A STUDY OF THE MATURITY OF CAREER ATTITUDES OF SENIOR HIGH SCHOOL STUDENTS IN THE HUMBER-ST. BARBE AND PORT AU PORT ROMAN CATHOLIC SCHOOL DISTRICTS

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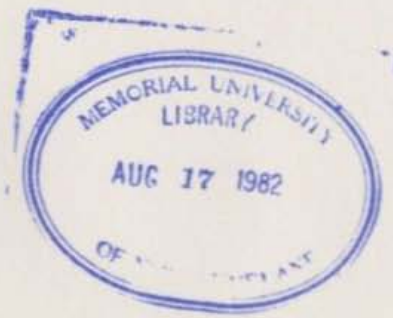

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Memorial University of Newfoundland

A Study of the Maturity of Career Attitudes of Senior High School Students in the Humber-St. Barbe and Port au Port Roman Catholic School Districts

by

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ABSTRACT

The study was designed for the purpose of determining and ascertaining the career attitude maturity of senior high school students. Also, an attempt was made to determine if relationships exist between career attitude maturity and the variables of sex, socio-economic status, grade level, community of residence, and school size. Furthermore, information was gathered concerning the provisions made for career guidance for the participants in the study.

The data required for the study were obtained from the responses to the CMI Attitude Scale and the Student Questionnaire of participants in June of 1978. The Blishen (1971) Socio-Economic Index for Occupations was used to determine the socio-economic status of the participants in the study. The proportional stratified sample included 334 senior high school students randomly selected from eleven high schools in the Humber-St. Barbe and Port au Port Roman Catholic School Districts. Statistical procedures included analysis of variance and the Scheffé test.

The level of career attitude maturity of the students was found to be significantly lower than that of students of similar age and grade for whom the standardized norms had been computed. Furthermore, their level of career attitude maturity was comparable to the level of other students of similar age and grade but who were from different economic,

ethnic and racial groups. These groups include the disadvantaged, American Indians, Mexican Americans, and inner-city Blacks. No significant relationship was found between career attitude maturity and the subject's sex. However, significant relationships existed between career attitude maturity and the variables of grade level, socio-economic status and community of residence. Furthermore, a significant relationship was found between career attitude maturity and certain classifications of school size. Students attending schools with a range in school size of 151 to 600 students had a significantly higher level of career attitude maturity than students attending schools with ranges in school size of either 51 to 150 or 601 to 650 students.

It was proposed that the study sample's general lack of career guidance and their depressed performance on the CMI Attitude Scale indicated that senior high school students in the two school districts had a great need for career guidance programmes. Furthermore, it was suggested that the significant relationship which existed between career attitude maturity and variables of socio-economic status, community of residence, and certain classifications of school size might provide educational administrators with some direction as to what high school populations and what type of high schools in the Province have the greatest need for career guidance programmes. Finally, it was proposed that the study sample's depressed performance on the CMI

Attitude Scale, may imply that changes in the way the educational system is organized in this Province may be required.

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Chapter 1

INTRODUCTION

The study was primarily concerned with examining and assessing the career attitude maturity of senior high school students. During their high school years youth make decisions concerning different curricula. These decisions are vocational in nature because different curricula may lead to different occupations. Besides making decisions pertaining to different curricula, the high school student must also decide whether he will stay in or drop out of school. The outcome of these educational decisions will affect the student's future career by narrowing subsequent educational and vocational choices (Super and Overstreet, 1960, p. 11).

In the United States, writers such as William Atkins have argued that a strong relationship exists between the world of education and the world of work. Atkins states that the knowledge and adaptability obtained from even the most general and humanistic forms of learning contribute to economic, social and technological progress (Franklin, 1974, p. 1). In 1975, Statistics Canada revealed that there was a direct relationship between the amount of formal education a person possessed and his average yearly income. The following data were disclosed:

Table 1

Average Income of Population 15 Years and Over by Sex and Level of Schooling

Level of Education	Average Yearly Income	
	Male	Female
Less than Grade 9	$5,233	$2,137
Grades 9 and 10	6,252	2,569
Grade 11	6,466	2,981
Some University	6,838	3,752
University Degree	12,682	5,787

Statistics Canada (1975, pp. 1-27)

In Newfoundland, the conviction that there is a relationship between education and work is suggested by the statement of The Aims of Public Education for Newfoundland, a government publication. According to this document, an educated person is an individual who has acquired the skills and knowledge of an occupation that contributes to societal well being. In accordance with this conviction, one of the stated aims of education is "to give pupils guidance in the choice of a career and to provide opportunities to begin preparation for occupational life" (The Aims of Public Education for Newfoundland, 1959, p. 7). It becomes apparent then that the responsibility of educators is to plan for and make sure opportunities exist. In order to plan for these opportunities, reliable data are necessary concerning the career choice process of Newfoundland youth.

This study was designed to help provide such data.

STATEMENT OF THE PROBLEM

The purpose of the study was to examine and assess the career attitude maturity of senior high school students. Specifically, the study sought to answer the following questions:

1. What is the level of career attitude maturity of a sample of ninth, tenth and eleventh grade students?
2. Is there any significant relationship between the career attitude maturity of senior high school students and sex of students?
3. Is there any significant relationship between the career attitude maturity of senior high school students and their father's or guardian's socio-economic status?
4. Is there any significant relationship between the career attitude maturity of senior high school students and grade level of students?
5. Is there any significant relationship between the career attitude maturity of senior high school students and the size of the community in which the students reside.
6. Is there any significant relationship between the career attitude maturity of senior high school students and the size of the school which the

students are attending.

SIGNIFICANCE OF THE STUDY

In recent years research findings have indicated that students in Newfoundland have not been well prepared for making occupational choices. In 1967, Breton and McDonald presented data showing that 33.7 percent of the boys and 19.7 percent of the girls in grade eleven in Newfoundland were not able to express an occupational preference; 33.7 percent of the boys and 27.0 percent of the girls could not identify the type of work they could expect to have as a career. More recently, Sullivan and Russel (1974) found that 31.0 percent of their sample of students taking first year psychology at Memorial University were uncertain about the choice of a career.

Parsons (1978) has reported that of the 30,000 Newfoundlanders listed as unemployed for 1977, over 50.0 percent were in the 15-24 year age group. This rate of youth unemployment could cause some high school students to become fatalistic and apathetic about unemployment. Furthermore, the findings of Breton and McDonald (1967) seem to indicate that the Province's educational system may be contributing to this development by failing, in part, to prepare students for the world of work.

If, in the past, students in Newfoundland have not been well prepared for making occupational choices, then it

is time for educators to develop some kind of strategy for curriculum improvement. The planning for such a strategy should include the examining of innovations that have been proven to be effective in helping students with the career choice process.

The schools in the Province could use such measures as the Attitude Scale of the Career Maturity Inventory to identify students who are least likely to possess the necessary career choice attitudes for making realistic and independent career decisions. Through an analysis of Attitude Scale responses, exploratory career development experience could be generated aimed at developing more productive career choice attitudes. Such measures initiated by the schools would better prepare students for occupational life and subsequently might help curtail the Province's high rate of unemployed youth.

If the Attitude Scale is to be effectively used by high schools in Newfoundland, local grade norms for career attitude maturity must be established. The study represents the first step at establishing such norms for senior high school students in one area of the Province. Furthermore, this study attempted to determine if local grade norms are significantly related to sex, socioeconomic status, grade level, community of residence, and school size.

There have been attempts in this Province at developing career guidance programmes that are applicable to the Newfoundland setting (for example, McCarthy,

1976). The findings of the present study may help administrators determine what high school populations and what type of schools in the Province have the greatest need for such programmes.

DELIMITATIONS

The study was delimited in the following manner:

1. The schools involved included eleven high schools containing grades nine, ten, and eleven in the Humber-St. Barbe and Port au Port Roman Catholic School Districts.
2. Some students failed to respond to every item on the Attitude Scale of the Career Maturity Inventory. Students who failed to respond to every item were excluded from the study.
3. Of the various dimensions of career maturity, only one dimension was included in this study. This was because this study was only concerned with assessing the career attitude maturity of the senior high school students. Although another dimension of career maturity called "career choice competencies" could have been assessed, it was not included in the study. This was because the instrument, the Competence Test of the Career Maturity, measuring this dimension, was only standardized in 1972.

Furthermore, it contained a lot of examples of American content which may not have been familiar to certain Newfoundland senior high school populations. Also investigated were background variables (sex, socio-economic status, grade level, community of residence and school size) which might affect career attitude maturity.

LIMITATIONS

The study has the following limitations:

1. It was limited by the ability and willingness of subjects to respond to the questionnaire administered to them.
2. The results must be interpreted in the context of the community in which the study was conducted.

DEFINITION OF TERMS

Career Development refers to an ongoing process that occurs over the life span and includes home, school, and community experiences related to an individual's self-concept and its implementation in life style as one lives life and makes a living. Career development was originally called vocational development.

Career Education refers to part of the process of career

development that occurs both within and outside of a school setting and involves learning how to live and make a living.

Vocational Maturity refers to the definition of vocational maturity given by Crites (1965):

> The concept of vocational maturity is more comprehensive than vocational choice, including not only the selection of an occupation but also the attitudes toward decision making, comprehending and understanding of job requirements, planning activity and ability and development of vocational capabilities (p. 4).

Career Attitude Maturity refers to career choice attitudes which is one dimension of career maturity. Crites (1973a) uses the concept of career maturity instead of vocational maturity on account of the current emphasis on career education and because "career" is a broader term that does not have some of the specialized meanings that are associated with "vocational." For the purposes of this study, career attitude maturity was determined by the subject's mean score on the Attitude Scale of the Career Maturity Inventory.

Socio-economic Status refers to the occupational position of the subject's father or guardian as determined by the Blishen Socio-Economic Index for Occupations. Subjects who had a socio-economic level which was higher or equal to Class 3 were considered to have high socio-economic status. Low socio-economic status was a socio-economic level which was lower than Class 3.

Grade Level refers to the actual grade that the subject was

in at the time he or she was tested for career attitude maturity. Grade levels were the ninth, tenth and eleventh grades.

Community of Residence refers to the community in which the subject resides. 'Urban communities' were those with a population greater than or equal to 2,500, and for this study included Corner Brook, Stephenville, and Deer Lake. Subjects living in communities outside of these areas, with a population fewer than 2,500, were designated as 'rural'.

School Size refers to the total enrollment of the ninth, tenth, and eleventh grade of the high school which the subject attended. A school with an enrollment of fewer than or equal to 250 pupils, was designated as a 'small high school'. A 'large high school' had an enrollment greater than 250 pupils.

ORGANIZATION OF THE THESIS

The next chapter presents a summary of the literature related to this study, including an examination of the theoretical background and the body of research which provided the framework and the rationale for the study. Chapter 3 contains a description and discussion of the instruments used and an outline of the methodology employed. A complete description of the samples used is provided in

Chapter 4. Chapter 5 includes a report of the procedures used to analyze the data and the results of the statistical tests. The final chapter of the thesis presents a summary of the study, a discussion of the findings, with some general conclusions, and some implications for educational administrators.

Chapter 2

REVIEW OF THE LITERATURE

The chapter presents a summary of the theoretical concepts and constructs which furnished the background for the present study. It attempts to describe the development of the concept of career maturity from Super's (1957) theory of career development. The literature on measuring career maturity through using the "Career Maturity Inventory" is summarized to show how John Crites' research on Super's theory led him to cast Super's dimensions of career maturity into a conceptual framework. The framework was of great heuristic value for measurement and subsequently helped Crites to develop the Attitude Scale and the Competence Test of the CMI. The research related to career attitude maturity and certain background variables is reviewed for the purpose of relating it to the theoretical framework that is presented.

The chapter is in five parts. The first summarizes the development of the concept of career maturity, the second presents the theoretical framework and describes the development of the CMI, the third reviews studies of career maturity and certain background variables, the fourth presents the rationale for the hypotheses, and the fifth restates the research questions in the form of alternate hypotheses rather than in the form of null hypotheses.

THE DEVELOPMENT OF THE CONCEPT OF CAREER MATURITY

The Concept of Vocational Maturity

An examination of the vocational guidance literature reveals that during the first three decades of this century authorities usually conceptualized vocational choice as non-developmental. Authorities such as Patterson and Darley (1936), Williamson and Darley (1937), and others, generally described vocational choice as a decision which the individual makes at a given moment in time, usually upon graduation from high school (Crites, 1969a). The cross-sectional concept of vocational choice, according to Crites (1973a), was:

> ... institutionalized and perpetuated by the construction of a host of trait-and-factor measures (aptitudes, interests, and personality characteristics) designed to facilitate the process of matching men with jobs (p. 5).

When more information concerning an individual's vocational behavior was obtained through empirical studies and theoretical formulations, it became evident that vocational choice was a dynamic and on-going process that is developmental in nature (Holland, 1964).

Super (1953, 1955, 1957, 1963, 1969) has been steadily formulating a theory of vocational behavior that is developmental. One of the elements of his theory is the concept of life stages. Life stages are a series of periods throughout life when particular vocational tasks, attitudes, and behaviors have to be acquired before one can successfully

proceed to the next life stage. He (1957) describes five life stages. They are growth (ages 0 to 14), exploration (ages 14 to 25), establishment (ages 25 to 45), maintenance (ages 45 to 65), and decline (ages 65 and over). Besides presenting this behavioral structure, Super also improved upon an earlier definition of vocational maturity. In 1955, he suggested that:

> Vocational maturity is used to denote the degree of development, the place reached on the continuum of vocational development from exploration to decline. Vocational maturity may be thought of as vocational age, conceptually similar to mental age in early adolescence ... (p. 153).

Super (1957) later presented a more comprehensive definition and description of vocational maturity which contained two different "kinds" of vocational maturity. Vocational Maturity I is gauged by comparing life stages. For example, an individual who is in the establishment life stage is more mature than one who is in the exploratory life stage. Vocational Maturity II is presented as a more refined description of Vocational Maturity I. It is measured by comparing the appropriateness and sufficiency of vocational behaviors of individuals within the same life stage as they cope with the vocational development tasks of that stage.

Thompson (1975) has described five activities which Super (1963) calls vocational developmental tasks. They are crystallization (ages 14 to 18), specification (ages 18 to 21), implementation (ages 21 to 24), stabilization

(ages 25 to 35), and consolidation (ages 35 and over). A number of these vocational tasks with their attitudes and behaviors are specific to certain life stages. According to Super's formulation, the senior high school students being studied in this investigation are in the exploratory life stage. The most immediate developmental task they would have to complete is the task of crystallization. As previously noted, the task of crystallization tends to occur during the 14 to 18 year age span which has implications for educators. The attitudes and behaviors relevant to the developmental task of crystallization listed by Super (1963) are:

1. Awareness of the need to crystallize
2. Use of resources
3. Awareness of the factors to consider
4. Awareness of contingencies which may affect goals
5. Differentiation of interests and values
6. Awareness of present and future relationships
7. Consistency of preference
8. Possession of information concerning the preferred occupation
9. Planning for the preferred occupations
10. Wisdom of the vocational preference (p. 138).

The Concept of Career Maturity

In the early seventies, the concept which Super (1955) developed and named vocational maturity was replaced by the term career maturity. Crites (1972-73) explained the rationale behind the change of name. He stated that the change reflected the emphasis that had been placed on career education in the United States. He also noted that:

> ...because of certain accrued surplus meaning, particularly as associated with the rubric vocational education, the term vocational maturity has recently been revised to career maturity, which is a more precise designation since it better expresses the developmental nature of the career decision-making process (p. 2).

It is also worth noting that Crites (1972-73) uses the term career maturity instead of vocational maturity in his references to earlier pieces of research where the latter term was once employed. Therefore, for the sake of consistency, and since this study involves the use of Crites' CMI Attitude Scale, which measures career attitude maturity, one dimension of career maturity, the researcher will be using the term career maturity throughout the rest of this study.

As stated earlier, the concept of career maturity can be defined in two ways. Super, Crites, Hummel, Moser, Overstreet, and Warnath (1957, p. 57) have defined it as:

> Actual life stage in relation to expected life stage provides one basis for judging career maturity (career maturity 1). The second way of evaluating career maturity is based on the behavioral repertoire which the individual has available for coping with the developmental tasks considered appropriate for his age and expected life stage (career maturity 11).

These definitions of career maturity have several presumed dimensions which Super and his associates (1955; 1957) have delineated and defined over the years as part of the Career Pattern Study, a 20-year longitudinal investigation of career development from early adolescence (approximately age 15) to mid-life (age 35). There are five principal dimensions, each with several parts or indices, which have been hypothesized as applicable to the exploratory life stage. Crites (1972-73) described these five dimensions as follows:

1. Orientation to Vocational Choice: One mark of career maturity is the extent to which a young person is aware of the need to choose an occupation and the factors which enter into this decision.

2. Information and Planning: Another criterion of career maturity is the amount of reliable information an individual has to make decisions about occupations and then to plan logically and chronologically for the future.

3. Consistency of Vocational Preferences: Still another index of career maturity is how consistant an adolescent is in his/her preferences for different occupations from one point in time to another.

4. Crystallization of Traits: In mature career development the psychological attributes of the individual relevant to decision-making, e.g. differentiable interests, patterns, explicit values, and increasing independence, develop apace with the tasks which have to be accomplished.

5. Wisdom of Vocational Preference: More generally known as realism of vocational choice, this dimension of career maturity reflects how closely an individual's career decisions agree with various aspects of reality, such as the prerequisite ability for the preferred occupation, the appropriate interests for the chosen field, and the availability of financial resources for relevant training (p. 3).

These five dimension or Indices of Vocational Maturity (IVM), as they were called in the Career Pattern Study, were conceived to chart the career maturity of adolescents during the higher school years. However, it was recognized that major changes might have to be made before they were relevant to the entire exploratory life stage (Crites, 1972-73).

Crites (1973a) has reorganized and revised the CPS dimensions of career maturity into the model of career maturity shown in Figure 1. In describing this model, he explained that the lowest level includes the operationally defined variables of interest; the intermediate level represents group factors constituted from interrelationships among the variables; and the highest level defined by the common variance among the group factors. He also noted that most of its properties and parameters are hypothetical and it would take many years to test it empirically in longitudinal research.

The Instruments Used to Measure Career Maturity

Investigators of career maturity generally agree that measuring career maturity is important for determining an individual's readiness to make appropriate career decisions. An assessment of a person's career maturity would indicate whether he has, at hand, the necessary attitudes and behavioral repertoire in order to make independent and realistic educational decisions (Super and Overstreet, 1960

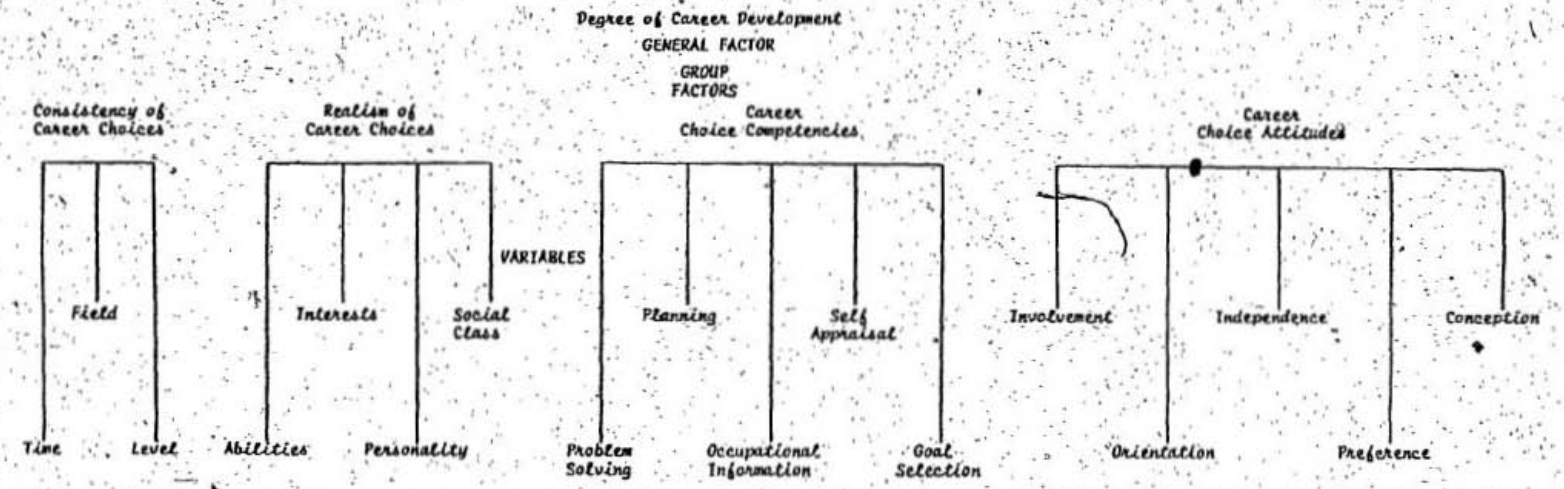

Figure 1

A Model of Career Attitude Maturity in Adolescence

and Cunningham and Westbrook, 1970).

Whereas career maturity is understood to be an important factor in vocational adjustment, there are problems entailed in measuring it (Westbrook and Mastic, 1973). However, Super (1960) and Gribbons and Lohnes (1968) have demonstrated that career maturity can be measured but the instruments used in their research were structured and semi-structured interview schedules that are awkward and time-consuming to administer and difficult to score.

Gribbons and Lohnes (1968) developed a structured interview approach for measuring career development which yielded eight scores:

1. Factors in Curriculum Choice
2. Factors in Occupational Choice
3. Verbalized Strengths and Weaknesses (and their relation to the vocational choice)
4. Accuracy of Self Appraisal
5. Evidence of Self Rating (quality)
6. Interests (awareness of them and their relation to choice)
7. Values
8. Independence of Choice

These scores make up a Readiness for Vocational Planning profile. They concluded that their scales do measure career maturity. However, Gribbons and Lohnes (1968) also found that the eight grade scores obtained by their scales were

better predictors than tenth grade scores of later educational and vocational criteria. It was this finding that caused Super (1969) to question the validity of these scales for measuring career maturity. He stated that "a maturity trait should become more valid as it matures" (Super, 1969, p. 6). Furthermore, Cunningham and Westbrook (1970) contended that Gribbons and Lohnes Scales, like Super's interview schedule, require the use of involved scoring procedures which restrict their usefulness.

Another approach for measuring career maturity is a method developed by Vriend (1969). The approach does not depend on interview data but depends on a combination of scales. The combination of scales used by Vriend was:

1. School achievement score
2. Vocational planning
3. Activities in and out of school
4. Self-knowledge score
5. Job knowledge score

Besides reporting a high reliability coefficient, Vriend (1969) also reported another finding. He demonstrated that a program which integrates vocational related knowledge and activities into the total educational program can improve the maturity of career development of inner city youth regardless of sexual or curricular group membership.

MEASURING CAREER MATURITY USING THE CAREER MATURITY INVENTORY

The Career Maturity Inventory (CMI), which was originally called the Vocational Development Inventory, began to be developed in 1961 because of Crites' wish to carry on research on Super's (1957) theory of career development. The CMI was developed in two sections; first, the Attitude Scale and then the Competence Test. Most of the research that has utilized the CMI has been concerned with the Attitude Scale. Crites (1971) reported that approximately two hundred studies, using the Attitude Scale, have been completed and its psychometric parameters are well known. The Attitude Scale has been selected as the research instrument for this study.

The Attitude Scale of the Career Maturity Inventory

Crites (1965) has developed an instrument called the Attitude Scale of the Career Maturity Inventory, that measures one dimension of career maturity. It measures the career choice attitudes dimension.

The Attitude Scale was developed by gathering statements made by clients in career counselling and studies of career choice (Crites, 1969b). The body of research brought about the development of verbalizations which were subsequently edited so that they would be as realistic as possible and yet consistent with the theoretical definitions of the model of career maturity Figure 1 (Supra, p. 18).

The selection of the 100 items from an initial pool of 1,000 items was made to include items which would define each of the attitude clusters listed in Table 2 (Crites, 1973b, p. 12). The original 100 item Attitude Scale was administered on a group basis during the 1961-1962 academic year to 2,822 students in grades five through twelve of the Cedar Rapids, Iowa, school system. Cedar Rapids, with a population of approximately 92,000 persons in the 1960 census, had a fairly diversified economy and representative social structure (Crites, 1969a). In 1965, Crites reported that five elementary schools, two junior high schools and one senior high school were sampled in the system. Item means for both the five-point Likert-type and True-False response formats were compared using analysis of variance and t-tests. Crites (1971) justified the selection of the 50 items from the initial 100 items when he wrote:

> If an item related monotonically, i.e. its means either increased or decreased with no statistically significant reversals to these indices of time (age/grade), it was provisionally accepted for the scale, the plan being to further evaluate the items against the same criterion when longitudinal data were available from yearly follow-up testings (p. 11).

The results of the standardization were as follows (Crites, 1973b, pp. 13-14):

(1) Of the initial pool of 100 items which were tried out, 50 were monotonically related to grade. This variable was found to yield greater differentiation than age and was consequently chosen as the index of time in all the subsequent analyses.

Table 2

Variables in the Attitude Scale of the CMI

Dimension	Definition	Sample Item
Involvement in the choice process	Extent to which individual is actively participating in the process of making a choice	"I seldom think about the job I want to enter."
Orientation toward work	Extent to which individual is task or pleasure-oriented in his attitudes toward work and the values he places upon work	"Work is dull and unpleasant." and "Work is worthwhile mainly because it lets you buy the things you want."
Independence in decision making	Extent to which individual relies upon others in the choice of an occupation	"I plan to follow the line of work my parents suggest."
Preference for career choice factors	Extent to which individual bases his choice upon a particular factor	"Whether you are interested in a job is not as important as whether you can do the work."
Conceptions of the choice process	Extent to which individual has accurate or inaccurate conceptions about making a career choice	"A person can do any kind of work he wants as long as he tries hard."

(2) There were no significant differences between items written in the first and third person; so both grammatical forms were retained.

(3) There were differences in differentiation between both age and grade groupings for the two types of item format, with the True-False option producing a greater number of significant differences than the five-point scale. Consequently, the True-False response format was adopted and has been used in administering the Attitude Scale since the standardization.

(4) Trends in item responses from the lower to the upper grades were predominantly from True to False, with stages for many of them corresponding to the transitional points in the school structure.

(5) Differences between the sexes and schools were negligible. There were two items which accounted for most (eight out of ten) of the differences among schools. Because these effects were so small, the items were retained without revision or replacement.

(6) Total CM score analyses indicated that there was a systematic increase in means across grades, with the possible exception of the eleventh grade, which was lower than the twelfth but equal to the tenth grade. Similarly, the cumulative percentage ogives revealed good differentiation between adjacent score distributions, except for the eleventh grade, which was either atypical in this or variant for some unknown reason.

The end result of the standardization was an Attitude Scale consisting of fifty monotonically related items stated in both the first and third person using a True-False format.

The Competence Test of the CMI

In contrast to the voluminous data which has been accumulated on the Attitude Scale, Crites (1972-73) reported that the Competence Test has only recently been standardized. He also stated that the Competence Test appraises the cognitive facets of career decision-making and is designed

to quantify each of the variables in the Career Choice Competencies group of the career maturity model diagrammed in Figure 1 (Supra, p. 18). Crites (1972-73) explained the purpose of each of the subtests when he wrote:

> The Self-Appraisal (Knowing Yourself) subtest attempts to assess the psychological facility of accurately evaluating and estimating what a person's assets and liabilities are. The Occupational Information (Knowing about Jobs) subtest measures the individual's knowledge of what workers in different occupations do. The Goal Selection (Choosing a Job) subtest quantifies the ability to match an individual with the occupation for which he/she is best fitted. The Planning (Looking Ahead) subtest presents a scrambled series of actions which must be ordered in the proper sequence to enter and progress in a given career. And, the Problem Solving (What Should They Do) subtest poses a variety of problems which arise in the course of career decision-making, the task being to select what the individual considers to be the best solution from among the alternatives (p. 5).

Crites (1972-73) reported that the preliminary findings concerning the Competence Test are favorable. He indicated that it measures:

> ... time related variables with subtests which are internally consistent, differentiating between grades, and sufficiently orthogonal for each to contribute unique variance to the battery yet highly enough interrelated to be construct valid for the Choice Competencies dimension of the career maturity model (p. 6).

RESEARCH ON THE CMI ATTITUDE SCALE

Sex and Career Attitude Maturity

The findings of a number of empirical studies suggest that the nature of the relationship between the maturation of career attitudes and certain background variables warrants further examination.

Crites (1965) reported that only a few differences existed between the sexes on the CMI Attitude Scale, and concluded that sex may not be a critical variable in the maturation of career attitudes. However, there is other evidence indicating that sex may be a crucial factor in the maturation of career attitudes. Havighurst (1965) acknowledged this possibility by recommending that the career aspects of the high school guidance program be different and girls should be exposed to the program earlier than boys. Smith and Herr (1972) found that at grades eight and ten, girls mean scores on the Attitude Scale of the CMI were significantly higher than boys' scores. McNamara (1974) found a statistically significant difference by sex in the way students at the grade twelve level responded to the Attitude Scale. Thus, it can be seen that evidence concerning the relationship between sex and scores on the CMI Attitude Scale is not definitive although several studies have found a relationship.

Socio-economic Status and Career Attitude Maturity

There is growing evidence that socio-economic background is a factor affecting career maturity (Super, 1969). Crites (1969b) reported that a number of studies have been completed using the CMI Attitude Scale with students from different economic, ethnic and racial groups. He stated that studies made with the disadvantaged, American Indians, Mexican-Americans, and Negroes showed the mean of these groups to be lower than the mean of white middle class youngsters who have a comparable level of educational attainment. Asbury (1968b) and Myers (1966) found that disadvantaged youths from the Applachian areas of Kentucky and Tennessee were on the average three to seven raw score points lower on the Attitude Scale, these differences being significant beyond the .01 level. Miller (1968) found a significant correlation ($r = .39$) between socio-economic status and Attitude Scale scores in his groups of integrated Indian youth ($N = 102$).

In contrast, however, Crites (1969b) reported that Cover (1968) and Harris (1966) found nonsignificant r's of -.13 and 0.2 respectively between socio-economic status and Attitude Scale scores for groups of high school ($N = 162$) and college ($N = 306$) students. In 1973, Hansen and Ansell reported a significant F value of 8.33, indicating differences among their three socioeconomic groups in Attitude Scale scores for a sample of adolescent boys ($N = 375$). However, the differentiation between the socio-economic

groups and Attitude Scale scores was not clear. The uncertainty concerning the differentiation was because the middle class white students achieved the highest scores in three of five grades, while the lower class white students were highest on two grades and lowest on one, and the lower class black students were lowest on four of five grades. McNamara (1974) found no consistent differences in the way high and low socio-economic levels are associated with the Attitude Scale scores. Therefore, it can be seen that there is no conclusive evidence as the the relationship between socio-economic status and CMI Attitude Scale scores.

Grade Level and Career Attitude Maturity

Crites (1965) observed that grade level is more closely related to the maturation of career attitudes than chronological age, since grade level in general is a better indication of maturity during adolescence than age level. In 1969, he reported that the accumulated descriptive statistics on the Attitude Scale from the Vocational Development Project's Data Bank indicated two major findings concerning the relationship between the maturation of career attitudes and grade level during adolescence. First, the mean score on the Attitude Scale of the CMI will vary considerably within grades, depending upon the background and circumstances of the subjects in the sample. Second, in spite of differences among samples within grades, the total means for the Attitude Scale of the CMI usually increase significantly from one grade to the next.

Crites (1965, p. 24) presented data that illustrated a progression of Attitude Scale scores across different grades except for a regression during the eleventh grade. In attempting to explain why the eleventh grade deviated from the general trend of career development, Crites assumed that the sampling was not biased. He reasoned that the eleventh grade score resulted from the students' hesitancy to commit themselves to a career goal or plan of action rather than a regression to immature career attitudes. He concluded that further research is required to answer the question.

Hansen and Ansell (1973) have also reported a regression in career attitude maturity in the eleventh grade. They found a significant F value of 11.73 indicating a significant difference in the Attitude Scale means at each grade level but no clear progression along grade level for each socio-economic group in their sample of adolescent boys (N = 375). Hansen and Ansell concurred with the explanation given by Crites for the regression in career attitude maturity for the eleventh grade and recommended further research into the question. There is evidence, then, that career attitude maturity is basically related to grade level but with some exceptions.

Curriculum and Career Attitude Maturity

Crites (1969b) has reported and summarized a number of studies dealing with the mean scores on the CMI Attitude

Scale for different curricular groups. Among the studies, three studies of vocational and nonvocational high school students found that the former had a level of career attitude maturity that was lower than the latter. Bathory (1967) compared 20 vocational education and 62 college preparatory majors, all males in the ninth grade, and obtained a difference between their Attitude Scale means of 4.23 (30.75 VS. 34.98) which was significant at the .01 level. A similar comparison of twelfth grades was not significant, possibly because of small N's (15 and 43 respectively), but the difference between the means was 3.04 in favor of the college-bound students. Dutt (1968) also found this differential between vocational and nonvocational majors in that the former did not score as high on the Attitude Scale as the latter. Holloway (1967) found the same type of differences for 119 Cooperative Vocational Education (CVE) students and 119 non-CVE students. The differences between the medians of 35.98 and 38.69 yielded a $\underline{X}^2$ of 13.45 significant at the .005 level. Harlan (1964) found career attitude differences significant at .05 level between business, technical and trade school majors with means of 41.70, 38.80 and 38.18 respectively. In a study of twelfth grade seminarian and non-seminarian students, Pable (1967) found that the seminarians had a slightly higher mean than non-seminarian students, but the differences were not statistically significant.

The results of these studies consistently show that

curricular differences on the CMI Attitude Scale within grade groupings do exist. Crites (1969b) suggested that some of these differences between curricular groups may be attributed to differences in intelligence because career attitude maturity has been moderately and positively correlated with intelligence.

Psychological Variables and Career Attitude Maturity

Crites (1973a) has reported and summarized a number of studies in which psychological variables were related to career attitude maturity. The psychological variables are of two types: intellective and nonintellective. Among the former are measures of general scholastic aptitude and achievement which, in a number of studies (Crites, 1971), correlate on the average of .35 with career attitude maturity. Crites (1973a) indicated that this amount of covariance is moderately high, and might be of practical concern. However, he pointed out that the Attitude Scale is related to variables that are unrelated to intellective ones. He stated that it might be contended that the CMI Attitude Scale is simply a poor measure of intelligence. In refuting this line of argument, he reported that the Attitude Scale correlates with such non-intellective variables as general adjustment status (Hollender and Schalon, 1965) and personality characteristics (Barlett, 1968; Schalon, 1965). He also stated that generally the more mature an adolescent is in his/her career attitudes, the better adjusted and "more

assertive, persistent, goal oriented, forceful, and independent" (Barlett, 1968, p. 107) he/she is. Furthermore, this relationship is upheld over time. Crites and Semler (1967) found that, in a seven-year follow-up of fifth graders when they were high school seniors, their earlier personal and social adjustment, as assessed by the California Test of Personality, were correlated .22 and .23 ($p < .01$), respectively, with latter career attitude maturity.

In a recent study carried out in Melville, Saskatchewan, Thompson (1975) found that there was no significant correlation between raw intelligence scores as measured by the Differential Aptitude Test and the Attitude Scale. The finding lends further support to the contention that the CMI Attitude Scale is not simply a poor measure of intelligence. It is because of this evidence and the other findings reported by Crites (1972-73), namely, that the Attitude Scale has been related to variables that are unrelated to intelligence that the researcher has decided not to obtain a measure of intelligence for the senior high school students in the present study.

RATIONALE FOR THE HYPOTHESES

The results of studies testing how the scores on the Attitude Scale of the CMI are affected by sex and socioeconomic status provide adequate support for further

investigation into these relationships. Further investigation was warranted because of diverse findings concerning the way these variables affect CMI Attitude Scale scores. Although Crites (1965) has reported that sex may not be a significant factor in the development of career attitudes, Smith and Herr (1972) and McNamara (1974) have found significant differences in the way boys and girls respond to the Attitude Scale of the CMI. Whereas Asbury (1968b), Myers (1966) and Miller (1968) have found significant differences between socio-economic status and CMI Attitude Scale scores, Cover (1968), Harris (1966) and McNamara (1974) have found nonsignificant differences. In addition, Hansen and Ansell (1973) have found that the differentiation between their socio-economic groups and Attitude Scale scores was not clear.

Findings reported by Crites (1965, 1969b) and Hansen and Ansell (1973) indicate that the relationship between the development of career attitudes in adolescent populations and grade level is also worthy of further investigation. One of the findings reported by Crites (1969b) was that the mean scores on the Attitude Scale of the CMI were different within grades from one sample to another, depending upon what the background and circumstances of the subjects were. If the means on the Attitude Scale differ within grades and samples, then it is obvious that the norms for the Attitude Scale will be different. In order to determine an individual's rate of career attitude maturity in comparison to grade mates, local grade norms must be established. The means for the Attitude

Scale reported by Crites (1969b) were obtained from samples drawn from different populations in the United States. Crites stated that these means are not meant to be representative of all populations. In order to determine if these norms are relevant for Newfoundland populations, and, in particular, high school populations, one must measure the career attitude maturity of these populations. Such studies will establish local grade norms for the Attitude Scale that are relevant for Newfoundland populations.

Once local grade norms are established, it can be determined whether the second finding reported by Crites (1969b) is applicable to Newfoundland populations. The finding was that the mean score on the Attitude Scale will usually increase from one grade to another despite differences among samples. Researchers may observe, as Crites (1965) and Hansen and Ansell (1973) observed, that career attitude maturity regressed in the eleventh grade. In order to determine if career attitude maturity progresses along different grade levels, data concerning the means on the Attitude Scale of the CMI of young people in the Newfoundland culture is required. Such studies can provide normative data concerning career attitudes at different grade levels. When such basic data are available, secured from an adequate sampling of the population, educators will find out whether the educational system as now organized requires the proper choice-making tasks of its students at proper times, or whether some changes in educational practice are required

(Super and Overstreet, 1960).

Crites (1971) has called for further empirical research on factors that influence or affect the maturity of career attitudes. Pretrofesa (1975) states that community groupings like urban and rural are related to career development. Lipsett (1962) reports that, in the United States, there is a strong tendency for urban youth to attend college in larger numbers than rural youth. In Newfoundland, The Committee on 1973 Enrollment, chaired by Dr. G.L. Parsons (1974) found that from the 1973-74 population of Grade XI students, 26.6 percent from the urban areas planned to go to university compared with 15.7 percent from the rural areas. The finding should not be interpreted as suggesting that students from the urban areas necessarily have a level of career attitude maturity which is higher than students from the rural areas but the issue may require investigation.

Super and Overstreet (1960) reported that their measures of career maturity indicated that maturity was related to rural residence. They suggested that rural boys may be more career mature than urban boys, because rural boys have work experiences on the farm, making it possible for them to see career patterns. The applicability of this finding for boys from rural areas in Newfoundland will only be determined when their career attitude maturity is assessed.

Crites (1969b) has reported a number of studies, Harlan (1964), Bathory (1967), Pable (1967) and Dutt (1968)

dealing with the CMI Attitude Scale scores for different curricular groups. The findings of these studies consistently show that curricular differences on the Attitude Scale within grade groupings do exist.

In 1976, Louis Meaney investigated the small central high school in Newfoundland and Labrador. One of the findings reported by Meaney was that the curriculum in these high schools was generally considered narrow, rigid and irrelevant in terms of meeting the needs of students. The finding has possible implications for students attending the small central high school. One such implication may be that the inadequate curriculum of the small central high school may affect the development of career attitudes of students attending these schools. The nature of this effect may be determined when mean scores on the Attitude Scale of the CMI are obtained for students in small central high schools and those students attending high schools larger than the small central high school. In attempting to investigate the effect of the curriculum in the small central high school on the maturation of career attitudes, the researcher used size of school as something of a proxy for the type of programme offered in schools, the rationale being that the programme of schools fitting into the operational definition of the "small high school" would have an inferior programme compared to the programme of the "large high school."

HYPOTHESES

The following hypotheses were formulated to test relationships in the six problem areas outlined for the study.

Hypothesis 1

There is a significant relationship between career attitude maturity and the student's sex.

Hypothesis 2

There is a significant relationship between career attitude maturity and socio-economic status of the student's father or guardian.

Hypothesis 3

There is a significant relationship between career attitude maturity and the student's grade level.

Hypothesis 4

There is a significant relationship between the career attitude maturity of students and community of residence.

Hypothesis 5

There is a significant relationship between the career attitude maturity of students and school size.

SUMMARY OF CHAPTER 2

Super (1957) has formulated a theory of career development which has five dimensions of career maturity. In 1965, John Crites illustrated these dimension in a conceptual framework diagrammed in Figure 1 (Supra, p. 18). One dimension of this model, career choice attitudes, can be measured by the CMI Attitude Scale. The body of research pertaining to this instrument supported its use and led to the hypotheses concerning the effect of sex, socio-economic status, grade level, community of residence and school size on the development of career choice attitudes. Research findings indicated that these relationships were worth investigating.

Chapter 3

INSTRUMENTATION AND METHODOLOGY

The chapter furnishes descriptions of the instruments used in the collection of the data and an outline of the methodology utilized in the study.

INSTRUMENTATION

Two instruments were used in collecting the data used in this study. The first was the Attitude Scale of the Career Maturity Inventory and the second was the Student Questionnaire. The Blishen Socio-Economic Index for Occupations in Canada was used to categorize data from the Student Questionnaire into a level of socio-economic status. Included in the Appendices is a copy of the CMI Attitude Scale, along with its scoring key.

The Career Maturity Inventory Attitude Scale

The instrument was developed and standardized by John Crites (1965). Even though it yields only one score, it aims to measure five different career choice attitudes: (a) involvement in the choice process, (b) orientation toward work, (c) independence in decision making, (d) preference for career choice factors, and (e) conceptions of the choice process. Details concerning the

tests' standardization and these five dimensions have been described and sample items included in Chapter 2.

The CMI Attitude Scale consists of fifty monotonically grade-related items stated in both the first and third person that are administered with a true-false format. Reliability coefficients derived from internal consistency estimates (Kuder-Richardson Formula 20) range from a low of .65 to a high of .84 (Crites, 1973b, p. 14). Test-retest coefficients of stability over a one-year interval were calculated for a sample of 1,648 subjects in grades 6 through 12. The mean coefficient is reported to be .71. The stability coefficient is low enough to allow for maturational variance, namely that career behavior matures with time and is high enough to provide an efficient measurement of the variable being quantified (Crites, 1973b).

Crites (1973b) has provided evidence that supports the validity of the CMI Attitude Scale. The evidence was indicative of three kinds of validity; content, criterion and construct. Documentation for content validity came from two sources -- one logical and the other empirical. The way the items were selected furnishes proof of content validity. As outlined in Chapter II, subject matter for the items was collected from clients in career counselling and studies of career choice. These statements were edited so that they were realistic and yet "consistent with the theoretical definitions of the variables in the model of career maturity" (Crites, 1973b, p. 8). The empirical

evidence was supplied by a study carried out by Hall (1962). Hall compared the amount of agreement between the empirical scoring key for the Attitude Scale, and a "rationally" derived one, as determined by ten expert judges. The judges agreed with thirty-seven items out of the fifty in the Attitude Scale. The percentage of agreement then was 74.0 percent. Crites (1973b) stated that this percentage appeared to give the Attitude Scale acceptable content validity.

The American Psychological Association (1966) states that criterion-related validity is "demonstrated by comparing the test scores with one or more external variables considered to provide a direct measure of the characteristics or behavior in question" (p. 13). Crites (1973b) has reported and summarized a number of studies where the Attitude Scale was compared to criterion variables. Among the studies, Careh (1965) compared decisiveness in career choice to the Attitude Scale in a group of 346 male college students and reported a biserial r of .25. Cooter (1966) found a r of .38 ($P < .01$), when he compared scores for the CMI Attitude Scale with scores for Gibbons and Lohnes' "Readiness for Vocational Planning." On the other hand, Wilstack (1967) reported non-significant r's between the Attitude Scale and Super's "Indices for Vocational Planning." Although these studies had sample sizes smaller than the desired, Crites noted that these studies "generally indicate that the Attitude Scale has demonstrated criterion-related validity" (p. 16).

It would appear that the most pertinent data supporting the construct validity of the Attitude Scale are those on (1) response bias, (2) correlations with other variables, and (3) experimental manipulations of counseling and didactic experiences. Of the studies that Crites (1973b) has summarized, Careh (1965) concluded that response set, as defined by the Marlowe-Crowne Scale had a negligible effect upon Attitude Scale scores. Sharf (1968) came up with a similar conclusion in an experimental investigation of response set in the Attitude Scale. The same conclusion seems to have also been reached by Shirts (1968) in a correlational study of response style. Although Shirts reported borderline results for fifth graders, Crites (1973b) stated that the "evidence from his study indicates non-significant effects of response style upon the Attitude Scale" (p. 17). A similar conclusion was also reached by Crites (1971b) in an experimental analysis of response style.

The construct validity of the Attitude Scale is substantiated by its correlations with variables of interest. Crites (1971) grouped these variables into three categories: background or status variables, psychological variables, and what may be termed "outcome variables." The studies where the Attitude Scale was correlated with psychological variables and background or status variables have been described in Chapter 2.

Crites (1972-73, 1973b) has reviewed a number of studies where the Attitude Scale has been correlated with a

class of variables called "outcome variables." Crites (1973b) stated that these variables include: (1) grade point average (GPA), (2) persistence in college, (3) success in vocational training, and (4) vocational success. Crites (1972-73) reported that, in one study or another, it has been shown that all of these variables are correlates of the Attitude Scale.

The final body of research demonstrating the construct validity of the Attitude Scale consists of studies that have attempted to increase the career attitude maturity of subjects through some type of counseling or didactic exposure. Crites (1973b) reported that Asbury (1967), Bovee (1967), and Gilliland (1966) have found that counselling can affect Attitude Scale scores in a positive way. However, he noted that it is not known why counselling makes this positive effect happen. Furthermore, Crites also reported that "gains" were obtained on the Attitude Scale due to some didactic interventions. However, significant gains on the Attitude Scale were only obtained by Goodson (1969) through exposing three experimental groups to an eight week orientation course.

After reviewing the accumulated research supporting the construct validity of the Attitude Scale, Crites (1973b) concludes that:

> ... 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 (p. 21).

Rationale for the Selection of the CMI Attitude Scale

The Attitude Scale of the CMI is applicable for studying career attitude maturity during the school years since it was developed around career choice attitudes. Crites (1965, p. 132) stated that the CMI Attitude Scale is designed to define the "conative aspects of (career) maturity which theoretically appear to be most related to the mediation of (career) choice behavior during adolescence." Therefore, the person who scores high on the Attitude Scale, in all probability, will have the career choice attitudes necessary for making realistic and independent educational decisions.

However, various researchers have pointed out some of the limitations of the Attitude Scale of the CMI. Cunningham and Westbrook (1970) state that the CMI Attitude Scale measures only one aspect of career maturity. Super's criticism of the Attitude Scale is that career maturity on this inventory is learning to say "no" and this increasingly consistent negative attitude hardly satisfies a logical or psychological definition of maturity" (Super, 1969, p. 12).

However, not all the researchers agree. Holland (1969, p. 16) stated:

> I disagree completely that the Crites Vocational Development Inventory Scale has led to a 'blind alley.' To the contrary, the VDI provides the only simple and practical measure of what Super calls '(career) maturity'. It is a useful, reliable, and practical beginning for the study of (career) maturity.[1]

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[1] At the time Holland wrote this article, the Career Maturity Inventory was called the Vocational Development Inventory.

Since the present study is concerned with the maturation of career attitudes, the researcher has decided to use the CMI Attitude Scale instead of both parts of the Career Maturity Inventory. Although the CMI Competence Test is a reliable and valid measure of what Crites calls "Career Choice Competencies", it was only in the Spring of 1972 that it was standardized. Furthermore, it contains a lot of examples of American Content which may not be familiar to certain Newfoundland senior high school populations; however, the CMI Attitude Scale does not contain this type of content. It is for these reasons that the researcher has delimited this study to using the CMI Attitude Scale.

The Student Questionnaire

The Student Questionnaire consisted of nine items designed to gather information regarding the subject's grade level, sex, community of residence, socio-economic background, school size and the type of career related activities participated in by the subject. Although it was not the intended purpose of the study to gather information regarding career related activities, such information was obtained because it might help administrators in their planning for career guidance programs. In order to help with this planning, it was reasoned that it would be beneficial to find out what provisions for career guidance had already been made for the high school population being investigated. Appended to the Student Questionnaire was a response sheet for the CMI

Attitude Scale. The answer sheet was developed by the researcher for this study to facilitate key punching of responses.

The Blishen Socio-Economic Index for Occupations

The Blishen (1971) scale used to determine the socio-economic status of the subjects in the study was a modified version of Blishen's 1958 and 1967 scales. The revised scale is based on 1971 Canadian census data and, like the 1967 scale, uses income level, educational status and Pineo-Porter prestige scores to rank occupations.

In outlining the construction of the 1971 scale, Blishen and McRoberts (1976) stated that the income level variable was expressed as the percentage of males who worked in an occupation and whose income was greater than or equal to $6,500. Depending upon where an individual received his education, the education variable was expressed as the percentage of males who worked in an occupation and had attended at least Grade 11 or 12. Besides the income and eduation variables, these writers made a point of noting that the new scale used a prestige variable by assigning approximations of the Pineo-Porter (1966) prestige scores for 85 occupations. A regression equation was then constructed using as the dependent variable the Pineo-Porter scores for the 85 occupations which corresponded to the 1971 census list, and using as the independent variables the corresponding income level and educational level of

these occupations. The regression weights obtained were then applied to approximately 480 occupations and resulted in a socio-economic index score for each.

Blishen and McRoberts (1976) stated that the final step in the construction of the 1971 scale was the determination of class intervals. They noted that the revised scale uses the same class intervals put forth by Blishen (1967), which was founded on the use of the tens digit of the individual socio-economic index score, for each occupation. In 1967, he reported that this method resulted in the following six classes:

Class	Socio-Economic Index
1	70+
2	60-69
3	50-59
4	40-49
5	30-39
6	below 30

(Blishen, 1967, p. 112)

METHODOLOGY

The Design

The primary purpose of the study was to examine and ascertain the career attitude maturity of senior high school students in the Humber-St. Barbe and Port Au Port Roman Catholic School Districts. An ancilliary purpose of the

study was to determine whether there was a significant relationship between career attitude maturity among senior high school students and sex, socio-economic status, grade level, community of residence and school size. In keeping with the stated purpose, the design that was developed contained five independent variables and one dependent variable. The dependent variable was career attitude maturity while the five independent variables were sex, socio-economic status, grade level, community of residence, and school size. The population for the study was senior high school students who were randomly selected and placed in a modified version of the proportional stratified sample.

The Population

The population for the study consisted of two thousand three hundred and twenty senior high school students enrolled in nine central high schools, one regional high school and one all-grade school in the Humber-St. Barbe and Port au Port Roman Catholic School Districts. Seven of these schools are operated by the Humber-St. Barbe Roman Catholic School Board and four by the Port au Port Roman Catholic School Board.

A sample was drawn from the population of students in the stated districts for the following reasons:

1. The population was accessible to the researcher;
2. The population included persons from both the male and female sex;

3. The population was representative of a broad range of socio-economic levels;
4. The population included persons from both the rural and urban areas;
5. The population included persons enrolled in different size high schools;
6. The population included persons who soon would be entering the world of work.

The Sample

Alphabetical listings of the grades nine, ten, and eleven enrollments were obtained from each of the eleven high schools and from these lists a ten percent proportional stratified sample was selected through the use of a table of random numbers.

The proposed sample for the study was 340 senior high school students. The sample was comprised of eleven subsamples randomly selected from the eleven high schools mentioned in the previous section. Each of these samples was proportional to the strata, namely the number of students in grades nine, ten, and eleven in the high school from which it was drawn.

The study included only those subjects who respond to every item on the Attitude Scale of the Career Maturity Inventory. Since two students did not respond to every item on the Attitude Scale and another four were absent on the day the Attitude Scale was administered in the schools, the actual sample size was 334 senior high school students.

The sample is more fully described in the next chapter.

Collection of Data

Permission to conduct the research was sought from the two school boards and principals of each of the eleven high schools.

The CMI Attitude Scale and the Student Questionnaire were administered by the researcher in June, 1978. The group administration approach was used in the administration of these instruments to each 'within school' group of students. At each session the purpose of the study was described and directions for completing the Student Questionnaire and the Attitude Scale were read by the researcher. In addition, it was pointed out that the CMI was more of a survey instrument than an actual test. The total administration time for each testing session was approximately thirty minutes.

Treatment of the Data

The hypotheses for the study have been previously stated. Prerequisite to the testing of these hypotheses was the determination of each subject's socio-economic status, community of residence, and the size of the high school which he or she attended. Furthermore, it was necessary to compute a career attitude maturity score for each subject. The variable of socio-economic status was computed manually by the researcher through the use of the Blishen Socio-Economic Index of Occupations. This measure

was used to categorize the occupation of the subject's father or guardian into one of six classes. The variables of school size and community of residence were also computed manually by the researcher and were classified as stated in the early definitions. The computation of the subject's career attitude maturity score was obtained by the use of an appropriate computer program.

The statistical treatments utilized in testing the five hypotheses included use of computer programs to perform analysis of variance and the Scheffé test. A one-way analysis of variance was used to detect and examine differences in the mean career attitude maturity scores among students when classified by sex, socio-economic status, grade level, community of residence, and school size. Any significant differences among the means revealed by the analysis of variance, where it was not known which differences had contributed to the significance, were further explored through the use of the Scheffé test. The procedure was applied to test all the differences between the means so that the source of the significance could be identified. The significance level arbitrarily set for rejecting or accepting an hypothesis was .05 for the analysis of variance and .10 for the Scheffé test. A more complete description of the particular statistical treatments applied in the testing of each hypothesis will be outlined in Chapter 5.

SUMMARY OF CHAPTER 3

Two instruments were used to collect the data used in this study. The CMI Attitude Scale was used to measure the career attitude maturity of the subjects. The Student Questionnaire provided information concerning the grade level, sex, community of residence, socio-economic background, school size and the type of career related activities participated in by the respondent. In addition, the Blishen Socio-Economic Index was used to determine each subject's socio-economic status. All of the data concerning the 334 senior high school students selected from eleven high schools were collected by the researcher. Besides estimating manually the variables community of residence, school size, socio-economic status, use was made of a computer program to compute the career attitude maturity scores of the sample of senior high school students. The statistical treatments of the data included analysis of variance and the Scheffé test.

Chapter 4

DESCRIPTION OF THE SAMPLE

The purpose of the chapter is to present a more detailed description of the sample used in this study. Essentially, this sample included the 334 senior high school students who responded to the Attitude Scale of the CMI and the Student Questionnaire. The descriptions concern sample design, method of selection, and such characteristics as sex, grade level, community of residence, school size, socio-economic status and the career related activities participated in by the subjects. These data were obtained from the CMI Attitude Scale and the Student Questionnaire.

SAMPLE DESIGN

The sample sought for the study was one that would be representative of the population being investigated; this population being two thousand, three hundred and twenty senior high school students enrolled in eleven high schools in the Humber-St. Barbe and Port au Port Roman Catholic School Districts. The reasons why this particular population was selected have been outlined in the previous chapter.

In attempting to obtain a sample that was representative of the population under investigation, a ten percent random sample was considered. However, it was reasoned

that, since the population was divided into strata, namely senior high school students in grades nine, ten, and eleven, a proportional stratified sample would be the most appropriate sample design. It was also reasoned that, since the strata of the population was not amenable to precise definition, the total sample could not be a true proportional stratified sample. Instead, the sample design was one which was made up of eleven sub-samples, with each one being proportional to the subpopulation from which each was drawn. Furthermore, it was determined that a ten percent sample size was not appropriate for each of the eleven subpopulations. This was because, when this sample size was withdrawn from certain subpopulations, a subsample with an inadequate cell size would be obtained. In order to eliminate this possible deficiency, the following guidelines were developed:

1. If a school had a senior high school population greater than 250 pupils, a ten percent proportional stratified sample was drawn, namely, that the proportions in the various strata in the sample were the same as those proportions in the strata of the school's senior high school population.
2. If a school had a senior high school population that was fewer than 250 pupils, a proportional stratified sample was drawn until a total sample size of 25 subjects was obtained.
3. If a school had a senior high school population that

was fewer than 40 pupils, all of the pupils were put in the sample.

METHOD OF SELECTION

Keeping in mind the guidelines developed for the selection of samples, a sample was randomly selected from each 'within school' group of senior high school students, using class lists and a table of random numbers. A description of the sample is presented in the next section.

DESCRIPTION OF THE SAMPLE

There were 340 senior high school students who participated in this study. However, only 334 senior high school students responded to every item on the Attitude Scale of the Career Maturity Inventory. Therefore, this description is concerned with 334 senior high school students.

Table 3 shows the distribution by sex of the senior high school students who responded to the Student Questionnaire and the CMI Attitude Scale. The sample included 45.2 percent who were boys and 54.8 percent who were girls.

The distribution by grade level of the senior high school students is presented in Table 4. The table indicates that the largest number of senior high school students 38.0 percent were at the grade nine level, with 33.0 percent

Table 3

Distribution of Senior High School Students by Sex

Sex	Number of Students	Percent
Male	151	45.2
Female	183	54.8
Total	334	100.0

Table 4

Distribution of Senior High School Students by Grade Level

Grade Level	Number of Students	Percent
9	127	38.0
10	110	33.0
11	97	29.0
Total	334	100.0

and 29.0 percent at the grade ten and eleven levels respectively.

The data of Table 5 indicated that the percentages of students from the urban areas and those from the rural areas were almost equal. The 'urban areas' were those communities with a population greater than or equal to 2,500, and for this study included Corner Brook, Stephenville, and Deer Lake. Subjects living in communities outside of these areas with a population of fewer than 2,500 were designated as 'rural.' In all, 50.3 percent of the participants were from the urban areas and 49.7 percent were from the rural areas.

Over 50 percent of the subjects in the sample were enrolled in high schools which had a school size of fewer than 250 senior high school students. Table 6 shows that over 50 percent of the subjects were from a 'small high school'. A 'small high school' was earlier defined as a high school with an enrollment of ninth, tenth, and eleventh grade students that is fewer than 250 pupils.

Table 7 presents the distribution of senior high school students by socio-economic status. In the sample, over 85 percent of the subjects were in the three lower socio-economic classes as determined by the Blishen Socio-Economic Index for Occupations, that is, occupations with an index of 40 or lower.

Tables 8 through 11 show the variety of career related

Table 5

Distribution of Senior High School Students by Community of Residence

Residence	Number of Students	Percent
Urban	168	50.3
Rural	166	49.7
Total	334	100.0

Table 6

Distribution of Senior High School Students by School Size

School Size by Enrollment	Number of Students	Percent
0-49	30	8.9
50-99	50	14.9
100-149	74	22.2
150-199	25	7.5
200-249	25	7.5
250-299	0	0.0
300-349	27	8.0
350-399	0	0.0
400-449	0	0.0
450-499	44	13.2
500-549	0	0.0
550-599	0	0.0
600-649	59	17.8
Total	334	100.0

Table 7

Distribution of Senior High School Students by Socio-Economic Status

Class	Socio-Economic Index	Number of Students	Percent
1	70+	3	0.9
2	60-69	9	2.7
3	50-59	32	9.7
4	40-49	59	17.8
5	30-39	79	23.9
6	below 30	149	45.0
	Total	331[2]	100.0

[2]An accurate measure of socio-economic status was not obtained for three subjects.

Table 8

Distribution of Senior High School Students Who Had Participated in a Pre-Vocational Program

Response	Number of Students	Percent
Yes	0	0
No	334	100.0
Total	334	100.0

Table 9

Distribution of Senior High School Students Who Had Participated in a Career Day

Response	Number of Students	Percent
Yes	220	65.9
No	114	34.1
Total	334	100.0

Table 10

Distribution of Senior High School Students Who Had Participated in a Career Guidance Class

Response	Number of Students	Percent
Yes	17	5.1
No	317	94.9
Total	334	100.0

Table 11

Distribution of Senior High School Students Who Participated in Other Career Related Activities

Response	Number of Students	Percent
Yes	1	99.7
No	333	0.3
Total	334	100.0

activities participated in by the senior high students in the sample. The information also gives an indication of the provisions made already for career guidance for the population being investigated. An examination of Tables 8 and 9 reveals that over 65 percent of the participants in the study had taken part in a career day, while none had participated in a pre-vocational program. Table 10 indicates that 5.1 percent of the senior high school students had participated in a career guidance class. Finally, Table 11 shows that less than one percent of the students had taken part in any other career related activities.

SUMMARY OF CHAPTER 4

The majority of the senior high school students comprising the sample were females, from the urban areas, enrolled in a 'small high school', from the lower socio-economic classes, and had participated in a career day.

Chapter 5

ANALYSIS OF DATA

The chapter presents an analysis of the data used to describe the career attitude maturity of students in this study and to test the five hypotheses proposed for the study. The first section is concerned with comparing the Attitude Scale mean scores and the cumulative percentage ogives of CMI Attitude Scale scores for students in the sample to the mean scores and cumulative percentage ogives for the standardization sample. The second section reports on the testing of the five hypotheses and includes the procedures used in testing the hypotheses and the outcome of each testing. The final section presents a summary of the analyses described in this chapter. A discussion of the results is presented in the next chapter.

DESCRIPTIVE STATISTICS

The study was concerned with assessing the career attitude maturity of senior high school students. An assessment was made of this maturity by the use of the Attitude Scale of the Career Maturity Inventory. In addition, an attempt was made to establish local grade norms for this instrument for senior high school students in one area of the Province.

In his discussion of the norms for the Attitude Scale, Crites (1973a, p. 13) suggested that the best reference group for an individual is the one that he best resembles both demographically and educationally. It is for this reason that local grade norms should be established.

A comparison of the Attitude Scale mean scores for the students in the study sample and those in the standardization sample are presented in Table 12. An examination of these data indicated that the mean scores for the study sample were considerably lower than the mean scores of the standardization sample. Furthermore, these mean scores were comparable to the mean scores of disadvantaged groups in other studies (Table 12) as reported by Crites (1973a). For example, Myers (1966) found that his group of 48 tenth and eleventh grade economically deprived youth from rural southern Appalachia to have career attitude maturity scores of 34.06 and 35.23 respectively. These scores were similar to the seventh and eighth grade norms of the Cedar Rapids sample rather than the tenth and eleventh grade norms. In 1967, Asbury reported a mean score of 28.90 for his sample of rural, disadvantaged eighth grade boys from Appalachian Kentucky (N = 63). Finally, Miller (1968) found that his group of 101 ninth and eleventh grade Indian youth from North Dakota had mean scores of 28.83 and 33.20 respectively. It is worth noting that Crites (1973a) accounted for the depressed performance of the disadvantaged and minority groups as possibly due to "socio-economic circumstances and lack of cultural stimulation"

Table 12

Attitude Scale Mean Scores of the Study Sample and Special Groups Compared with Standardization Sample

Sample	Mean for Grade 8	9	10	11
Standardization Sample	35.97	36.50	37.81	38.16
Study Sample		32.51	33.82	34.46
Disadvantaged Kentucky	28.90			
Tennessee			34.06	35.23
American Indians North Dakota		28.83		33.20
Mexican-Americans New Mexico		30.23		
Negroes Pennsylvania		32.39		

(Crites, 1973a, p. 6)

(p. 6).

The mean scores for the study are also its norms. The norms at the grades nine, ten, and eleven level are 32.51, 33.82, and 34.46 respectively.

The cumulative percentage ogives of total CMI Attitude Scale scores for students in the sample and those for the standardization sample are presented in Figures 2, 3 and 4. The ogive or percentile curve is a smooth curve that is used to represent a distribution of test scores graphically. The points that determine the percentile curve are located on the imaginary vertical lines at the upper limit of each class interval (Glass and Stanley, 1970). In Figures 2 through 4, the class intervals are the total career maturity scores. As a supplement to the data in Table 12, the cummulative percentage ogives in Figures 2 through 4 give a picture of how mature the students in the study sample are with regards to career attitudes. An examination of these ogives indicates that the ogives of the subjects in the sample, compared more closely with the ogives for the standardization at the grade seven level than for any other grade.

TESTING THE HYPOTHESES

The study examined the relationship between scores on the Attitude Scale of the Career Maturity Inventory and background variables of sex, socio-economic status, grade

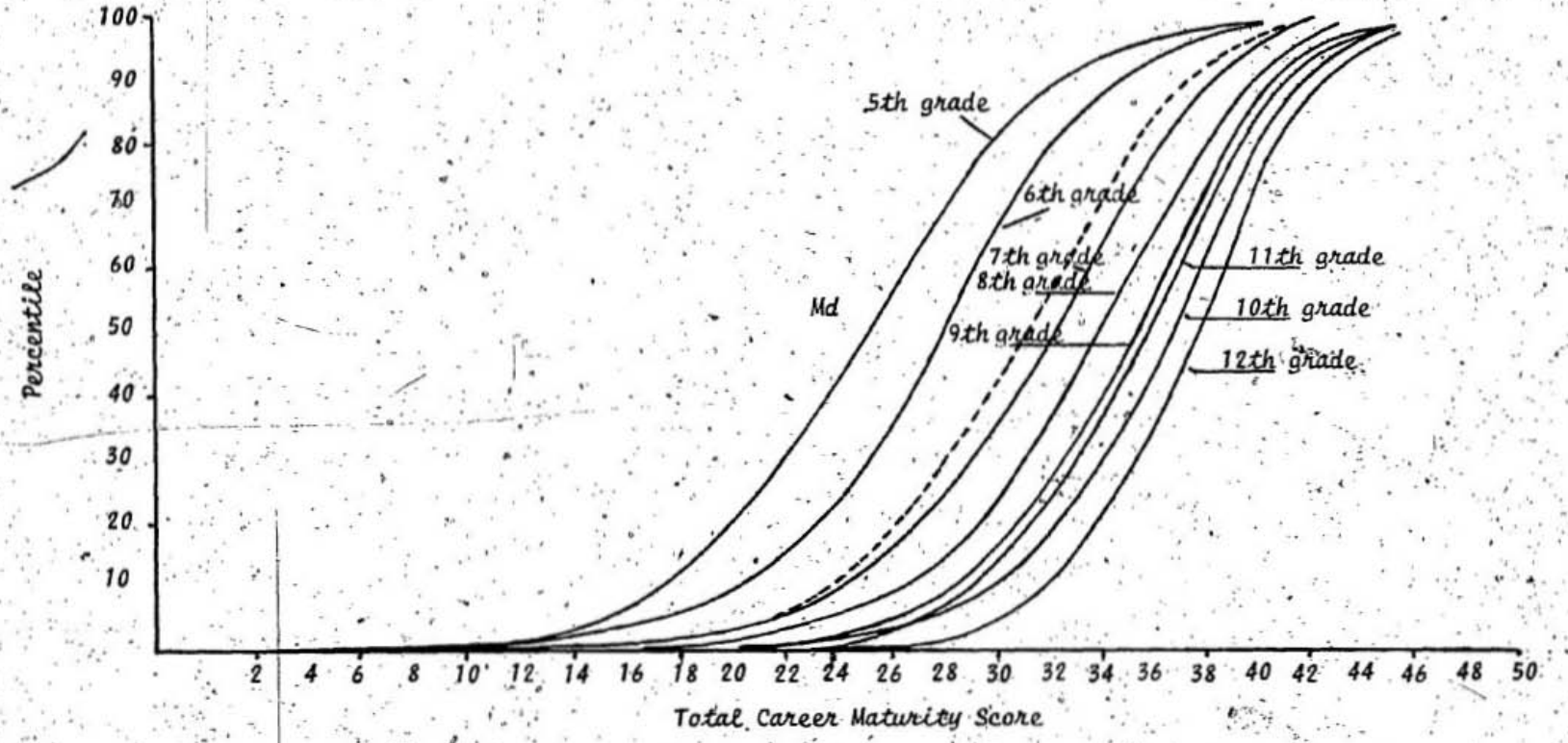

Figure 2

The Cummulative Percentage Ogive of Grade IX Students in the Study Sample Compared with the Ogives for the Standardization Sample

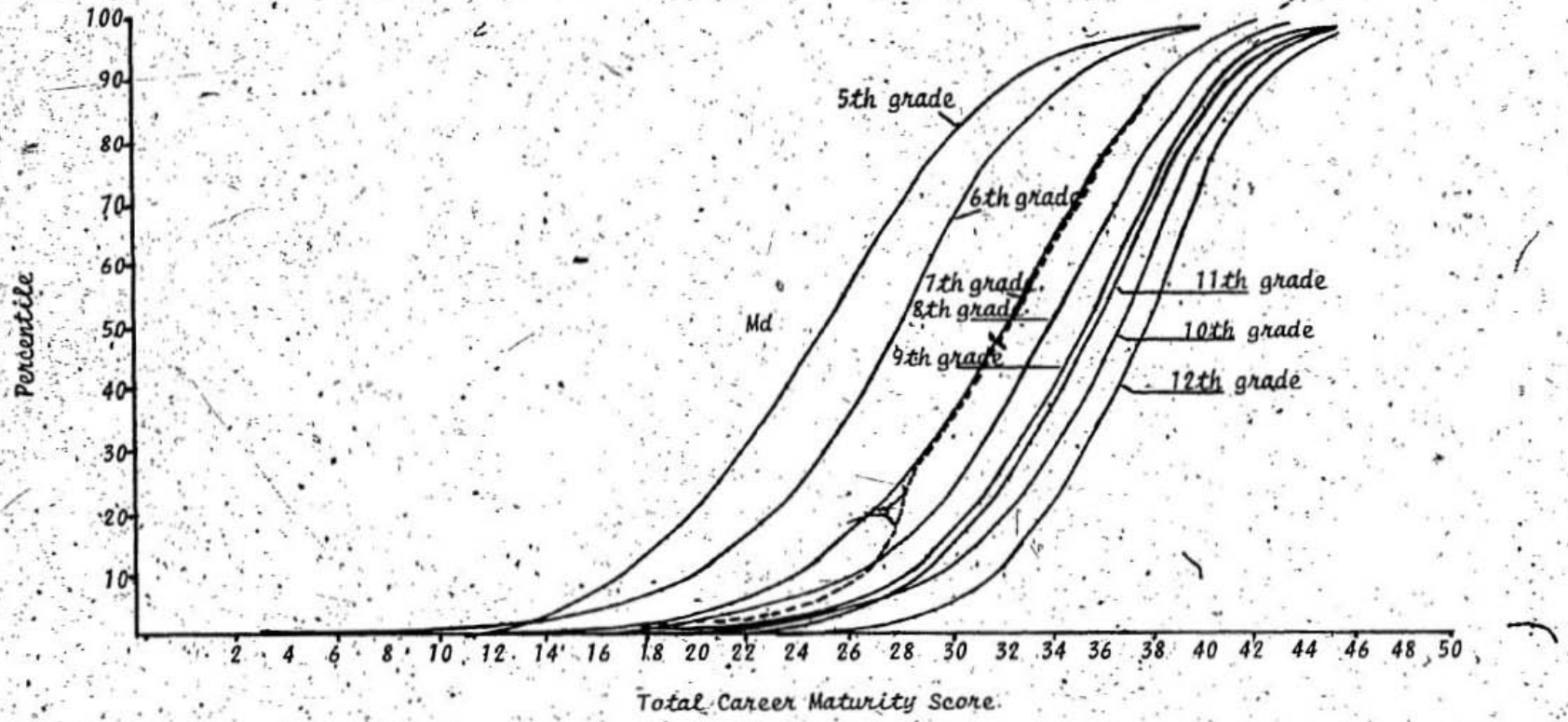

Figure 3

The Cummulative Percentage Ogive of Grade X Students in the Study Sample Compared with the Ogives for the Standardization Sample

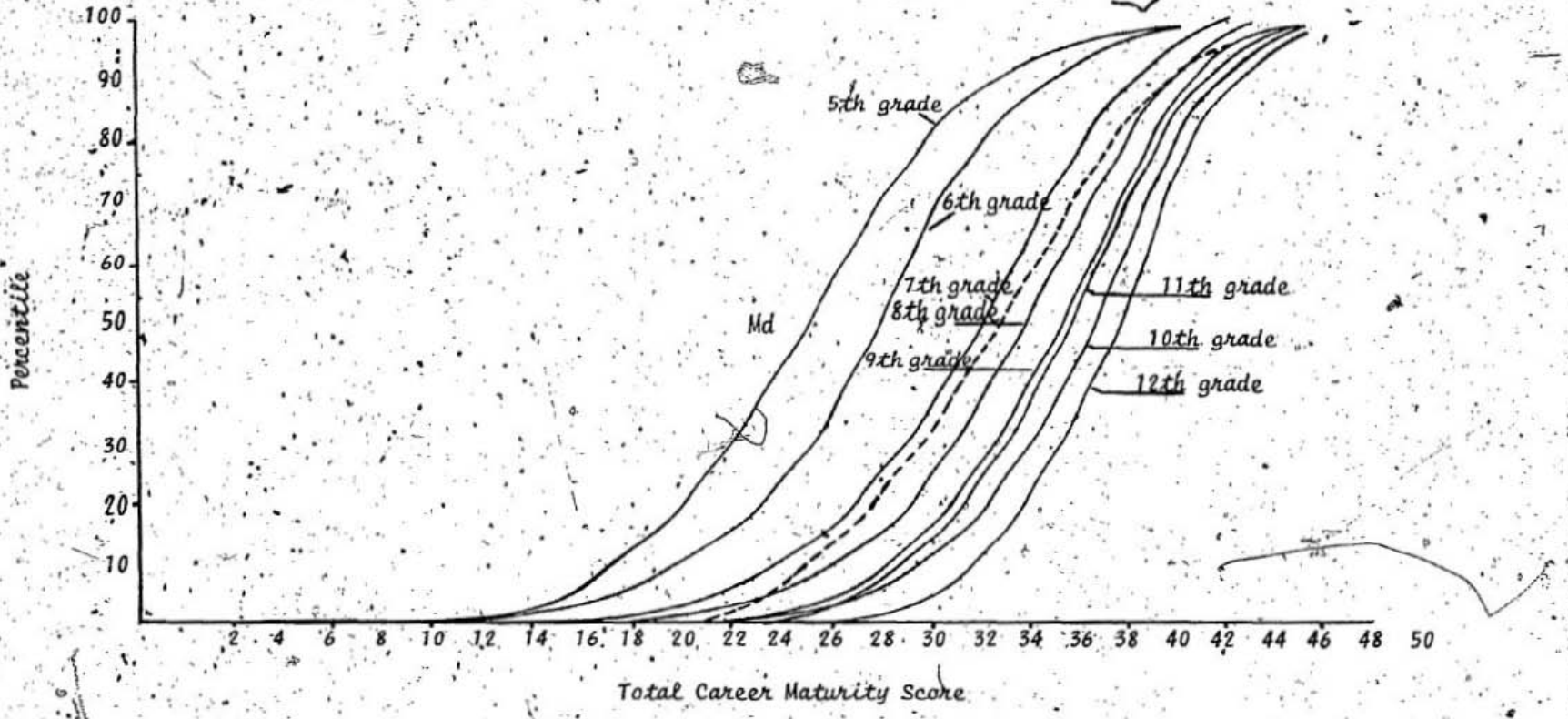

Figure 4

The Cummulative Percentage Ogive of Grade XI Students in the Study Sample Compared with the Ogives for the Standardization Sample

level, community of residence, and school size.

The one-way analysis of variance was applied to the Attitude Scale scores. It was employed to examine differences which might exist among various groups of students by sex, socio-economic status, grade level, community of residence, and school size. Furthermore, the one-way analysis of variance was used because it is an efficient test of the significance of the difference between two or more groups. It proceeds on the assumption that the samples have been selected independently and at random (Glass and Stanley, 1970, p. 340). The relationships of career attitude maturity and the variables of grade level and school size were further explored through the use of the Scheffé test. The Scheffé procedure was used because it is a general method that can be used for all comparisons of means after an analysis of variance where significance is found (Kerlinger, 1973). The significance level arbitrarily set for rejecting or accepting an hypothesis was .05 for the analysis of variance and .10 for the Scheffé procedure. The .10 level of significance was employed in using the Scheffé test because this procedure is very rigorous and leads to fewer significant results. In using the Scheffé method, since it is more rigorous than other multiple comparison methods, it is recommended that the .10 level of significance be employed instead of the .05 level (Fergenson, 1976). The sample used in this study was a modified version of the random sample, viz., the proportional stratified sample.

Hypothesis Number One

The first hypothesis stated that there is a significant relationship between career attitude maturity and the student's sex. To determine if the career attitude maturity scores for the 334 students were different with sex as a predictor, a one-way analysis of variance was performed. Table 13 shows that the difference in the means is not large and the F ratio is not significant at the .05 level. Therefore, this hypothesis is rejected and the null hypothesis is accepted.

Hypothesis Number Two

The second hypothesis stated that there is a significant relationship between career attitude maturity and the socio-economic status of the student's father or guardian. A one-way analysis of variance of the career attitude maturity scores of 331 students was performed using socio-economic status as a predictor. The scores of only 331 students were used in this testing because an accurate measure of socio-economic status could not be obtained for three students. The evidence from Table 14 shows that there is a significant difference among the various groups with an F-ratio of 2.98 which has a probability level of less than .01. In attempting to find the source of this significant difference, the Scheffé test was not used because an examination of the differences among the means in Table 14 seemed to indicate that it was necessary to group the six classes of socio-economic status into high

Table 13

Analysis of Variance of Career Attitude Maturity Scores of High School Students Classified by Sex (N = 334)

Sex	N	Means	MS_b	MS_w	F	P
Male	151	33.39	3.67	25.14	0.146	>.05
Female	183	33.60				

and low socio-economic groups. In this testing, it was decided to use the one-way analysis of variance since it is an efficient test of the significance of the difference between two or more groups (Glass and Stanley, 1970, p. 340).

Subsequently, as an extension of the hypothesis testing already described, the six classes in Table 14 were grouped into high and low socio-economic groups. Classes 1 to 3 were classified as high, while classes 4 to 6 were classified as low. This time, with high and low socio-economic status as a predictor, a one-way analysis of variance of the career attitude maturity scores for the 331 students was completed. Table 15 shows that there is a large difference in career attitude maturity scores between high (35.38) and low (33.20) socio-economic levels. The F-ratio is significant beyond the .01 level. Therefore, on the basis of the evidence presented, there is a justification for rejecting the null hypothesis and accepting the hypothesis that there is a significant relationship between career attitude maturity and socio-economic status.

Hypothesis Number Three

The hypothesis stated that there is a significant relationship between career attitude maturity and the student's grade level. Using grade level as a predictor, a one-way analysis of variance of the career attitude maturity scores of the 334 students was carried out. The information in Table 16 indicates that there is a significant difference

Table 14

Analysis of Variance of Career Attitude Maturity Scores of High School Students Classified by Socio-Economic Status (N = 331)[3]

Socio-Economic Class	N	Means	MS_b	MS_w	F	P
1	3	36.66	72.27	24.21	2.98	<.01
2	9	34.66				
3	32	35.46				
4	59	33.33				
5	79	34.56				
6	149	32.43				

[3]The sample size was 331 instead of 334 because an accurate measure of socio-economic status was not obtained for three subjects.

Table 15

Analysis of Variance of Career Attitude Maturity Scores of High School Students Classified by High and Low Socio-Economic Status (N = 331)[4]

Socio-Economic Class	N	Means	MS_b	MS_w	F	P
High	44	35.38	180.71	24.77	7.29	<.01
Low	287	33.20				

[4]The sample size was 331 instead of 334 because an accurate measure of socio-economic status was not obtained for three subjects.

Table 16

Analysis of Variance of Career Attitude Maturity Scores of High School Students Classified by Grade Level
(N = 334)

Grade Level	N	Means	MS_b	MS_w	F	P
9	127	32.51	112.99	24.54	4.60	.001
10	110	33.82				
11	97	34.46				

among the three grade levels with an F-ratio of 4.60 which is at the .001 level of probability. The table also shows that average career attitude maturity increases as grade level increases. Although there appears to be a significant relationship between career attitude maturity and grade level, the source of the significance had not been uncovered. For this reason, and for exploratory and interpretative purposes, it was decided to use some type of multiple range test. The Scheffé test was selected because it is a general method that can be applied to all comparisons of means after an analysis of variance where significance is found (Kerlinger, 1973).

The Scheffé procedure was used to compare the mean CMI Attitude Scale scores for grades nine, ten, and eleven at the .10 level of significance. The result of the testing indicated that the grade nine group mean (32.51) was significantly different from the grade eleven group mean (34.45). The grade ten group mean (33.82), on the other hand, was not significantly different from either the grade nine or grade eleven group mean. Therefore, on the basis of the evidence presented, there is a justification for rejecting the null hypothesis and accepting the hypothesis that there is a significant relationship between career attitude maturity and the student's grade level, although the significant difference is not at each grade interval.

Hypothesis Number Four

The fourth hypothesis stated that there is a significant relationship between career attitude maturity of

students and community of residence. To determine if the career attitude maturity scores for the total study sample were different for the two classifications of community of residence, a one-way analysis of variance was used. Table 17 shows that urban students have a higher mean career attitude maturity score than rural students. It also presents evidence indicating that there is a significant difference among the two groups with an F-ratio of 7.12 which was beyond the .01 probability level. Therefore, on the basis of the evidence presented, the null hypothesis is rejected, while the hypothesis stating that there is a significant relationship between career attitude maturity and the student's community of residence is accepted.

Hypothesis Number Five

The hypothesis stated that there is a significant relationship between career attitude maturity of students and school size. A one-way analysis of variance of the career attitude maturity scores for the total study sample was performed using school size as a predictor. Table 18 shows information indicating that there is a significant difference among the various groups with an F-ratio of 3.53 which was significant at the .001 level of probability.

Since the source of significance had not been identified in the relationship concerning career attitude maturity and school size, and for exploratory and interpretive purposes, it was decided to once again use the

Table 17

Analysis of Variance of Career Attitude Maturity Scores of High School Students Classified by Community of Residence (N = 334)

Community of Residence	N	Means	MS_b	MS_w	F	P
Urban	168	34.23	175.36	24.62	7.12	<.01
Rural	166	32.78				

Table 18

Analysis of Variance of Career Attitude Maturity Scores of High School Students Classified by School Size (N = 334)

School Size by Enrollment	Number of Schools with this Enrollment	N	Means	MS_b	MS_w	F	P
0-50	1	30	34.50	84.23	23.80	3.53	.001
51-100	2	50	31.70				
101-150	3	74	32.71				
151-200	1	25	34.92				
201-250	1	25	35.64				
301-350	1	27	35.03				
451-500	1	44	34.68				
601-650	1	59	32.47				

Table 19

Analysis of Variance of Career Attitude Maturity Scores of High School Students Classified by Four Categories of School Size (N = 334)

School Size by Enrollment	Number of Schools with this Enrollment	N	Means	MS_b	MS_w	F	P
Category 1 (0-50)	1	30	34.50	181.31	26.65	7.66	.001
Category 2 (51-150)	5	124	32.30				
Category 3 (151-600)	4	121	35.00				
Category 4 (601-650)	1	54	32.47				

Scheffé test. In attempting to test the hypothesis under investigation, the eight group means that were presented in Table 18 were compared using the Scheffé procedure at the .10 level. The results of this analysis indicated that no two groups were significantly different.

As an extension of the testing already described, the eleven high schools used in this study were grouped into four categories of school size. These four classifications of school size had ranges in enrollment which were 0.50, 51-150, 151-600 and 601-650 respectively. The grouping was used because the results of Table 18 appeared to indicate that the source of the significant difference in career attitude maturity scores could possibly be among these four categories. A one-way analysis of variance was used to determine if the career attitude maturity scores for the 334 students were different for the four classifications of school size. The essential results of this analysis are presented in Table 19. The difference in the means among the four categories is significant with an F-ratio of 7.66 which has a probability level of .001. Therefore, on the basis of this analysis, it would appear that there was a significant relationship between career attitude maturity and school size. However, the groups that contributed to this significant relationship had not been uncovered. Therefore, the relationship still needed further analysis before it could be accepted.

As a further attempt to find the source of the

significance in the career attitude maturity and school size relationship, the four group means that were presented in Table 19 were compared using the Scheffé procedure at the .10 level. The outcome of this analysis was that the mean of Category 3 (35.00) was significantly different from the mean of Category 4 (32.47). However, the mean of Category 1 (34.50) was not significantly different from the means of Categories 2, 3, or 4. These results indicate that the source of the significance in the career attitude maturity and school size relationship was among certain categories of school size.

In summary, hypothesis number five was evaluated through the use of analysis of variance and the Scheffé test. In the two instances where analysis of variance was used, results indicated that significant differences existed among the means of the eight classifications of school size and among those of the four reclassifications of school size. When the Scheffé test was employed to find the source of these significant differences, it disclosed that among the eight classifications of school size no two groups were significantly different. However, among the four reclassifications of school size, it revealed that the mean of Category 3 (35.00) was significantly different from the mean of Category 2 (32.30) and the mean of Category 4 (32.47), but the mean of Category 1 (34.50) was not significantly different from the means of Categories 2, 3, or 4. Therefore, on the basis of the evidence presented,

the hypothesis stating that there is a significant relationship between career attitude maturity and school size is partially accepted. The hypothesis is partially accepted since it was true for only certain categories of school size.

SUMMARY OF CHAPTER 5

To test the five hypotheses formulated for this study, use was made of one-way analysis of variance to determine if there was a significant relationship between career attitude maturity and the background variables of sex, socio-economic status, grade level, community of residence, and school size. The hypotheses dealing with the relationships of career attitude maturity and the variables of grade level and school size were further explored through the use of the Scheffé test.

Of the five hypotheses tested, three were accepted in full, one was partially accepted, and one was rejected in full. The statistically significant relationships which evolved from the analyses may be summarized as follows:

1. The career attitude maturity among senior high school students is significantly related to their father's or guardian's socio-economic status.
2. There is a significant relationship between the career attitude maturity among senior high school students and grade level.
3. The career attitude maturity among senior high

school students is significantly related to the size of the community in which the students reside.

4. The career attitude maturity among senior high school students is significantly related to different categories of school size.

Chapter 6

SUMMARY, CONCLUSIONS AND IMPLICATIONS

The purpose of the chapter is to present a summary of the problem which was investigated, the theoretical basis for the study, the methodology employed, and the findings arising from the testing of the five hypotheses. The findings are discussed in six sections corresponding to the order of the six research questions. Finally, some general conclusions are presented and implications for educational administrators are proposed.

SUMMARY OF THE STUDY

The major purpose of the study was to examine and assess the career attitude maturity of senior high school students. The study sought to answer the following questions:

1. What is the level of career attitude maturity among a sample of ninth, tenth, and eleventh grade students?
2. Is there any significant relationship between the career attitude maturity among senior high school students and sex of students?
3. Is there any significant relationship between the

career attitude maturity among senior high school students and their father's or guardian's socio-economic status?

4. Is there any significant relationship between the career attitude maturity among senior high school students and grade level of students?
5. Is there any significant relationship between the career attitude maturity among senior high school students and the size of the community in which the students reside?
6. Is there any significant relationship between the career attitude maturity among senior high school students and the size of the school which the students are attending?

The basic theoretical framework underlying this study was Super's (1957) theory of career development which contained five dimensions of career maturity. These dimensions of career maturity were cast into a conceptual framework by Crites (1965), as illustrated in Figure 1 (Supra, p. 18). In providing answers to the six research questions, the researcher used the Attitude Scale of the Career Maturity Inventory. The instrument measures the dimension in Crites' model of career maturity called career choice attitudes or what has been referred to as career attitude maturity. The Attitude Scale more closely approximates a survey instrument than an actual test. It was designed to encourage respondents to respond to each item

rather than attempting to discern a correct answer.

Besides the CMI Attitude Scale, use was made of one other instrument. The instrument was the Student Questionnaire. It provided information concerning the subject's grade level, sex, community of residence, socio-economic background, school size, and the type of career related activities participated in by the subject.

The Blishen (1971) Socio-Economic Index for Occupations in Canada was used to determine the socio-economic status of the subjects in the study. The scale is based on 1971 Canadian census data and uses Pineo-Porter prestige scores to rank occupations.

The sample was a proportional stratified sample which consisted of 334 senior high school students randomly selected from eleven high schools in the Port au Port and Humber-St. Barbe Roman Catholic School Districts. The Attitude Scale and the Student Questionnaire were administered by the researcher in June of 1978.

The six research questions were answered by means of appropriate statistical tests. The one-way analysis of variance was used to test all the hypotheses. Hypotheses 3 and 4 were further explored through the use of the Scheffé test. The data collected and analyzed were presented in 7 different tables. The data obtained from the 334 subjects were compared to see if the differences were significant. The significance level accepted was .05 for the analysis of variance and .10 for the Scheffé procedure.

Summary of Findings Concerning the Level of Career Attitude Maturity for the Study Sample

The term 'career attitude maturity' was operationally defined for purposes of the study as the subject's mean score on the Attitude Scale of the Career Maturity Inventory. With respect to the level of career attitude maturity of the study sample, it was determined that the mean scores for senior high school students in grades nine, ten, and eleven were 32.51, 33.82, and 34.46 respectively. These mean scores are lower than the mean scores of the standardization sample of Cedar Rapids, Iowa. They are comparable to the scores of some special disadvantaged minority groups (Myers, 1966; Asbury, 1967; and Miller, 1968).

In attempting to present a picture of how mature the students in the study sample were with respect to their level of career attitude maturity, cummulative percentage ogives were constructed. These ogives were the cummulative percentage ogives for the high school students in the sample and were comparable to the ogives for the standardization sample at the grade seven level.

Summary of Findings Concerning the Effects of the Background Variables on Career Attitude Maturity

The five hypotheses in the study were developed in an attempt to determine if the maturation of career attitudes in senior high school students was affected by some of the personal and background characteristics of the students. These characteristics included the variables of

sex, socio-economic status, grade level, community of residence, and the size of the school which the student was attending.

With respect to hypothesis one, it was observed that there was not a significant difference in the boys' and girls' CMI Attitude Scale mean scores. It was disclosed that the mean scores were a little higher for females than males (33.60 VS. 33.39) respectively. However, the results of the analysis of variance which were applied, revealed that this difference was not statistically significant. This finding is consistent with the finding reported by Crites (1965) when he concluded that sex may not be a crucial factor in the maturation of career attitudes.

The result of the testing of hypotheses two and four indicate that certain social characteristics of students affect their career development. The characteristics of students examined in these hypotheses were socio-economic status and community of residence. The term 'socio-economic status' was operationally defined as the occupational position of the subject's father or guardian as determined by the Blishen Socio-Economic Index for Occupations. Subjects who had a socio-economic level which was higher or equal to Class 3 were considered to have high socio-economic status. Low socio-economic status was a socio-economic level which was lower than Class 3. For the purposes of the study, the term 'community of residence' was operationally defined as the community in which the subject resides. 'Urban

communities' were those with a population greater than or equal to 2,500, and for the study included Corner Brook, Stephenville, and Deer Lake. Subjects living in communities outside of these areas, with a population of less than 2,500, were designated as 'rural'.

The results obtained from the testing of hypotheses two and four were both statistically significant. The analyses of variance which were applied showed that significant differences existed between the CMI Attitude Scale mean scores and the background variables of socio-economic status and community of residence. With regards to socio-economic status, there was shown to be a statistically significant difference among the mean scores for the six classifications of socio-economic status, the difference being significant beyond the .01 level of probability. Furthermore, it was revealed that there was a significant difference between the mean scores of high (35.38) and low (33.20) socio-economic levels. Once again, the difference was significant beyond the .01 level of probability. Finally, with respect to the variable of community of residence, there was a difference in the mean scores for students living in the rural areas (32.78) and those living in the urban areas (34.23). The difference was significant at the .01 level.

Hypotheses three and five were concerned with determining if there was a significant relationship between the career attitude maturity of senior high school students

and the variables of grade level and school size. For the purposes of the study, the term 'grade level' was operationally defined as the actual grade the subject was in when he or she was tested for career attitude maturity. The variable called 'school size' was defined as the total enrollment of the ninth, tenth, and eleventh grades of the high school which the subject attended. An enrollment fewer than or equal to 250 pupils was designated as a 'small high school'. A 'large high school' had an enrollment greater than 250 pupils.

In the testing of hypothesis three, the results of the analysis of variance indicated that there was significant differences among the mean scores of students at different grade levels. The difference was significant at the .001 level of probability. Furthermore, the results of the Scheffé procedure used to find out where the differences were among the means, revealed that the grade nine group mean (32.51) was significantly different from the grade eleven group mean (34.46). However, the grade ten group mean (33.82) was not significantly different from either the grade nine or grade eleven group mean. The finding is somewhat similar to one of the major findings reported by Crites (1969). He concluded that, in spite of differences among samples within grades, the total means for the Attitude Scale of the CMI usually increase significantly from one grade to the next.

Hypothesis five was of an exploratory nature and was

proposed in an attempt to determine whether the career development of students was affected by the size of the school which they attend. In the initial testing of the hypothesis, the outcome of the analysis of variance revealed that there was a significant difference among the eight classifications of school size. The difference was significant at the .001 level of probability. However, when the Scheffé test was used to find out where the differences were among the means, the results of the analysis disclosed that no two groups were significantly different at the .10 level.

In the further testing of hypothesis five, the mean scores were reclassified into four categories of school size. The results of the analysis of variance indicated that there was significant difference among these means at the .001 level of probability. The Scheffé method was used to determine where the differences were among these group means. The outcome of this analysis was that students attending schools with a school size in Category 3's range of 151 to 600 students, had a group mean of 35.00, which was significantly different from the group mean of 32.30, for students attending schools in Category 2's range of 51 to 150 students. Furthermore, students attending schools in Category 3's range of school size, had a group mean that was significantly different from the group mean of 32.47, for students attending schools with a school size in Category 4's range of 601 to 650 students. Finally, the Scheffé procedure revealed that students attending schools

with a school size in Category 1's range of 0 to 50 students, had a group mean of 34.50, which was not significantly different from the means of Categories 2, 3, or 4. Therefore, the source of the significance in the career attitude maturity and the school size relationship, was the difference between the group mean of Category 3 and those of Categories 2 and 4.

CONCLUSIONS

The evidence from the study supports the conclusion that the level of career attitude maturity of students in this study was lower than that of students of similar age and grade for whom the standardized norms have been computed. The conclusion was drawn because the mean scores for the study sample of high school students in grades nine, ten, and eleven were 32.51, 33.82, and 34.46 respectively and this was lower than the mean scores of the standardization sample. From this finding, it may be generalized that grades nine, ten, and eleven students in schools in the Humber-St. Barbe and Port Au Port Roman Catholic School Districts have a level of career attitude maturity which is lower than the standardized sample.

The study has provided evidence for concluding that the study sample had a level of career attitude maturity which approximated the level of other students of similar age and grade but who were from different economic, ethnic,

and racial groups. The conclusion was evident since the mean scores for the study sample were comparatively similar to the mean scores obtained in studies made with the disadvantaged, American Indians, Mexican-Americans, and inner-city Blacks. It may be generalized from this finding that grades nine, ten, and eleven students in schools of the two school districts, have a level of career maturity which is comparable to the level of some special disadvantaged minority groups.

It also may be concluded from the evidence in the study that the level of career attitude maturity of students in the study approximated the level for the grade seven standardization sample. This was apparent because there was a high degree of congruence between the cummulative percentage ogives of total CMI Attitude Scale scores for the standardization sample at the grade seven level and the ogives for the study sample. From this finding, it may be generalized that senior high school students in schools of the Humber-St. Barbe and Port au Port Roman Catholic School Districts have a level of career attitude maturity which is comparable to the seventh grade standardization of Cedar Rapids, Iowa.

Since the mean scores for the sample of high school students in grades nine, ten, and eleven were 32.51, 33.82, and 34.46 respectively, it may be concluded that career attitude maturity increases monotonically across grades. That is, eleventh graders have a higher level of career

attitude maturity than tenth graders, and tenth graders have a higher level of career attitude maturity than ninth graders.

Supportive evidence has been furnished by this study for concluding that the relationship between career attitude maturity and the variable of sex was not a significant one. The relationship was not significant since the mean scores for the study sample were a little higher for females than for males (33.60 VS. 33.39) respectively. It may be generalized from this finding that sex is not a significant factor in the maturation of career choice attitudes for the senior high school population of the two school districts.

If it can be assumed that the socio-economic ratings in this study are accurate and meaningful, then it may be concluded from the evidence in this study that there was a significant relationship between career attitude maturity and the background variable of socio-economic status. The relationship was significant because students from the higher socio-economic levels had a significantly higher group mean score than students from the lower socio-economic levels (35.38 VS. 33.20) respectively. Furthermore, from this finding, the generalization may be made that students from a low socio-economic background in schools of the two school districts, have a significantly lower level of career attitude maturity than those from a higher socio-economic background.

Although there was not a significant difference in

the mean scores of students at each grade level, this study has provided evidence for concluding that there was a significant relationship between career attitude maturity and the student's grade level. The conclusion was evident since there was an overall progression in mean scores at different levels. Furthermore, although the grade ten mean (33.82) was not significantly different from either the grade nine mean (32.51) or grade eleven mean (34.46), the grade nine mean was significantly different from the grade eleven mean. From this finding, the generalization may be made that in the senior high school population of the two school districts, grade nine students have a level of career attitude maturity which is significantly lower than the level for grade eleven students, while grade ten students have a level of career attitude maturity which is not significantly different from either the grade nine or the grade eleven level of career attitude maturity.

The investigation has provided grounds for concluding that there was a significant relationship between career attitude maturity and community of residence. This reasoning was based on the fact that the group mean of students from the urban areas was significantly higher than the group mean of students from the rural areas (34.23 VS. 32.78) respectively. It may be generalized from this finding that in the senior high school population of the two school districts, students from the urban areas have a significantly higher level of career attitude maturity than students from the rural areas.

Finally, it may be concluded from the evidence in this study that there was a significant relationship between career attitude maturity and certain classifications of school size. The conclusion was drawn because the group mean of 35.00 for students attending high schools with a range in school size of 151 to 600 students was significantly different than the group mean of 32.47 for students attending schools with a range in school size of 51 to 150 students. Furthermore, the group mean of 35.00 was significantly different than the mean of 32.47 for students attending schools with a range in school size of 601 to 650 students. From this finding, it may be generalized that in the senior high school population of the two school districts, students attending schools with a range in school size of 151 to 600 students have a significantly higher level of career attitude maturity than those attending schools with ranges in school size of either 51 to 150 students or 601 to 650 students. Although this generalization may be made, it would appear that the relationship between career attitude maturity and school size might be worthy of further investigation. This relationship is perhaps worthy of further investigation, an account of the fact that out of the eleven high schools used in this study, only three could be classified as large high schools.

IMPLICATIONS

Implications of Findings for Educational Administrators

In Chapter 1, the researcher pointed out that there had been attempts in the Province at developing career guidance programmes that were applicable to the Newfoundland setting (for example, see McCarthy, 1976). However, before such programmes can be implemented, it is imperative to assess what the needs are for career guidance, how they can be fulfilled, and which ways of meeting them are the most efficient. Since it will be the responsibility of administrators to provide for such programmes, the findings of this study have administrative implications.

In one area of the Province, it appears that there was a general lack of career guidance programmes. The evidence from this study indicated that a very small percentage of the participants in the study were exposed to some form of career guidance. Although over 65 percent of the subjects had participated in a career day only, only 5.1 percent had participated in a career guidance class and less than one percent had participated in a pre-vocational programme or any other career related activities.

Besides revealing a general lack of career guidance programmes in the two school districts, the findings of this study may provide educational administrators with some possible guidelines for determining what high school populations and what type of schools in the Province are in the greatest need of such programmes. It would appear that

senior high school students in the Humber-St. Barbe and Port au Port Roman Catholic School Districts have a great need for career guidance programmes. The study sample from this area showed a depressed performance on the CMI Attitude Scale in relation to the norms for the test. Their performance was significantly lower than the standardization sample of Cedar Rapids, Iowa and was comparable to the performance of some special disadvantaged minority groups.

It is possible that the findings of the study concerning the relationship between career attitude maturity and the variables of socio-economic status and community of residence, might furnish educational administrators with some guidelines for the allocation of career guidance programmes. The finding which revealed that urban students had a significantly higher level of career attitude maturity than rural students, might imply that students living in rural areas have a greater need for career guidance programmes. Furthermore, the finding which showed that students with a high level of socio-economic status had a significant higher level of career attitude maturity than students with a low level of socio-economic status, suggests that students from the lower socio-economic levels have a greater need for career guidance programmes.

The relationship revealed between career attitude maturity and certain classifications of school size has some possible implications both for school planning and

for determining career guidance needs. The finding which indicated that students attending schools with a range in school of 151 to 600 students had a significantly higher level of career attitude maturity than students attending schools with ranges in school size of either 51 to 150 or 601 to 650 students, appears to help educational administrators with the problem of determining what type of high schools have the greatest need for career guidance programmes. The implication of this finding is that schools with ranges in school size of either 51 to 150 or 601 to 650 students have a greater need for career guidance programmes than schools with a range in school size of 151 to 600 students.

The findings of the study have some further implications for educational administrators. The study sample's depressed performance on the CMI Attitude Scale, may imply that the Province's educational system as it was organized in the 1977-78 school year, was not requiring the proper choice-making tasks of its students at the proper times. Subsequently, it may have been contributing to the high rate of unemployed youth in the Province, by not providing students with the necessary career choice attitudes for making realistic and independent career choice decisions. Therefore, some changes in the way the educational system is organized in the Province may be required. Among the changes considered, might be the

addition of a Career Education Consultant to the Department of Education's Division of Instruction. The individual might be responsible for establishing CMI Attitude Scale norms for the entire Province. Eventually, he might also be responsible for developing and monitoring a Career Education Curriculum which would be applicable to the Newfoundland setting. Subsequently, it may also be necessary to use coordinators to help implement and coordinate K to 12 career education programmes at the district level.

Recommendations for Further Research

1. That the present study be replicated in other areas of Newfoundland to further establish CMI Attitude Scale norms.

2. A study should be conducted in the Humber-St. Barbe and Port au Port School Districts to determine career attitude maturity of junior high school students.

3. A study to determine the influence and general effectiveness of career guidance in developing career attitude maturity of senior high school students.

4. A study of the effects of the school and curriculum in developing career attitude maturity of senior high school students.

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APPENDICES

APPENDIX A

SAMPLE CMI ATTITUDE SCALE FORM A-1

Form A-1

Attitude Scale

cmi

CAREER MATURITY INVENTORY

John O. Crites, Ph.D.

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cmi

About This Inventory

The *Career Maturity Inventory* has been constructed to survey the various attitudes and competencies which are important in making decisions about your career; it is not a personality inventory, an interest inventory, an achievement test, or an aptitude test.

This inventory consists of an *Attitude Scale* and a *Competence Test*. The *Attitude Scale*, which you are about to take, asks you about your attitudes and feelings toward making a career choice and entering the world of work. The *Competence Test* is more concerned with knowledge about occupations and the decisions involved in choosing a career.

The information you get from taking the *Career Maturity Inventory* can be used in choosing and planning for your career and can contribute to your career maturity. Complete this inventory carefully and thoughtfully; it may help you choose a more satisfying and successful career.

6 7 8 9 82 81 80 79 78 77 76

cmi

Directions

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.

Read the statements and mark your answers in the section marked ATTITUDE SCALE on the separate Answer Sheet. If you agree or mostly agree with the statement, use your pencil to blacken the space marked with a T. If you disagree or mostly disagree with the statement, blacken the space marked with an F. 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.

Career Maturity Inventory | ATTITUDE SCALE

4

1 Once you choose a job, you can't choose another one.

2 In order to choose a job, you need to know what kind of person you are.

3 I plan to follow the line of work my parents suggest.

4 I guess everybody has to go to work sooner or later, but I don't look forward to it.

5 A person can do any kind of work he wants as long as he tries hard.

6 I'm not going to worry about choosing an occupation until I'm out of school.

7 Your job is important because it determines how much you can earn.

8 Work is worthwhile mainly because it lets you buy the things you want.

9 The greatest appeal of a job to me is the opportunity it provides for getting ahead.

10 I often daydream about what I want to be, but I really haven't chosen a line of work yet.

11 Knowing what you are good at is more important than knowing what you like in choosing an occupation.

12 Your parents probably know better than anybody else which occupation you should enter.

13 If I can just help others in my work, I'll be happy.

14 Work is dull and unpleasant.

15 Everyone seems to tell me something different; as a result I don't know which kind of work to choose.

16 I don't know how to go about getting into the kind of work I want to do.

17 There is no point deciding on a job when the future is so uncertain.

18 I spend a lot of time wishing I could do work I know I can never do.

19 I don't know what courses I should take in school.

20 It's probably just as easy to be successful in one occupation as it is in another.

21 By the time you are 15, you should have your mind pretty well made up about the occupation you intend to enter.

22 There are so many things to consider in choosing an occupation, it is hard to make a decision.

23 I seldom think about the job I want to enter.

24 It doesn't matter which job you choose as long as it pays well.

25 You can't go very far wrong by following your parents' advice about which job to choose.

26 Working is much like going to school.

27 I am having difficulty in preparing myself for the work I want to do.

28 I know very little about the requirements of jobs.

29 The job I choose has to give me plenty of freedom to do what I want.

30 The best thing to do is to try out several jobs, and then choose the one you like best.

31 There is only one occupation for each person.

32 Whether you are interested in a particular kind of work is not as important as whether you can do it.

33 I can't understand how some people can be so certain about what they want to do.

34 As long as I can remember, I've known what kind of work I want to do.

35 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.

36 You get into an occupation mostly by chance.

37 It's who you know, not what you know, that's important in a job.

38 When it comes to choosing a job, I'll make up my own mind.

39 You should choose an occupation which gives you a chance to help others.

40 When I am trying to study, I often find myself daydreaming about what it will be like when I start working.

41 I have little or no idea of what working will be like.

42 You should choose an occupation, then plan how to enter it.

43 I really can't find any work that has much appeal to me.

44 You should choose a job in which you can someday become famous.

45 If you have some doubts about what you want to do, ask your parents or friends for advice and suggestions.

46 You should choose a job which allows you to do what you believe in.

47 The most important part of work is the pleasure which comes from doing it.

48 I keep changing my occupational choice.

49 As far as choosing an occupation is concerned, something will come along sooner or later.

50 I am not going to worry about choosing a job since you don't have anything to say about it anyway.

APPENDIX B

ANSWER KEY FOR CMI ATTITUDE SCALE

CAREER MATURITY INVENTORY

ATTITUDE SCALE

ANSWER KEY

1. False
2. True
3. False
4. False
5. False
6. False
7. False
8. False
9. False
10. False
11. False
12. False
13. False
14. False
15. False
16. False
17. False
18. False
19. False
20. False
21. False
22. True
23. False
24. False
25. False
26. False
27. False
28. False
29. False
30. False
31. False
32. False
33. False
34. False
35. False
36. False
37. False
38. True
39. False
40. False
41. False
42. True
43. False
44. False
45. True
46. True
47. True
48. False
49. False
50. False

APPENDIX C

LETTER TO MCGRAW-HILL RYERSON LIMITED REQUESTING PERMISSION TO USE CMI MATERIAL

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X8

Department of Educational Administration

Telex: 016-4101
Telephone: (709) 737-7647/8

Memorial University
Education Building
General Office
P.O. Box 47
St. John's, Newfoundland

12 August 1978

Ms. Lynn Passey
Testing and Evaluating
Materials Division
McGraw-Hill Ryerson Limited
Scarborough, Ontario
M1P 2Z5

Dear Ms. Passey:

I am presently conducting research at Memorial University as part of the requirements for the degree of Master of Education. This research involved the use of the Attitude Scale of The Career Maturity Inventory. I would like to include a copy of the Attitude Scale, the scoring key and the directions for administering the scale, in my thesis and am requesting your permission to do so.

Please reply by return mail at your earliest convenience.

I would like to thank you for your prompt replies to my various inquiries during the year.

Sincerely,

Graham Tompkins

Graham Tompkins
Graduate Student
Department of
Educational Administration

APPENDIX D

LETTER RECEIVED FROM MCGRAW-HILL RYERSON LIMITED

GRANTING PERMISSION TO USE CMI MATERIAL

McGraw-Hill Ryerson Limited
330 Progress Avenue
Scarborough, Ontario M1P 2Z5
Telephone 416/293-1911, Telex 065-25169

November 20, 1978

Graham Tompkins
Department of Educational Admin,
Memorial University,
Education Bldg., General Office
P.O. Box 47,
St. John's, Newfoundland.

Dear Mr. Tompkins:

Sorry for the delay in answering your letter of August 12th.

There have been several changes of staff over the last six months and correspondence has just been neglected.

I hope you have gone ahead and used the CMI material you needed. Just in case you felt a little leary of doing so without written permission we decided better late than never with the permission.

We hereby give you permission to use the CMI material in your thesis.

If there is anything further we can help you with please do not hesitate to call or write. Good luck with your thesis.

Sincerely,

BECarroll

B. E. Carroll (Mrs.)
Marketing Assistant
CTB Division

/bc