lindeman (1981) that sex differences on this variable within a grade were meaningful in very few instances.

These study results provide further evidence on the directions in which career decision behaviors are expected to proceed. Jordaan (1974) reported that from grades 9 to 12, boys became more aware of the significant characteristics of occupations and developed more specific plans for obtaining further education, job training, and on-the-job experience. Jepsen (1976) concluded that students in the 12th grade had more complex information strategies based on greater resource utilization. Noeth and Prediger (1978) found that, across grades 8 to 12, students became more knowledgeable about job duties, worker attributes, and types of training associated with occupations. Students sought more information and became more involved in career planning.

Significant differences on Career Maturity Attitude, Career Planning Knowledge, Vocational Indecision, and Extent of Career Planning between the lower and higher grades suggested that students were involved in different stages of career planning. While the differences between grade 8 and grade 9 mean scores on certain career decision variables were not significant, higher mean scores for grade 8 implied that grade 8 students perhaps felt less pressure to make career decisions. Further investigation into sex differences on Career Maturity Attitude would be warranted, since this study's results indicated that Career Maturity Attitude mean scores of females were not higher than mean scores of males across the five grades, contrary to the reported research literature.

Research studies revealed correlations of approximately .35 between GPA and Career Maturity Attitude (Cover, 1968; Harris, 1966; Williams, 1967). Pearson product-moment correlations from this study yielded an r value of .18 between GPA and Career Maturity Attitude for the overall sample. The same value was obtained for the female sample. A coefficient of .28 between GPA and Career Maturity Attitude at the grade 8 level was closer to the expected value obtained in previous research. No other significant correlations between GPA and Career Maturity Attitude were found. Results for this sample implied that high academic achievement did not necessarily indicate high Career Maturity Attitude across the grades, with some exception at the grade 8 level. GPA correlated moderately with Career Planning Knowledge and not significantly with Vocational Indecision and Extent of Career Planning.

This study's results supported the findings obtained by Thompson

and Lindeman (1981) which stated that cognitive career measurement scales were more highly correlated with academic measures than were Career Planning and Career Exploration, both conative scales. The results also supported the evidence provided by Westbrook (1980) who found practically no relationship between scores on the Career Decision Scale and measures of achievement.

Career Maturity Attitude correlated moderately with Career Planning Knowledge and Vocational Indecision, and had a less moderate correlation with Extent of Career Planning. Jepsen and Prediger (1981) had obtained results which yielded moderate correlations between Career Maturity Attitude and Career Planning Knowledge, Vocational Indecision, and Extent of Career Planning. Appendix B lists these coefficients.

In this study, low correlations were obtained between Career Planning Knowledge and Vocational Indecision. No significant correlation was obtained between Career Planning Knowledge and Extent of Career Planning. Research data from correlational analyses depicted a very low relationship between scores on the knowledge scales and the experience and involvement scales (American Testing College Program, 1974).

Vocational Indecision had a low correlation with Extent of Career Planning for the overall sample, for the male sample, and for the female sample. The correlation coefficients between these two variables increased to more moderate levels at the grades 11 and 12 levels. These higher negative correlations indicated that students became less undecided as they became more involved in career planning.

In this study, Career Maturity Attitude had very moderate correlations with the five variables which were designed to measure it:

Decisiveness, Involvement, Independence, Orientation, and Compromise. These correlations were consistent with those obtained by Crites (1978) and provided further support to his model of career maturity. In this model, Career Choice Attitudes was a hierarchical dimension of career development, comprising interrelated, yet distinct, clusters of attitudes which converged upon an overall factor of general attitudinal maturity (Crites, 1978).

Implications

The results of this study have implications for further research. Since the data pertained to independent samples of grades 8 to 12 students from one particular rural school division, the results could not be generalized to the adolescent population in Manitoba. The evidence strongly encourages further investigation of this study's key research questions through the selection of a more representative sample of Manitoba students.

Further research might also include the longitudinal follow-up of a randomly selected group of students across grades 8 through 12. Crites (1978) suggested that a cross-sequential model be used to interpret developmental change in career decision behaviors across the grades. In this manner, both cross-sectional and longitudinal data would be used to examine differences between grades and would provide for an estimate of the possible effects of repeated testing.

The lower correlations obtained in this study between Career Maturity Attitude, Career Planning Knowledge, Vocational Indecision, and Extent of Career Planning indicate that these underlying dimensions of career decision-making must be treated as independent components of

career planning. Test developers, career development theorists, and researchers must continue to refine the instruments which measure these career decision behaviors and must clarify the empirical relationship between scores and theoretical concepts.

Research on the relationship between measured career maturity of students and skills-interest realism and interest-interest consistency would be an interesting extension of this study. Super (1982) implied that more research on both career choice content and career choice process was needed.

Career development measurement is intended to identify an individual's stage in career planning. In counselling individuals, Super (1982) suggested that it would be useful to know scores that individuals obtained on such instruments as the Career Maturity Inventory, Attitude Scale; the Career Planning Knowledge Scale; the Career Decision Scale; and the Extent of Career Planning Scale. Crites (1978) demonstrated that the Attitude Scale provided an index of career maturity that could not be found in traditional appraisal instruments. The Attitude Scale could be used by the counsellor to focus upon those aspects of career decision-making which may be giving the client particular difficulty. Crites (1978) also reported evidence from systematic research that the Attitude Scale was useful in career counselling for exploring the choice process with clients, for assessing their degree of career maturity, and for devising appropriate learning activities. Osipow (1980) reported a series of studies indicating the potential sensitivity of the Career Decision Scale for identifying changes brought about through interventions designed to reduce career indecision.

Measures such as those described in this study could be useful in

the assessment of various career education experiences. For example, experimental studies could be designed to examine the effects of the following career guidance interventions: computer-based instruction, structured group guidance activities, extensive testing and appraisal programs, work experience components, and individual career counselling approaches.

In conclusion, this exploratory study sought to examine variations of mean scores on specific career decision behaviors of independent groups of grades 8 to 12 students. For this particular sample, changes in mean scores did occur across the grades. Sex differences were also obtained within grade levels. The exploratory nature of the study produced some procedures and descriptions that have promise for increasing our understanding of career decision behaviors of adolescents.

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Appendix A

Classification of Items in the Attitude Scale, Counseling Form B-1

Career Maturity Attitude			Decisiveness	Involvement	Independence	Orientation	Compromise
1	21	41	1	4	7	10	13
2	22	42	3	6	9	12	15
3	23	47					
4	24	49	16	19	22	25	28
5	25	50	18	21	24	27	30
6	26	51	31	34	37	40	43
7	27	55	33	36	39	42	58
8	28	57					
10	29	59	46	49	52	55	73
11	31	60	48	51	54	57	
12	32	64					
14	33	65	61	64	67	70	
16	34	68	63	66	69	72	
17	35	71					
18	36	74					
19	37						
20	38						
	40						
Total	50		10	10	10	10	7

Appendix B

Correlations for Career Decision Variables (Jepsen & Prediger, 1981)

	Vocational Indecision	Career Planning Knowledge	Extent of Career Planning
Career Maturity Attitude	-.51	.40	.37
Vocational Indecision		-.14	-.47
Career Planning Knowledge			.13

Appendix C

Intertest Correlation Coefficients for the Attitude Scale Counseling Form B-1 (Crites, 1978)

	Decisiveness	Involvement	Independence	Orientation	Compromise
Attitude	.59	.67	.48	.72	.52
Decisiveness		.25	.18	.55	.30
Involvement			.34	.35	.39
Independence				.27	.35
Orientation					.42

Appendix D

CAREER SURVEYABOUT THIS SURVEY

This career survey has been constructed to examine career decision-making behaviors of junior and senior high students; it is not a personality inventory, an interest inventory, an achievement test, or an aptitude test.

The survey consists of the following: an Attitude Scale, a Career Planning Knowledge Scale, a Career Decision Scale, and an Extent of Career Planning Scale.

The Attitude Scale asks you about your attitudes and feelings toward making a career choice and entering the world of work.

The Career Planning Knowledge Scale considers the facts, concepts, and understandings useful for career planning.

The Career Decision Scale identifies barriers which prevent individuals from making career decisions.

The Extent of Career Planning Scale examines the degree of career planning that you have undertaken at the present time.

Please take your time in answering the questions in an honest and sincere manner. Confidentiality and anonymity will be guaranteed.

D I R E C T I O N S

There are a number of statements about career choice in this booklet. Career choice means the kind of job or work which you think you will probably be doing when you have finished all of your schooling.

* * * *

PART IATTITUDE SCALEITEMS #1-75

Read the statements and mark your answers on the NCS answer sheet, starting with #1. If you agree, or mostly agree with the statement, use your pencil to blacken the space marked with (a). If you disagree or mostly disagree with the statement, blacken the space marked with (b). Be sure that your marks are heavy and black and that they completely fill the spaces. Erase completely any answer you wish to change. Do not make any stray pencil marks on the Answer Sheet.

Continue to work until you reach the word STOP.

PART I - ATTITUDE SCALE

1. I often daydream about what I want to be, but I really haven't chosen a line of work yet.
2. If I can just help others in my work, I'll be happy.
3. Everyone seems to tell me something different; as a result I don't know which kind of work to choose.
4. It's probably just as easy to be successful in one occupation as it is in another.
5. In order to choose a job, you need to know what kind of person you are.
6. It doesn't matter which job you choose as long as it pays well.
7. I plan to follow the line of work my parents suggest.
8. As long as I can remember, I've known what kind of work I want to do.
9. You should decide for yourself what kind of work to do.
10. I don't know how to go about getting into the kind of work I want to do.
11. Work is worthwhile mainly because it lets you buy the things you want.
12. I know very little about the requirements of jobs.
13. When choosing an occupation, you should consider several different jobs.
14. If you have some doubts about what you want to do, ask your parents or friends for advice and suggestions.
15. I often feel that there is a real difference between what I am and what I want to be in my occupation.
16. There are so many things to consider in choosing an occupation, it is hard to make a decision.
17. You should choose an occupation which gives you a chance to help others.
18. The best thing to do is to try out several jobs, and then choose the one you like best.

GO ON TO NEXT PAGE

19. There is no point deciding on a job when the future is so uncertain.
20. Working is much like going to school.
21. There is only one occupation for each person.
22. Your parents probably know better than anybody else which occupation you should enter.
23. I want to really accomplish something in my work - to make a great discovery or earn a lot of money or help a great number of people.
24. When it comes to choosing a job, I'll make up my own mind.
25. I don't know what courses I should take in school.
26. The greatest appeal of a job to me is the opportunity it provides for getting ahead.
27. I can't understand how some people can be so certain about what they want to do.
28. I spend a lot of time wishing I could do work I know I can never do.
29. Work is dull and unpleasant.
30. Sometimes you have to take a job that is not your first choice.
31. I keep changing my occupational choice.
32. Once you choose a job, you can't choose another one.
33. As far as choosing an occupation is concerned, something will come along sooner or later.
34. I'm not going to worry about choosing an occupation until I'm out of school.
35. You can do any kind of work you want to do as long as you try hard.
36. You get into an occupation mostly by chance.
37. You can't go very far wrong by following your parents' advice about which job to choose.

GO ON TO NEXT PAGE

38. Whether you are interested in a particular kind of work is not as important as whether you can do it.
39. Choosing an occupation is something you have to do on your own.
40. I seldom think about the job I want to enter.
41. By the time you are 15, you should have your mind pretty well made up about the occupation you now intend to enter.
42. I have little or no idea of what working will be like.
43. I keep wondering how I can reconcile the kind of person I am with the kind of person I want to be in my future occupation.
44. I would like to rely on someone else to choose an occupation for me.
45. I'd rather not work than take a job I don't like.
46. I'd rather work than play.
47. I guess everybody has to go to work sooner or later, but I don't look forward to it.
48. I don't know whether my future occupation will allow me to be the kind of person I want to be.
49. It's who you know, not what you know, that's important in a job.
50. Your job is important because it determines how much you can earn.
51. You shouldn't worry about choosing a job since you don't have anything to say about it anyway.
52. I don't want my parents to tell me which occupation I should choose.
53. You almost always have to settle for a job that's less than you had hoped for.
54. If someone would tell me which occupation to enter, I would feel much better.
55. I am having difficulty in preparing myself for the work I want to do.

GO ON TO NEXT PAGE

56. I can't seem to become very concerned about my future occupation.
57. I really can't find any work that has much appeal to me.
58. I'm not going to give up anything to get the job I want.
59. Knowing what jobs are open is more important than knowing what you are good at when you choose an occupation.
60. The job I choose has to give me plenty of freedom to do what I want.
61. I don't know whether my occupational plans are realistic.
62. When trying to make an occupational choice, I wish that someone would tell me what to do.
63. I have so many interests it's hard to choose any one occupation.
64. You should choose a job in which you can someday become famous.
65. You should choose a job that allows you to do exactly what you want to do.
66. Entering one job is about the same as entering another.
67. Parents usually can choose the most appropriate jobs for their children.
68. You should choose an occupation, then plan how to enter it.
69. I feel that I should do what my parents want me to do.
70. Making an occupational decision confuses me because I don't feel that I know enough about myself or the world of work.
71. When I am trying to study, I often find myself daydreaming about what it will be like when I start working.
72. It's hard to imagine myself in any occupation.
73. I feel that my occupational goals are so high that I'll never be able to attain them.
74. The most important part of work is the pleasure which comes from doing it.
75. There may not be any openings for the job I want most.

STOP

PART II - CAREER PLANNING KNOWLEDGE SCALE - ITEMS #76-115

This part covers some of the things that may be helpful to know when you are making "career plans". By "CAREER PLANS", we mean plans for your EDUCATIONAL and JOB future. Please remember this as you answer the questions that follow.

Choose the one best answer to each question. If you are not sure of an answer, make your best guess.

A. For items 76-97, answer (a) for TRUE or MOSTLY TRUE, and (b) for FALSE or MOSTLY FALSE.

Mark all your answers on the answer sheet. Please remember to start with #76, on the same answer sheet.

(a) TRUE or MOSTLY TRUE

(b) FALSE or MOSTLY FALSE

76. Good career planning involves looking into several different occupations.
77. Except for the income it provides, a person's job has little influence on his or her way of life.
78. Most people do not need to begin career planning until their final year in high school.
79. There is only one "right" job for a person in terms of his or her abilities.
80. There is little that one can do to get ready to choose a job except to see what's available when the time comes to choose.
81. The average Canadian adult spends more waking time in work-related activities (including home-making) than in any other activity.
82. Two persons with the same interests and abilities could be satisfied with jobs that are different.
83. The Government Employment Offices provide free information about job openings and job training programs.
84. Apprentices are paid while they learn.
85. Less than one-third (1/3) of the students graduating from high school finish a three to four year college program.
86. Programs at two-year community colleges are limited to students who want to transfer to four-year colleges.

PART II - CAREER PLANNING KNOWLEDGE SCALE (cont'd)

87. Less than one-third (1/3) of all job openings require a college degree.
88. The English and Mathematics skills of first-year college students are about the same from one college to another.
89. The unemployment rate of 20-year-olds in the labor market is usually less than the rate for adults.
90. Few women work outside of the home after marriage.
91. Entering an occupation is the only way in which you can learn whether you might like this occupation.
92. Most adults know by the end of high school which occupation they will be in when they are 40.
93. Most persons remain in the same job throughout their adult lives.
94. Jobs of equal benefit to the community have the same social standing.
95. The earlier one chooses his or her life's work, the better.
96. Most people have the ability to do well in any job, if they set their minds to it.
97. The typical man will hold more than four different full-time jobs during his life time.

B. DIRECTIONS FOR QUESTIONS 98-102:

Each of the following is important in making career plans: goals and values; abilities; interests; and the job market. In the next 5 questions, pick the one that is the most important to consider in answering the question. Mark your answer (a,b,c,d) on the answer sheet, starting with #98.

98. What kinds of jobs have duties that I might like?

(Find the choice below that is most important to consider in answering this question.)

- a) goals and values
- b) abilities
- c) interests
- d) the job market

PART II - CAREER PLANNING KNOWLEDGE SCALE (cont'd)

99. What is important for me in a job?

- a) goals and values
- b) abilities
- c) interests
- d) the job market

100. Would I be able to learn the work?

- a) goals and values
- b) abilities
- c) interests
- d) the job market

101. Will I be able to find the job that I have prepared for?

- a) goals and values
- b) abilities
- c) interests
- d) the job market

102. Would I be able to do the work?

- a) goals and values
- b) abilities
- c) interests
- d) the job market

C. DIRECTIONS FOR QUESTIONS 103-115

Choose the one best answer a), b), c) or d) for each of the questions that follows. Mark your answers in the appropriate spaces on the answer sheet, starting with #103.

103. Which one of the following is the best way to begin career planning?

- a) look at what is available on the job market
- b) take tests to find out what you should do
- c) consider what it is you want out of a job
- d) read as many job descriptions as you can find

104. The Canadian Classification and Dictionary of Occupations gives information about all of the following except:

- a) job entry requirements
- b) physical demands of the job
- c) job openings in major cities
- d) descriptions of job duties

PART II - CAREER PLANNING KNOWLEDGE SCALE (cont'd)

105. Money for college may be provided by:
- a) a scholarship or grant
 - b) a loan
 - c) a part-time job
 - d) any of the above
106. Which of the following is probably the best way for people to find out whether they would like the work of a carpenter?
- a) ask a counselor
 - b) talk to a building contractor
 - c) take a shop course in woodworking or carpentry
 - d) read articles about the building industry
107. Choosing a job is similar to choosing a marriage partner in that:
- a) there is little a person can do to prepare for either choice
 - b) how a person feels about the choice is important in both cases
 - c) there is only one right person and one right job for each of us
 - d) both choices are final
108. Ideally, which of the following should be most important in your career decisions?
- a) what the job market is like
 - b) the decisions you have made before
 - c) what your parents did
 - d) what you want out of life
109. What will the labor force probably be like ten years from now?
- a) most jobs will require four or more years of college
 - b) there will be fewer jobs for unskilled workers
 - c) there will be more jobs for high school dropouts than there are now
 - d) there will be fewer jobs for technical workers
110. Which one of the following best describes women in the labor force?
- a) more women are choosing to remain in the home rather than work
 - b) a larger percent of women now hold "women's jobs" such as secretary and bank teller
 - c) more women are working at jobs which were once thought to be "men's jobs"
 - d) women now outnumber men on what used to be "men's jobs", for example, drafting and law.

PART II - CAREER PLANNING KNOWLEDGE SCALE (cont'd)

111. Bob is interested in so many jobs he cannot make up his mind. He should:
- try out as many of the jobs as he can
 - try one and if he likes it, stick with it
 - find out what to do by taking an ability test
 - find out more about what each job is like.
112. Paula is interested in a medical career as a psychiatrist but doesn't know much about what they do. What is the best step for her to take?
- look up the job in a medical college catalog
 - make an appointment to see a psychiatrist
 - look up "psychiatrist" in the dictionary
 - get descriptions of the job from the school guidance office or library
113. Alice has been accepted by two colleges. College A is better known than College B but its costs are higher. She cannot make a choice. What is the best thing for her to do?
- choose College B because it will cost less
 - choose College A and write to the financial aid office there for information
 - make a list of what she expects to get out of college and compare the two schools that way
 - ask her parents to decide since they pay the bills
114. John's high school grades are good, and he would like to be an engineer. No one in his family went to college. His parents are against his going to college. What should he do?
- see if his parents will agree to his taking a two-year program in a community college.
 - see his counselor about getting financial aid so he can go to an engineering college without the help of his parents
 - arrange a meeting with his guidance counselor and his parents to talk over the whole program
 - join the army and train for engineering there
115. Bill cannot decide between engineering and auto mechanics. However, he must decide soon or it will be too late to prepare for either. What is the best thing for him to do?
- get some part-time work experience in each
 - get a job at a garage, and if he doesn't like it, go into engineering
 - discuss his goals and his abilities for each job with the school counselor
 - work his way through engineering college as a mechanic

STOP

PART III - CAREER DECISION SCALEITEMS #116 - 131

Please answer these questions on the same answer sheet, starting with #116.

This questionnaire contains some statements that people commonly make about their educational and occupational plans. Some of the statements may apply to you; others may not. Please read through them and indicate how closely each item describes you in your thinking about a career or an educational choice by darkening completely the appropriate number on the answer sheet.

Example:Sample Answer

I am excited about graduating
and going to work.

A	B	C	D
<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4

If you are excited about going to work and feel no hesitation about it, you would darken 4 completely. If the item is very close, but not exactly the way you feel, you would darken 3 completely. If the item describes you in some ways, but in general it is more unlike than like your feelings, you would darken 2 completely. Finally, you would darken 1 completely, if the item does not describe your feelings at all (that is, you are experiencing a great deal of concern and no excitement about graduation and work).

If you change your answer, please be sure that all previous marks are completely erased. Please give only one response to each item and respond to all items.

REMEMBER - 1 is not at all like me; 2 is only slightly like me,
3 is very much like me, 4 is exactly like me.

DARKEN ANSWER

- | | | | | |
|--|-------------------------|-------------------------|-------------------------|-------------------------|
| 116. If I had skills or the opportunity, I know what I would be, but this choice is really not possible for me. I haven't given much consideration to any other alternatives, however. | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 117. Several careers have equal appeal to me. I'm having a difficult time deciding among them. | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 118. I know I will have to go to work eventually, but none of the careers I know about appeal to me. | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 119. I know what I'd like to be, but I'd be going against the wishes of someone who is important to me if I did so. Because of this, it's difficult for me to make a career decision right now. I hope I can find a way to please them and myself. | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |

REMEMBER - 1 is not at all like me; 2 is only slightly like me,
3 is very much like me; 4 is exactly like me.

120. Until now, I haven't given much thought to choosing a career. I feel lost when I think about it because I haven't had many experiences in making decisions on my own and I don't have enough information to make a career decision right now. (1) (2) (3) (4)
121. I feel discouraged because everything about choosing a career seems too "iffy" and uncertain; I feel discouraged, so much so that I'd like to put off making a decision for the time being. (1) (2) (3) (4)
122. I thought I knew what I wanted for a career, but recently I found out that it wouldn't be possible for me to pursue it. Now, I've got to start looking for other possible careers. (1) (2) (3) (4)
123. I want to be absolutely certain that my career choice is the "right" one, but none of the careers I know about seem ideal to me. (1) (2) (3) (4)
124. Having to make a career decision bothers me. I'd like to make a decision quickly and get it over with. I wish I could take a test that would tell me what kind of career I should pursue. (1) (2) (3) (4)
125. I know what I'd like to major in (or the job I'd like to have) but I don't know what my abilities are. (1) (2) (3) (4)
126. I can't make a career choice right now because I don't know what my abilities are. (1) (2) (3) (4)
127. I don't know what my interests are. A few things "turn me on" but I'm not certain that they are related in any way to my career possibilities. (1) (2) (3) (4)
128. So many things interest me and I know I have the ability to do well regardless of what career I choose. It's hard for me to find just one thing that I would want as a career. (1) (2) (3) (4)
129. I have decided on a career but I'm not certain how to go about implementing my choice. What do I need to do to make my decision become a reality? (1) (2) (3) (4)
130. I need more information about what different occupations are like before I can make a career decision. (1) (2) (3) (4)
131. I think I know what I want to major in (or the job I'd like to have) but feel I need some additional support for it as a choice for myself. (1) (2) (3) (4)

STOP

PART IV - EXTENT OF CAREER PLANNING SCALEITEMS #132 - 151

Please answer these questions on the answer sheet, starting with #132.

How much thinking and planning have you done in the following areas? For each question below, choose the answer that best tells what you have done so far. Darken the appropriate letter on the answer sheet, starting with #132.

132. Finding out about educational and occupational possibilities by going to the library, sending away for information, or talking to somebody who knows.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
133. Talking about career plans with an adult who knows something about me.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
134. Taking classes which will help me decide what line of work to go into when I leave school or college.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
135. Taking classes which will help me in college, in job training, or on the job.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
136. Taking part in school or out-of-school activities which will help me in college, in training, or on the job.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.

PART IV - EXTENT OF CAREER PLANNING SCALE (con't)

137. Taking part in school or after-school activities (for example, science club, school newspaper, volunteer nurse's aid) which will help me decide what kind of work to go into when I leave school.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
138. Getting a part-time or summer job which will help me decide what kind of work I might go into.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
139. Getting money for college or for job training.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
140. Working out problems that might make it hard for me to get the kind of training or the kind of work I would like.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
141. Getting the kind of training, education, or experience I will need to get the kind of work I would like.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.
142. Getting a job once I have finished my education and training.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.

PART IV - EXTENT OF CAREER PLANNING SCALE (con't)

143. Doing things that will help me be a good worker, one who is most likely to be sure of a job.
- a) I have not yet given any thought to this.
 - b) I have given some thought to this, but haven't made any plans yet.
 - c) I have some plans, but am still not sure of them.
 - d) I have made definite plans, but don't know yet how to carry them out.
 - e) I have made definite plans, and know what to do to carry them out.

The next questions concern the kind of work you would like to do when you complete your education. At this stage, you probably have not definitely decided on a specific occupation, but you probably can think of a field of work or type of job you would like to work at. Keeping in mind the type of job you think you might like to be in after you finish your schooling, choose the one best answer which tells the amount of knowledge you already have about these jobs.

144. What people really do on the job.
- a) Hardly any knowledge.
 - b) A little knowledge.
 - c) An average amount of knowledge.
 - d) A good deal of knowledge.
 - e) A great deal of knowledge.
145. The abilities needed for the occupation.
- a) Hardly any knowledge.
 - b) A little knowledge.
 - c) An average amount of knowledge.
 - d) A good deal of knowledge.
 - e) A great deal of knowledge.
146. The working conditions on such jobs.
- a) Hardly any knowledge.
 - b) A little knowledge.
 - c) An average amount of knowledge.
 - d) A good deal of knowledge.
 - e) A great deal of knowledge.
147. The education or training needed to get such a job.
- a) Hardly any knowledge.
 - b) A little knowledge.
 - c) An average amount of knowledge.
 - d) A good deal of knowledge.
 - e) A great deal of knowledge.

PART IV - EXTENT OF CAREER PLANNING SCALE (con't)

148. The need for people on that kind of job in the future.
- a) Hardly any knowledge.
 - b) A little knowledge.
 - c) An average amount of knowledge.
 - d) A good deal of knowledge.
 - e) A great deal of knowledge.
149. Different ways of getting into that occupation.
- a) Hardly any knowledge.
 - b) A little knowledge.
 - c) An average amount of knowledge.
 - d) A good deal of knowledge.
 - e) A great deal of knowledge.
150. The chances of advancing in that kind of job or occupation.
- a) Hardly any knowledge.
 - b) A little knowledge.
 - c) An average amount of knowledge.
 - d) A good deal of knowledge.
 - e) A great deal of knowledge.
151. What sort of working day and work week I might have in the occupation.
- a) Hardly any knowledge.
 - b) A little knowledge.
 - c) An average amount of knowledge.
 - d) A good deal of knowledge.
 - e) A great deal of knowledge.

E N D