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THÈSES CANADIENNES SUR MICROFICHE

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TITLE OF THESIS/TITRE DE LA THÈSE Short Term Career Education and Career Maturity

UNIVERSITY/UNIVERSITÉ Simon Fraser University

DEGREE FOR WHICH THESIS WAS PRESENTED/GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE M.A. (Education)

YEAR THIS DEGREE CONFERRED/ANNÉE D'OBTENTION DE CE DEGRÉ 1982

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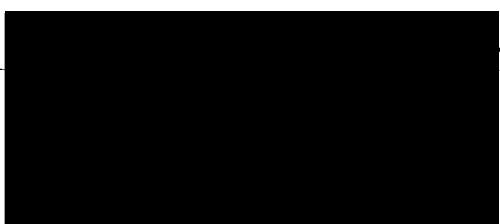
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SHORT TERM CAREER EDUCATION AND
CAREER MATURITY

by

Richard E. Down

B.P.E., University of B.C., 1972

THIS THESIS SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS (EDUCATION)

in the Faculty

of

Education

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SIMON FRASER UNIVERSITY

May 1982

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ABSTRACT

Career education is often cited as a means of reducing unemployment and to ease career planning. This is particularly true for high schools which are mainly responsible for developing career education programs. However, a search of the literature indicates both positive and negative support for the effectiveness of career education.

This study assessed the effectiveness of a short term career education program with the goal of changing the career maturity of grade 11 students. The career education program was based on Creating a Career, a publication of the Canada Employment and Immigration Commission. This program is widely used in Canada, in spite of a dearth of empirical validation of the program's effectiveness. A pretest-posttest design was used to measure the effects across four randomly assigned groups of students. Components of the career education program included a career education unit, a post-secondary information day, and career day. One group (n=52) received the full program, one group (n=52) received only the career education unit, one group (n=52) received only the post-secondary information day and career day and one group (n=60) received no treatment. Students were given the Crites Career Maturity Inventory and an achievement test on material presented in the career education unit. They were also asked how much they liked the various components of the program.

Using analyses of variance, statistically reliable differences in career maturity were found among groups at the pretest on parts of the Career Maturity

Inventory. Girls scored reliably higher than boys in career maturity both at the pretest and, except for the attitude scale, on the posttest also. The Tukey Wholey Significant Difference Test was used as a post hoc test for all treatment and treatment by sex interactions. Results indicated only that career maturity differences present at the pretest increased on the posttest and that one group of boys scored consistently lower than all other groups on all career maturity scales. However, both groups receiving the career education unit scored reliably better on the achievement test than the other two groups.

The absence of effects on career maturity attributable to the career education program leads one to question either the effectiveness of short term programs or the measure used to evaluate such effectiveness. Sex differences indicate the need for further study in this area.

DEDICATION

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To Naomi,

Richard, Larissa, and Dusty,

whose love knows no boundaries.

)

2

v

12

ACKNOWLEDGEMENTS

I would like to thank all those who have had a part in any way in completing this thesis. A special thanks must be given to Marg Falot for her part in the development and completion of the project as well as patience in seeing it through to the end. Dr. Ron Marx has been of invaluable assistance in design and direction of this work, especially in final editing along with Dr. Phil Winnie.

The finished work would not have been possible without the effort of a number of those who went beyond the call of duty to type and edit it. To Adolph Pauls, my former teacher and present colleague, Grace Hudson, Shirley Heap, Gloria Casselman, Mary Bartsch, Joyce Sampson, and Barbara Braun, many thanks.

I am also indebted to Prairie Bible Institute and Ken Pennner for encouragement and financial assistance to complete this work and to God for giving me the desire and strength to see it through to the end.

R. E. Down

May 1982

TABLE OF CONTENTS

APPROVAL PAGE		ii
ABSTRACT		iii
DEDICATION		v
ACKNOWLEDGEMENTS		vi
LIST OF TABLES		ix
LIST OF FIGURES		x
CHAPTER		
I	INTRODUCTION	1
II	LITERATURE REVIEW	5
	Theoretical Background of Career Education	5
	Super's Vocational Development Theory	8
	Career Maturity	12
	Career Education	14
	Research on Career Education Options	16
	The Present Study	21
III	METHOD	24
	Participants	24
	Treatment	25
	Instruments	29
	Procedure	35
IV	RESULTS	38
	Missing Data	38
	Reliability of Dependent Variables	38
	Description of Treatment Groups and Sex Groups at Pretest and Posttest	41
	Comparison Among Feeder Schools	55
	Student Evaluation of the Program	59

V	CONCLUSION AND DISCUSSION	64
	Major Findings	64
	Student Evaluation	65
	Summary of Results	66
	Implications of the Study	68
	Limitations of the Study	71
	Future Implications	72
	APPENDICES	74
A	LESSON PLANS	75
B	CAREER DAY INFORMATION SHEET	90
C	CAREER DAY BULLETIN	95
D	CAREER PLANNING QUESTIONNAIRE AND ACHIEVEMENT TEST	103
	REFERENCES	113

LIST OF TABLES

TABLE		
I	Design of Study	37
II	Reliabilities and Intercorrelation of C.M.I. Subtests at Pretest	39
III	Reliabilities and Intercorrelations of C.M.I. Subtests at Posttest	40
IV	Pretest C.M.I. Scores and Crites' Norms	42
V	Pretest Career Maturity Scores by Groups	43
VI	Pretest Analyses of Variance	46
VII	Posttest Career Maturity and Achievement Test by Groups	48
VIII	Posttest Analyses of Variance	51
IX	Reliable Tukey WSD Test for Group and Group by Sex	54
X	Pretest Comparison Among Feeder Schools	60
XI	Student Enjoyment and Dislike of Program Components	61
XII	Career Day Session Attendance and Evaluation	62

LIST OF FIGURES

Figure

1	The Life Career Rainbow	11
2	Group by Sex Interaction on Posttest- Planning	56
3	Group by Sex Interaction on Posttest- Total Competence Test	57
4	Group by Sex Interaction on Posttest Career Planning Achievement Test	58

CHAPTER I

INTRODUCTION

Recent unemployment figures show that nearly 50 per cent of those unemployed are between the ages of 17 and 25 (Statistics Canada, 1979). Politicians and parents have placed part of the blame on schools for not providing career and vocational guidance to students leaving high school. In an attempt to respond to these criticisms several types of programs have been devised and implemented to bridge the gap between school and the world of work.

Career education programs have ranged from short, instructional information-giving to students with computer based programs (Jarvis, 1976; Super, 1970) to elective courses in high school which combine classroom study and community work experience (Goldie, 1976; Surrey, 1979). Other programs have been developed by the Canada Employment and Immigration Commission such as Creating a Career (Davison and Tippett, 1977) which is a 75-100 hour curriculum based teaching tool. A number of programs have been developed to give students access to career information in a mechanical way. Examples of these are the Canada Employment and Immigration Commission's "Computerized Heuristic Occupational Exploration Systems" (C.H.O.I.C.E.S., Jarvis 1976, 1978), student directed packages such as the Index to Canadian Occupations (Advanced Development Division, Occupational Career Analysis and Development Branch, 1978) and mechanical aids such as the Occupational Exploration Kit (Davison and Tippett, 1977).

Individual teachers and counsellors have also devised career education programs of varying kinds which are designed to incorporate theoretical components of career education with the goal of raising the career awareness and maturity of students (Ferguson, 1978; Hardie, 1978; Saskatchewan Ministry of

Education, 1978; Topping, 1979; Van Es, 1979). While most of these programs attempt to teach new skills and attitudes concerning career development, few developers have gone beyond studying students' acceptance and enjoyment of the programs.

Each of these delivery systems has its own merit and attempts to meet its stated goals within the class time available to it. A crucial issue is: do these programs meet the career maturity needs of students? According to a Canada Employment and Immigration Commission study (Breton, MacDdonald, Richer, 1972), young people were found to be lacking in self knowledge, knowledge of the world of work, and decision-making skills. This information is theorized to be necessary in differing amounts at different times in the individual's life. Vocational theorists such as Ginsberg, Ginsburg, Axehead, and Herma (1951), Holland (1973), Super (1957), and Tiedman (1963), identify several developmental stages or phases that individuals pass through in developing an occupational or career path.

Confounding the problem of how to devise career education programs is the lack of a consistent definition of what career education is, what its components are, and how program effectiveness can be measured. Rossi (1979), in discussing philosophical and societal reasons underlying the development of career education, stressed the work experience and occupational orientation aspect of career education. Heyneman (1979) stressed the debate over the need for career education and emphasized the need to infuse this material into the regular curriculum. Hoyt (1979) outlined objectives of career education and challenged those involved in career education to examine their programs and objectives in light of his guidelines. Counsellors and teachers may feel threatened by changing major components of the school curriculum to accommodate career education (Heyneman, 1979). Many elect to use short-term packages of information

for students on careers and career choice with the aim of assisting students to adjust to the world of work in the easiest possible way. Others see career education as an unnecessary addition or a false issue and opt out of involvement in career education programs (Grubb and Lazerson, 1975).

An investigation of the Surrey School district where this study took place showed the status of career education programs in secondary schools was representative of what was going on elsewhere in the Province and North America. Students in certain schools received little or no career education. Others have been exposed to short term units in guidance class; selected students participated in work experience programs; a small number of students had the opportunity of working in a cooperative education program, while other schools have attempted to use one-shot career days to assist students in gaining occupational knowledge. In contrast, in other schools in Surrey and other places (Saskatchewan Department of Education, 1978) students have been allowed to elect full length, credit, career planning courses, based on similar content to Creating a Career, which is a curriculum based career planning course developed by the Canada Employment and Immigration Commission (Davison and Tippett 1977). However, little has been done to evaluate the effectiveness of these programs in terms of the areas of vocational maturity that are supposedly being enhanced, or the appropriateness of these programs and the methods used to develop career maturity in secondary school students. Hoyt (1979) points to the general worth of career education, the mixed results of the effectiveness of career education and the need for all career educators to describe treatments used in order for future comparisons to be made and a consensus of treatment to develop. Other researchers (Hardie, 1978; Heyneman, 1979; Topping, 1979) point to the inconclusiveness of studies that have been done and have recommended further effectiveness studies.

These challenges, coupled with the fact that adults today are changing their career up to five times during their working life (Super, 1957) suggest that investigations of methods of enhancing career maturity in students within the framework of the present school system is warranted. The goal of such teaching should be to instruct students in the process of career planning. In this way they will not only be prepared to make tentative career choices, but will be better prepared to make future choices.

This study investigated one of these methods of career education. Students participated in an eight hour career education unit, a career day, and a post-secondary evaluation day. The question was to determine if these interventions together or separately, would significantly change the career maturity of the students involved.

CHAPTER II

LITERATURE REVIEW

Theoretical Background of Career Education

Several theories have been developed to describe the process of occupational choice, vocational development and career maturity. The purpose of these theories is to explain how young people begin to explore the possibility of work, look at alternatives, make tentative plans, enter the world of work, and make subsequent vocational choices. Osipow (1973) developed four classifications of the major career choice and career development theories: trait factor theories (Hull, 1928; Kitson, 1925; Parsons, 1909; Williamson, 1965), sociological and career choice theories (Caplow, 1954; Harmony, 1964; Hollingshead, 1949; Miller and Fromm, 1951), developmental self-concept theories (Crites, 1969; Ginzberg, Ginsburg, Axelrod and Herma, 1951; Rogers, 1951; Super, 1957, 1978), and vocational choice and personality theories (Holland, 1959, 1973; Hoppock, 1957; Roe, 1957; Schaffer, 1953; Small, 1953). Osipow (1973) points out that although theories of career maturity are varied, they provide a framework for working with people, for research and for translation of research findings into practical programs.

Trait factor theories. The goal of trait factor theories is basically to match an individual's interest and abilities with the occupational opportunities available. Theoretically, a match can be made that will be ideal for a particular person for the duration of that person's working life. Interest and aptitude tests such as the Strong-Campbell Vocational Interest Inventory, the Kuder Preference Record and the General Aptitude Test Battery (GATE) are based on

the trait factor approach to career counselling.

Sociological and career choice theories. This approach claims that occupations are chosen according to the conditions in which a person finds himself at a particular time. The person simply goes along with the flow of events. From the writings of Caplow (1954), Hollingshead (1949), and Miller and Fromm (1951) comes the theory that features of the social environment, such as social class, economic factors, minority group membership, family wealth and geographical location have direct bearing on occupational choice. Chance also plays an important role, since being in the right place at the right time potentially affects one's ability to make an appropriate occupational choice.

Developmental self-concept theories. While recognizing the importance of the social environment, developmental theorists create an additional theoretical component by identifying stages of maturity with regard to career decision making. This theoretical position includes the work of Crites (1969), Ginzberg et al. (1951), Rogers (1951) and Super (1957, 1978). There are three major developmental processes according to this group of theories. First, self confidence becomes more clearly defined as individuals mature. Second, in making career decisions, individuals compare this self images with images they have developed about occupations. Third, the adequacy of the eventual decision is confirmed by the similarity between an individual's self-concept and concept of the career that is eventually chosen (Osipow, 1973). The main theorist in this camp is Donald Super (1957,1978). Most of the work by others, such as Ginsberg (1951, 1963) and Crites (1969), relate closely to Super's work, which is reviewed at length in a following section.

7

Vocational choice and personality theories. The basis of this school of thought is the analysis of individual personalities either in relation to needs inherent in the process of vocational choice (Hoppock, 1967; Maslow, 1968) or the relationship of basic personality types to specific career areas or environments (Holland, 1959, 1973). Other authors in this field have empirically researched specific personality factors involved in career choice and career satisfaction (Roe, 1957; Schaffer, 1953; Small, 1953).

The most practical work in this area seems to be Holland's extension of personality types to environment types. Through counselling interviews, and administration of the Vocational Preference Inventory (VPI) or the Self Directed Search (SDS), an individual's similarity to one of six basic personality types can be evaluated. These types are Realistic, Investigative, Artistic, Social, Enterprising and Conventional. Having shown interest in, preferences for, and claimed competencies in these areas, individuals can investigate environments which Holland classifies in a similar manner. Holland (1973) further states that: "Vocational satisfaction, stability and achievement depend on the congruence between one's personality and the environment (composed largely of other people) in which he works" (p.9). Therefore, part of the job of career guidance is to help students relate personal assessment to compatible environments through an examination of classifications and descriptions of occupations which are similar to the vocational personality of the student.

Often theories are seen as being mutually exclusive. However, as Osipow (1973) points out, each of these theories is closely intertwined and draws information from one another in practice and research. This is particularly true in that tests based on trait factor theories often help individuals make self assessments (based on developmental or self-concept theories), while insights into needs and social structure assists students in setting priorities.

Super's Vocational Development Theory

Super's (1957) vocational development theory was designed to explain the process of personal development in relation to vocational maturation. Much of Super's theory is based on the work of Ginzberg, et al. (1951), who proposed that occupational choice is a process, not simply a one-time event (which extends from pre-teen to early twenties) culminating in a more or less satisfactory and satisfying compromise between the realities of occupations and personal needs. In his later work, Super (1963, 1978) has isolated personal self-concept as "the synthesizing factor" in determining career decisions as individuals move through the life stages of growth through decline. These vocational life stages follow closely the work of Buehler (1933) in developmental psychology.

Growth stage. This stage, lasting from birth to 14 years of age, is the primary period of self-concept development. This development occurs through the identification with key environmental figures such as parents, siblings, neighbours, and teachers. Dominant patterns in the three phases of this stage begin with fantasy, ages 4-10, where needs dominate and role playing focuses on fantasy. Such fantasy may include playing fireman, mechanic or housekeeper, and is an important first exposure to various careers. The interest substage, ages 11-12, is dominated by individual preferences which determine activities and aspirations. Such preferences or likes may lead to personal infatuations. Personal infatuation with magic or art may lead a child to want to be a magician or artist during this stage. Capacity, the third substage from age 13-14, focuses on the importance of abilities in interest areas, job requirements and training. Here young people try to perfect skills and competencies necessary for their tentative choices such as drawing and painting skills for the artist or

sleight of hand for the magician.

Exploration stage. Lasting approximately from age 15-24, this stage is one of self examination, trying out roles and occupational exploration in each area of the person's activities, such as recreation, education and part-time work. The three substages of this period are called tentative, transition and trial. In the tentative substage, age 15-17, a person considers needs, interests, capacities, values and opportunities relating to alternative careers, to make tentative career choices. As these choices are crystallized, as Super calls it, they are tried out in fantasy, discussion, part-time work and school subjects. The transition substage, age 18-21, is characterized by the realization that specialization in training and experience is important. Here the youth begins work or professional training in an attempt to implement his/her personal self-concept. The last substage of exploration, the trial period, age 22-24, leads to implementation of plans and preparation for a specific job. The individual now begins to try out a job in an appropriate field.

Establishment stage. As an appropriate field of work is found, from ages 25-44, an effort is made to continue in that field. Some early trial or shifting may occur, but establishment may begin without trials especially in the professions. Two substages describe the process of establishment. Trial and stabilization, ages 25-30, involves early attempts at finding a life's work or acceptance of the pattern of a succession of unrelated jobs. The next substage, age 31-44, is one of consolidation and advancement, or frustration.

For some, the career pattern stabilizes at this time and the most creative years unfold, while others are caught in frustration over unreachable dreams.

Maintenance stage. Super (1978) describes ages 45-64 as ones of holding on

to the position that a person has made in the world of work. Most people continue along established lines. Others continue the establishment process through innovation by trying new jobs and experiences and challenges by attempting difficult tasks. Still others, feeling unfulfilled and frustrated, stagnate or make major career changes.

Decline stage. For ages 60 and up, paid work activity changes and finally ceases due to the decline in physical and mental powers or societal pressure. This stage proceeds from deceleration, ages 60-65, to disengagement, ages 65-70, to retirement, ages 71 and up. While the actual ages may be changing as a result of changing views about things such as mandatory retirement, the process and development stages seem well described.

The life career rainbow. Super has organized life stages into a figure and has identified roles that an individual performs along the continuum of life stages (See Figure 1). There is only one role during early childhood until age 5 when the student role also begins to overlap that of a child. These two roles are joined by that of leisurite, age 10, and citizen age 15. More mature roles as a worker, spouse, parent, and homemaker begin respectively at age 20, 25, and 27. These roles are followed much later by the role of pensioner at age 65.

As shown in Figure 1 by the shading, these roles take up varying amounts of a person's total life space. A line drawn from the midpoint of the graph's baseline to a specific age will cross several roles that comprise the total lifestyle of that person at any given time, thus the title, "Life Career Rainbow".

SITUATIONAL DETERMINANTS, REMOTE: IMMEDIATE

- SOCIAL STRUCTURE
- HISTORICAL CHANGE
- SOCIO-ECONOMIC ORGANISATION AND CONDITIONS
- EMPLOYMENT PRACTICES
- SCHOOL
- COMMUNITY
- FAMILY

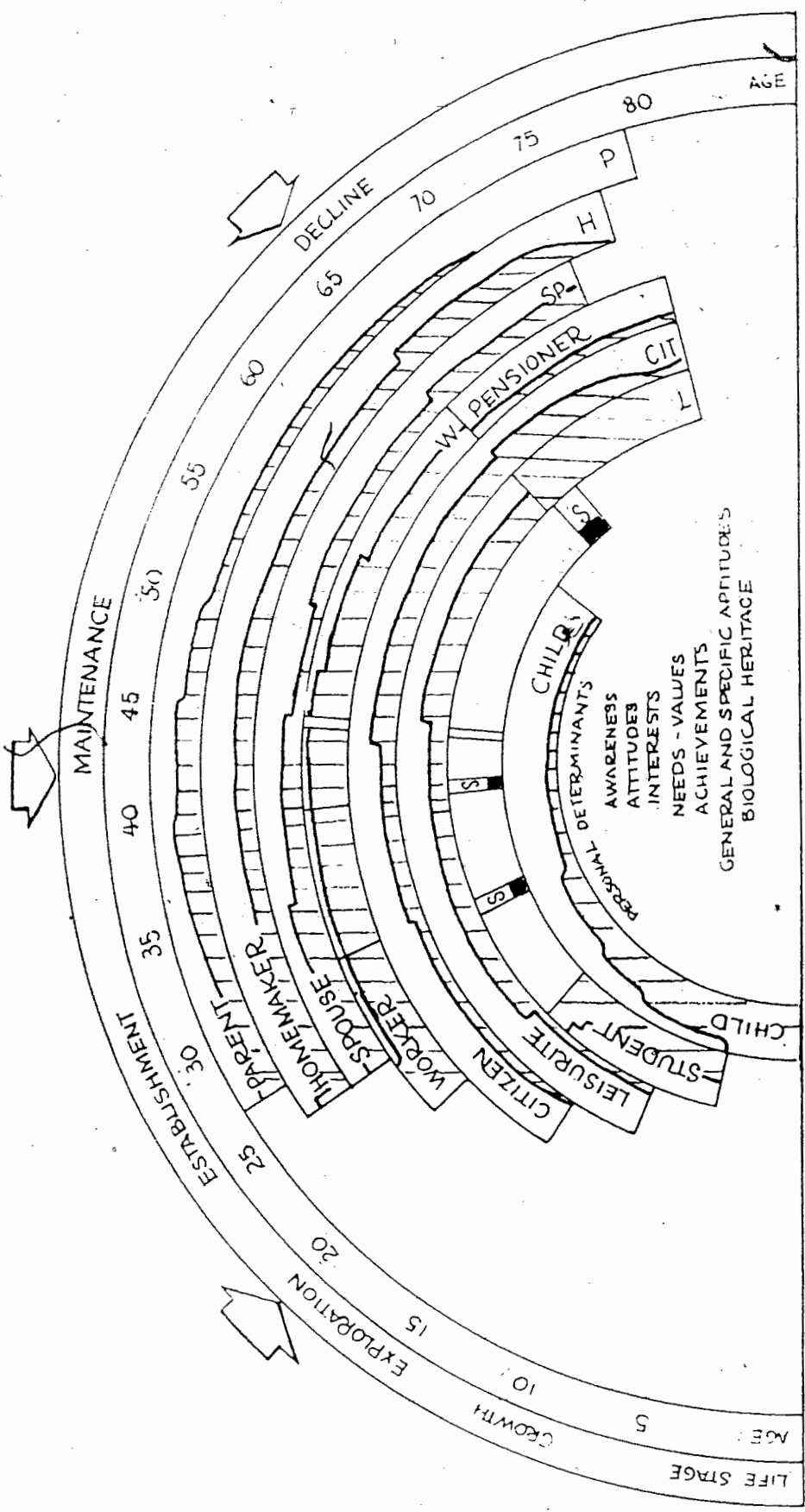


Figure 1. The Life-Career Rainbow: A Life span life space approach to career development. D.E. Super, *Journal of Vocational Behavior*, 1980, 16(3), 282-298. Used by permission.

A number of factors work together to determine how easily a person fulfills these roles and moves from one stage to another. These include personal and situational determinants as well as critical decision points. Super (1978, 1980) points out that situational determinants such as social structure, historical change and socio-economic organization and conditions are remote, but do have a bearing on personal vocational adjustment. However, employment practices, school, community, and family factors are much more immediate and can affect vocational development directly. Combining with these are personal determinants such as awareness, attitudes, interests, needs and values, achievement, general and specific aptitudes, and biological heritage.

The final factor affecting individual vocational development is that of three main critical decision points. The initial decision point prior to entering the work force, occurs during the exploration stage. The second decision point is reached often through unemployment or a mid-life career change and occurs during the maintenance stage. The final decision point at retirement occurs when one faces a change of activities at the beginning of the decline stage.

Following closely on the theory of Super are the topics of assessing the relative career maturity of individuals while at different life stages and identifying some of the strategies to put in place to prepare people for important career decisions -- namely career education.

Career Maturity

The concept of career maturity is derived directly from Super's (1957, 1978) and Super and Crites (1962) development theory. Through analyzing the behaviour of people as they cope with development tasks, corresponding life stages can be

identified. A particular person's career maturity is described by Super (1955) as the place reached on the "continuum of vocational development from exploration to decline" (p. 153). Super (1957) also isolates five dimensions which identify the progression of career maturity. These are:

- (1) orientation of vocational choice;
- (2) information and planning;
- (3) consistency of vocational choice;
- (4) crystallization of traits;
- (5) wisdom of vocational preferences.

Crites (1973a) argues that career development is a unidirectional, progressive process which culminates with the attainment of some end-state objective, i.e. placement in the world of work. For this reason, Crites has developed a measure which claims to relate career maturity to age. The goal is to measure the progressive "largely irreversible" process of career development (Ginzberg et al., 1951, p. 186). Out of this work came the Career Maturity Inventory (CMI) which measures both the attitude and competence necessary for career maturity. The Attitude Scale has 50 items while the Competence Test has 100 items divided into five subtests: Self Appraisal, Occupational Information, Goal Selection, Planning, and Problem Solving. This inventory makes possible the comparison of an individual's career maturity level with those of peers.

Other theorists, such as Tiedman and O'Hara (1963), do not necessarily see the progressiveness and irreversibility of career maturity and choice. Tiedman and O'Hara (1963) attempt "to offer a view of occupations and work within an evolving pattern of modes with which time is occupied by activity and awareness" (p. 58). They further state that "those people for whom the world of work has the greatest meaning consonant with their own previously developed meaning system will find the greatest satisfaction and success in their work" (p.58). In this way, career maturity is a measure of one's satisfaction with one's present situation as well as one's concept of present and future aspirations. Such a

view makes standardization difficult and assessment of individual career maturity very relative. However, the identification of career choice competencies and career choice attitudes by Crites (1973a), with a resulting measure to gauge individual advancement in an age-related continuum, provides a usable reference for those working with individuals in the area of career exploration and planning.

Unlike the developmental theorists, Holland claims that a person is vocationally mature when he/she has a vocational pattern that is consistent. To Holland (1975) this would include a proper match between personality type and environment. Other factors indicating vocational maturity include having interest-personality patterns that are complimentary, such as artistic and enterprising, as opposed to enterprising and investigative (Holland, 1973).

Career Education

Career education is generally a misunderstood term in education today. Many of the goals of career education programs have eluded program evaluators. Educational interest groups and individual teachers with pet programs have descriptions of what they consider to be career education and claim its success (Torrence, 1979; Hoyt, 1979). As pointed out in the introduction, many types of programs have been implemented in the name of career education.

In an attempt to clarify the goals and components of career education, Hoyt (1979) points out the basic goals, activities, and responsibilities both for career education and those involved with it. Ten specific goals that Hoyt (1979, pp. 2,3.) outlines for the teacher are:

1. Seeking to improve academic achievement through using a "career emphasis" as a vehicle, to:
 - a. introduce meaningfulness to the teaching/learning process... emphasizing that one of the reasons for learning the subject matter is that people use it in their work.
 - b. use of a positive approach through rewarding students.
 - c. introduce variety into the teaching/learning process through

utilizing the personnel and physical resources of the broader community ...

2. Consciously and conscientiously provide rewards to students who exhibit and practice ... basic good work habits
3. Combining a cognitive and experimental approach in the teaching/ learning process through emphasizing the dual desirability of "doing to learn" and "learning to do."
4. Helping students acquire decision making skills through using a project activity oriented approach ...
5. Systematically attempting to reduce biases students may have with respect to race, sex, or handicapping conditions in ways that will maximize freedom of choice for all persons.
6. Helping students discover ways in which the subject matter being learned can be valuable to students in productive use of leisure time.
7. Helping students discover and develop a meaningful set of work values through allowing them to observe, study, and discuss work values among persons employed in various occupations.
8. Helping students become aware of and understand the basic nature of a variety of occupations while simultaneously helping students understand the educational requirements essential for success in them.
9. Helping students become more knowledgeable regarding the free enterprise system, including understanding of both economic education and of organized labor.
10. Helping students think about and consider possible career choices that may be possible for them and important to them.

Hoyt's main emphasis for teachers is on career education that is infused into regular classroom subject matter so as to act as a "motivational bridge that will increase student ~~interest~~ in learning the subject matter" (Hoyt, 1979, p.

3). In attempting to provide career education as part of an overall guidance program, the goals of this present study attempt to meet many of Hoyt's goals for teachers, but in a separate rather than infused way. Of Hoyt's first four methodological goals, a and c of goal one and goal four were part of the present study. Also goals five, six, eight and ten were addressed by this study as can be noted in the lesson plans used to deliver the career education unit (Appendix

A). Along with teachers, Hoyt seeks to involve all those who have a role in educating students about careers, including school board members, administrators and supervisors, counsellors, community organizations, parents and district coordinators. In enumerating a total of 53 different roles these actors must perform, Hoyt claims that "the extent that some or most of these roles and functions are not being performed, then it can be questioned whether or not what is being evaluated can truly be said to be career education" (Hoyt, 1979, p. 7). Having said this, he further identifies (Hoyt, 1979, pp. 7-8) the goals of career education as producing individuals who, when they leave school (whenever that is) are:

1. competent in basic academic skills required for adaptability in a rapidly changing society
2. equipped with good work habits
3. equipped with a personally meaningful set of work values that furthers their desire to work
4. equipped with career decision-making skills, job hunting skills, and job-getting skills
5. equipped with a degree of self understanding of educational-vocational opportunities sufficient for making sound career decisions
6. aware of means available to them for continuing and recurrent education
7. either placed or actively seeking placement in paid occupation, in further education or in a vocation consistent with their current career decisions
8. actively seeking to find meaning and meaningfulness through work in productive use of leisure time
9. aware of means available to themselves in changing career options -- of societal and personal constraints impinging on career alternatives.

Research on Career Education Options

In order to reach some or all of the goals enumerated by Hoyt (1979), career

educators have devised many different delivery systems. In the United States during the last few years, an effort to evaluate career education programs has resulted in conflicting findings (Bonnet, 1979). Such research has also led to the establishment of more stringent criteria for evaluating career education projects. In the future this should lead to research studies that will identify "activities that have produced verifiable teacher and learner outcomes" (Baker, 1979, p. 9) that are attributable to career education treatments. For the present, however, there continues to be inconsistent evidence as to the effectiveness of career education in meeting its stated goals. In Canada, similar results are evident, but less research is being reported.

In two recent studies (Hardie, 1978; Topping, 1979) different results were found for programs with similar aims that were evaluated using similar measures, but using different short-term presentations.

Hardie (1978) developed a short-term career education unit with the goal of increasing individual career maturity. She used a pretest-posttest design with the Career Maturity Inventory as a criterion variable. The posttest scores were adjusted using the pretest scores as a covariate and in the resulting analysis of covariance she found statistically reliable effects in favour of the experimental group on the Self Analysis and Occupational Information subtest. Analysis of the other three subscales showed that there were no reliable effects attributable to participation in the career education program. Her study also showed no statistically reliable difference in career maturity scores between boys and girls. However, in comparing grade point average with measured career maturity competencies, all but one comparison yielded a positive correlation (the correlations ranged from .120 to .392) with four of the five being reliably greater than zero ($p < .05$). The results of this study though positive, were not overly significant. Since this study was developed, taught, scored and evaluated

by the researcher, it may not be free of bias. Also there was a lack of true random sampling of the 95 participants in the study which could affect the results.

Using a pretest-posttest design to investigate a career education unit and work experience, Topping (1979) was not able to demonstrate similar results. The study used a modified approach to the Canada Employment and Immigration Commission program Creating a Career (Davison and Tippet, 1977). There was no statistically reliable increase in either career maturity or attitude toward school as measured by the School Sentiment Index. The study also showed no statistically reliable difference between those involved in a placebo career education unit or a no-treatment control group. Topping (1979) followed established research design procedures and produced inconclusive results. Thus, this study adds fuel to the argument for the inconclusiveness of results from career education.

In evaluating career maturity levels for 240 grade six and eight students, Omvig and Thomas (1977) found statistically reliable results related to sex differences and career education treatment. Using a posttest design they found that both sixth and eighth grade girls had consistently higher mean scores on CMI tests as compared to boys, with most of these differences being reliable (Omvig and Thomas, 1977). They also found that girls and boys in both grades involved in career education had higher group means than non-career education students with a majority of these ratios being statistically reliable. However, this study has limited generalizability as the year-long integrated career education program was not clearly articulated and would be difficult to replicate. The Hardie (1978) and Topping (1979) studies suffer from similar problems, but to a lesser degree.

In an earlier study Omvig, Tulloch and Thomas (1975), using a

pretest-posttest design with 290 sixth and eighth grade students, found consistent increases in career maturity attributed to a career education treatment. Statistically reliable findings in support of the program were found in four of five analyses. These were occupational knowledge for the sixth graders, occupational planning for both sixth and eighth graders, and attitude for the eighth graders. They concluded that career education had a positive effect on increasing students' levels of career maturity. Again, however, their career education treatment was not operationally consistent for each group, and was integrated into the general curriculum, making it difficult to replicate.

Positive results on increasing career maturity through a short term counselling program were reported by Flake, Roach, and Stenning (1975). They used a pretest-posttest design with 17 grade ten students identified as below the mean of 51 other students on the CMI Attitude Scale and Self Appraisal Scale. This treatment group demonstrated a reliable increase ($p < .02$) in the combination of the Attitude Scale and the Self Appraisal Scale compared with 19 randomly assigned control group students. However, a statistically reliable increase was not found on the Attitude Scale separately, but was on the Self Appraisal Scale ($p < .01$). This short term counselling program consisted of three sessions totalling one and one-half days that spanned six weeks. The selective use of Career Maturity Inventory subscales as well as the corresponding shorter test period may have influenced the results by making students less bored by the test taking time than in the Topping (1979) or the Hardie (1978) study. The writers felt that the combination of two personal interviews and a testing session demonstrated that a short term career counselling program can affect career maturity as measured by the CMI scales. In doing so Flake, Roach and Stenning (1975) "support Crites' conclusion that career maturity as a developmental process can be measured and facilitated through counselling" (p. 79).

Walsh (1979) cites a number of career education interventions designed to enhance career maturity. Of relevance to this study was the work of Enger and Jackson (1978), which was designed to teach career decision making skills. Program students were reliably higher on the CMI Attitude Scale than control students after completing the program. This effect was stronger with non-academic students than academic ones. Students also reported the program as useful in evaluating future career choices.

Findings such as those recorded by Hardie (1978), Topping (1979), and others reviewed above reflect results reported by Bonnet (1979). The results of 37 career education programs were evaluated on the basis of Hoyt's (1979) goals for career education. In assigning studies to appropriate goals, Bonnet was only able to demonstrate success of career education in the areas of "career knowledge and career decision making skills" (Bonnet, 1979, p. 23). However, the evidence suggested that career education "strengthens youngsters' desire to work and tentative indications that it results in greater internality of locus of control" (Bonnet, 1979, p. 83).

Evaluations of career education often are based on students' reports of perceived value and instructors' perceived outcomes. Such information should be regarded as simply the subjective views of participants in the activities and not objective evidence of program effectiveness. While it is not possible to compare many of these programs because methods vary, it is possible to identify some of the approaches to career education in the field. One popular intervention is that of a one-shot career information day, during which students have the opportunity to listen to several speakers from different career areas. Proponents of such an activity point to the need "to present a career information education process to the students" (Hamilton, 1975, p. 123). Through such a process it is assumed that students will gain in general knowledge and

thus should develop increased career maturity. Another one-shot career guidance approach is that of interest testing, aptitude testing or both, with simple reporting of results to students. Zenner and Schnulle (1976) reported on the use of the Holland Self-Directed Search (Holland, 1972), and the Holland Vocational Preference Indicator (Holland, 1959). In testing 959 high school students they found that students who took the tests evaluated the experience as positive, were considering more occupational alternatives and selected occupations most consistent with their personality traits. They also reported less need to see a counsellor immediately than did control group students. Such findings would be consistent with the goals of Occupational Information and Goal Selection in the Career Maturity Inventory.

The Present Study

The present study assembles a number of these components of career education following a pattern of activities in Creating a Career (Davison and Tippet, 1977). The decision to place the career education unit in the grade 11 guidance class was one of appropriateness with the goals of Guidance 11, as well Super's tentative substage of development mentioned earlier. At this point students consider needs, interests, capacities, values and opportunities related to alternative careers. These alternatives lead to tentative choices which are tried out in fantasy, discussion, part-time work and school subjects. Also included in the study was the work of Holland in identifying career alternatives through interests by the use of the Self Directed Search (Holland, 1972). In reviewing career paths of both the instructor and others, students were shown the life stages each person passes through, based on Super (1978). As well, the place of chance in affecting careers was shown, corroborating the sociological theories while showing that choice is a major component of career options

available to young people. Like Creating a Career (Davison and Tippett, 1977), then, the career education unit of this study was eclectic in theoretical base, provided for students in the tentative substage of the exploration stage outlined by Super (1963, 1978), and was made available to students in the classroom setting. The component of work experience, or some form of cooperative education, was not included because of limited resources available to the study and the researchers desire to evaluate a short-term career education unit that approximated those presently being used in the schools. The question of usefulness and the value of such an educational attempt should be evaluated on the program's ability to reach goals set by the educators who designed it. Such goals should be compatible with other studies in the area of career education and the researcher should identify how, and by what magnitude, career maturity was affected.

Hypotheses. According to suggestions by Crites (1973) for further research and from the many forms of career education now in use, it is obvious that research on the effects of career education is necessary. Educators must continually ask themselves if their materials or programs are effective. With this question in mind, this study investigated an eight-hour career education package combined with a career day and secondary information day, where postsecondary institutions informed students of the options available to them. The goal was to see if career maturity could be developed through a combination of them or as single components.

The effects of an eight-hour planning unit, a career day and a post secondary information day as measured by the Career Maturity Inventory Attitude Scale, the Career Maturity Inventory Competence Test, the Career Planning Questionnaire, and Achievement Test fall into three main questions by group and by sex.

Career Maturity Subtests

Will career maturity increases as measured by the Career Maturity Inventory Attitude Scale and Competence Test be on a descending scale according to the amount of treatment per group?

Career Planning Questionnaire

Will knowledge of material covered in the career education unit as measured by the Career Planning Questionnaire Achievement Test be a descending scale according to treatment group?

Sex Differences

Will there be differences between the girls and the boys in pre and posttest career maturity levels and the achievement test scores?

CHAPTER III

METHOD

Participants

The sample for this study was one half of the grade 11 class of a senior secondary school located in Surrey, a suburb of Vancouver, B.C., Canada. There were 824 students in the school, of which 450 were in grade 11. Students were from mixed socio-economic backgrounds with approximately 50% of the families of long term residence in the area. The remaining group was made up of either new permanent residents to the area or transient families. Students from this school had been exposed to varying amounts of career information during their junior high school education. Students were identified by the junior high school they had attended prior to high school in data analyses to investigate possible differences in pretest career maturity which might influence their reaction to the program introduced in this study. However, different junior high school programs were not investigated.

The students were drawn from four different blocks of mandatory Guidance 11 classes and were maintained in separate classes for girls and boys. Guidance 11 was part of the Physical Education 11 class time and normally was used to discuss health, first-aid and course planning for the next grade. The counsellors in the school, in cooperation with the district vocational counsellor, recognized the need for career education and the evaluation of the effectiveness of such programs. One counsellor arranged to teach the career education unit to all Guidance 11 classes over the school year and arranged the career day. The other counsellor assisted in arranging the post-secondary information day. The counsellor who taught the career education unit was completing a Masters degree in Counselling specializing in career education at

another university.

The classes used for the study were in the middle of their fall semester. This is not a true random sample of students since they were placed into these classes according to how other parts of their schedule worked together with their physical education class. The assignment of treatment to each class was done on a random basis.

A total of 222 students began the study. Five students were eliminated for missing four or more classes, two more were eliminated for having missing data. Eight classes, ranging in size from 21 to 30 students, with an average 27 students, were involved. Only one student objected to participating in the study. He wrote the pretest and the posttest but his scores were not recorded nor was he numbered in the sample.

Treatment

The major treatment components of this study were an eight hour career education unit, a career day, and a post-secondary information day. The classes not involved with career education continued in a regular program of physical and health education.

The career education unit was comprised of components from Creating a Career (Davison and Tippett, 1977), such as self appraisal, job hunting information, the Self Directed Search vocational guidance test (Holland, 1972) and course planning information for students to make tentative choices for their grade 12 year (see Appendix A). The career day was designed to give students a chance to listen to and speak with representatives of three different career areas for 45 minutes each. These were chosen privately by students from the 35 speakers available for the day. The post-secondary information day was an opportunity for students to hear representatives from local and regional

colleges. Interested students also were able to speak with these individuals privately about their personal concerns. Students in the regular guidance program, which constituted the comparison group, discussed topics of health and participated in regular physical education classes. They did not participate in discussion on careers.

Career education unit. This treatment is fully outlined in Appendix A, but will be briefly described here. The unit includes important aspects of Creating a Career (Davison and Tippett, 1977) developed by Employment and Immigration Canada. The eight lessons included: (1) information about why people work; (2 and 3) a vocationally-oriented personal self-assessment covering strategies of personal evaluation and inventories used for gathering this information; (4) an opportunity for students to explore their aptitudes and interest patterns using the Holland Self-Directed Search (1972) and consider how these interests lead to occupational alternatives; (5) a session on how Canada Employment and Immigration Commission services, job hunting tips, and community resources can aid in occupational exploration; (6) an assignment to research two occupations thoroughly; (7) writing a resume to present to a prospective employer; and (8) tentative planning of the students' remaining grade 11 and 12 courses.

Creating a Career as developed by Davison and Tippett (1977) is a curriculum-based vocational guidance package designed to give students information on and develop their skills in career planning, as well as to assist them in developing strategies for the job search. The program components include two test guide books, a student work book, an instructor's manual and an occupational exploration kit, which has since been replaced by the Index to Canadian Occupations (Advanced Development Division, Occupational Analysis and Development Branch, 1978). The program is eclectic in theoretical orientation

and draws from the works of Ginzberg (1963), Holland (1959, 1966), Tiedman (1961), Tiedman and O'Hara (1963), and Super (1957). A full course using Creating a Career can involve 70 to 100 hours of instruction. However, for the purpose of this program components from the Career Planning section were condensed to eight lessons. This is similar to the procedure used by Topping (1979).

The choice of lessons and materials was based on three factors. These included the time available for the program, findings of the Breton (1972) report that students lack knowledge about themselves, knowledge about the world of work and decision making skills, and a desire to approximate existing programs being offered in local high schools, the goal being to evaluate the effectiveness of such programs. The condensation of the program probably limits somewhat the impact on career maturity, but because of the sampling of exercises and information from the Creating a Career units a fairly complete coverage of topics central to career development was provided.

Students self-rated their aptitudes instead of writing the lengthy General Aptitude Test Battery. This was done using the guide provided in the Index to Canadian Occupations (Advanced Development Division, Occupational Career Analysis and Development Branch, 1978). These self ratings of basic vocational aptitudes range from superior to poor and are clearly described to assist students in assessing themselves. The Holland Self-Directed Search (1972) was used in place of the Canadian Occupational Interest Inventory as a means of accessing job clusters. The self-ratings were used for time economy based on findings of field tests for the Canada Employment and Immigration Commission computer assisted career planning tool - C.H.O.I.C.E.S. - which indicated that self-rating of aptitudes were reliable and consistent with test results, (Casserly, 1978). The Self-Directed Search was used to replace the cumbersome

Occupational Explanation Kit (Davison and Tippett, 1977), the lengthy Index to Canadian Occupations (Advanced Development Division, Occupational Career Analysis and Development Branch, 1978) and the Canadian Occupational Interest Inventory (Canada Employment and Immigration Commission, 1975), which was not available. As part of their introduction to community resources for occupational exploration, the coordinator of the Youth Employment Centre also gave students a brief overview of the process involved in the job search section of Creating a Career. One of the two remaining lessons centered on taking stock and compiling information for writing resumes, based on units 10, 11 and 12 of Creating a Career. The final lesson included a review of the concepts of career education including career path, decision making skills, location of information and goal setting. Students were also instructed in the entry requirements for major training institutions and allowed to fill out tentative selection forms for the remainder of their grade 11 and 12 courses.

One counsellor instructed all four classes of the two treatment groups receiving career education, the career unit group and the full treatment group. The remainder of the students continued with their regular classroom teacher through the program.

Career day. During this day each of the students in the treatment groups, in conjunction with the entire school, had the opportunity to listen to three guest speakers selected from a larger group of speakers representing 35 different career areas. In 45 minute sessions the speakers discussed their work, the training necessary, salary, and future outlook for their career area. Students also had the opportunity to ask questions of the speakers after their presentation. All students prior to the career day were surveyed as to the career areas they would like to hear about and speakers were allotted one, two

or three sessions so that all interested students would have the opportunity to hear their presentation. A copy of the survey and final speakers lists are available in Appendix B and Appendix C, respectively.

Post secondary information day. During this one-hour period students from treatment groups 1 and 2 had the opportunity to explore training routes for occupations they had chosen to study. All students listened to general presentations by counsellors from local universities and colleges. Some students were then able to make appointments with specific counsellors to discuss entry requirements and course planning. A record was not kept of which students participated in these interviews. This was due to a misunderstanding of the need for such information.

Guidance classes. No attempt was made to standardize the presentation of the guidance classes not involved in the career education treatment group. However, during the period of the study, students continued in a program of regular physical education games and fitness activities as well as well as discussion classes on health and first-aid but did not discuss careers.

Instruments

The Career Maturity Inventory (C.M.I.) is an instrument designed to measure career choice competencies and career choice attitudes as part of the construct called "career maturity." This construct was introduced by Super (1955, 1957) and reported in Crites (1973a) as "the place reached on the continuum of vocational development from exploration to decline" (Super, 1955, p. 153 cited in Crites 1973a, p. 6). The C.M.I. is divided into two sections: the Attitude Scale and the Competence Test.

The Attitude Scale measures five dimensions: 1) involvement in the choice process, 2) orientation toward work, 3) independence in decision making, 4) preference for career choice factors, and 5) conceptions of the choice process (Crites, 1973a). The Attitude Scale is composed of 50 true/false statements chosen from 1000 original items designed to define each of the five attitudinal dimensions. Crites describes the principal usefulness of the C.M.I. Attitude Scale to be "screening individuals for counselling and evaluating the outcomes of career education and other didactic programs and interventions" (Crites, 1973a, p. 11).

In light of the developmental nature of career maturity and the short term intervention of most career education programs, this claim may be somewhat general. Based on the standardization samples of 2822 Iowa grade 6-12 students in 1965, the Attitude Scale "consisting of fifty monotonically grade-related items stated in both the first and third person . . . differentiates between levels in the upper elementary and secondary educational systems, largely irrespective of sex and school variance" (Crites, 1973a, p. 14).

Internal consistency and test-retest reliability coefficients were examined by Crites. Kuder-Richardson Formula 20 internal consistency coefficients averaged .74 (ranging from .70 to .84) based on sample sizes of 255 to 1328 (Crites, 1973a, p. 14). A stability coefficient of .71 for a sample of 1,658 grade 6 to 12 students was found when they were tested and retested over a one year interval (Crites 1973a, p. 14). Topping (1979), using alpha coefficient, found internal consistency of .78 and .68 respectively with 93 grade 10 students in a pretest-posttest study. These were similar to data reported by Crites (1973a).

Validity of the Attitude Scale was reported for content, criterion-related and construct validity. As reported by Crites (1973a, p. 15), content validity was ensured by the reduction of the original 1000 items to 100 according to Flannigan's (1951) initial standardization procedure. Also, Crites (1973a) reports a 74 percent agreement by ten expert judges on which response they considered to be most mature for each item (Hall, cited in Crites 1973a). Crites (1973a) cites three studies which support the criterion-related validity of the C.M.I. Attitude Scale. Bathory, using groups of ninth ($n = 79$) and twelfth ($n = 58$) graders, found correlations of .30 and .31 respectively, between the C.M.I. Attitude Scale and the Occupations Aspirations Scale (Miller and Haller, cited in Crites 1973a). In a study comparing scholastic aptitude and the Attitude Scale, Hollender (1964) found that regardless of aptitude level students scoring higher on the Attitude Scale made more realistic career choices. Also, Cooter (cited in Crites 1973a) obtained a correlation of .38 ($p < .01$) between the C.M.I. Attitude Scale and the Gibbons and Lohnes' Readiness for Vocational Planning Scale.

Construct validity has been demonstrated by Crites (1973a) in the areas of response bias, correlation with other variables, and experimental manipulations. As reported by Crites (1973a), Carek concluded that response set correlated .15 with the Marlow Crowne Social Desirability Scale (cited in Crites 1973a), thus showing that response set had little influence on Attitude Scale scores. Also Shirts (cited in Crites 1973a), in examining changes in responses by students in a test-retest situation, found no reliable response style of the Attitude Scale.

Crites (1973a) reviewed experimental studies by Asbury (cited by Crites 1973a), Bovee (cited in Crites 1973a) and Gilbrand (cited in Crites 1973a), all of which were attempts to change C.M.I. Attitude Scale scores. In these separate studies, counselled students had higher average posttest scores than

non-counselled students. Using teaching strategies to manipulate pretest-posttest Attitude Scale scores, Goodson (cited in Crites 1973a) found reliable gains in an eight week college orientation course while Schmieding and Jensen (cited in Crites 1973a) and Shirts (cited in Crites 1973a) were unable, in separate studies, to demonstrate any reliable effects for a 22 hour occupations class or for playing a career game. According to Hanna and Neely (1978), the C.M.I. Attitude Scale is a "leading instrument in its field," (p. 114), but may not possess the reliability claimed by Crites (1973a). These authors found similar scores to Crites (1973a) norms with 273 ninth grade students, but in reporting split half reliability estimates (K-R 20) of .70 and .71, they feel there is doubt as to the reliability of the C.M.I. Attitude Scale to assess individual differences. Crites (1973a), however, supports the validity and the reliability of the Attitude Scale, but does recognize the need for further longitudinal studies.

Competence Test. The C.M.I. Competence Test is a more recent test than the Attitude Scale. It has five subtests, each consisting of 20 items answered on a multiple choice basis. Development of the C.M.I. Competence Test followed the same pattern as the Attitude Scale. The Competence Test was constructed to assess "comprehension and problem solving abilities as they pertain to the vocational choice process" (Crites, 1973a, p. 9). The five parts of the test are: 1) Knowing Yourself-Self Appraisal, 2) Knowing About Jobs - Occupational Information, 3) Choosing a Job - Goal Selection, 4) Looking Ahead - Planning, and 5) What Should They Do - Problem Solving.

Reliability and validity studies on the Competence Test are in the research stage. However, Crites (1973a) reports internal consistency KR20 coefficients ranging from .72 to .90 with two exceptions for standardization samples of 120

to 475 grade six. Only the grade six and seven Problem Solving subtests were divergent from other samples (.58 and .63). Crites (1973a) attributes these anomalies to students of this age being in a stage of coping with decisional problems and therefore not answering in a consistent fashion. Topping (1979), testing 93 grade 10 students, found alpha coefficients ranging from .46 to .72 (average .61) on a pretest and .59 to .83, (average .70) on a posttest following career education. These lower figures suggest the need for further reliability studies.

Data on content, criterion and construct validity are reported by Crites (1973a). Through monotonically relating items of the test to grade as an index of time and career development, and reducing original items for each subtest from 30 to 20, Crites (1973a, p. 33) supports the content validity on the basis of "rational - empirical test methodology" even though no studies are cited in support of this statement. Criterion-related validity was assured for the Competency Test through selecting only items which were monotonic functions of time. The grade to grade distribution overlap of the standardizing sample on the subtests ranged from 33 to 56 percent, with a median of 43 percent (Crites, 1965; 1973a). Product-moment correlations among the subtests ranged from .25 to .73 with a mean of .54. Since these correlations are all reliably larger than zero ($p < .01$), Crites (1973a) recognizes the need for further analytic studies of the subtests. Westbrook (1976) found subtests of the Competence Test to be inter-correlated between .46 and .66 (mean = .60). Westbrook (1976) also found the C.M.I. Competence Test more highly related to another career choice competency scale, the Cognitive Vocational Maturity Test, than the C.M.I. Attitude Scale in both total score (.88 compared with .64) and mean subscale scores (.57 compared with .52) respectively. By this comparison he concluded that the C.M.I. Competence Test measured a different construct than did the

C.M.I. Attitude Scale.

Self-Directed Search (S.D.S.) The Self-Directed Search (S.D.S.) (Holland, 1972) is an adaptation of the Vocational Preference Inventory (Holland, 1965). This test is based on Holland's (1959,1973) theory of vocational choices. He presents six stereotypic types of people: realistic, investigative, artistic, social, enterprising, and conventional. Individuals are compared with these stereotypes by 18 different subtests, including scales of activities, competencies and occupations. Students score the tests themselves, arrive at a three letter code (first letters for the six categories) and search the Occupations Finder, a list of job titles related to personality types, of the S.D.S. on the basis of this code. Students are then able to use these broad occupational titles to access printed material, find related jobs and look at those career alternatives based on their self-assessed abilities. Holland (1972) reports internal-consistency coefficients for the six scales to be in the range of .67 and .94. The main use of the Self-Directed Search is providing students and others with information to consider regarding occupational alternatives. Zenner and Schnuelle (1976) found that, compared with a control group, students evaluated positively the use of the S.D.S., reported being more satisfied with their current career choice after the S.D.S., and were considering more occupational alternatives after the S.D.S. The S.D.S. was not used as a dependent variable in this study, but as a tool for student self-assessment.

Questionnaire and achievement test. Students in each treatment group were asked to complete a questionnaire (see Appendix D) at the end of the program, which gave them an opportunity to express which activities and which of the

lessons in the program they enjoyed, which ones they did not enjoy, whether they remembered their Holland code, and which career day sessions they attended and found beneficial. The remainder of the questionnaire, an achievement test, measured students' knowledge of the material presented during the career education unit. Thirty-six multiple choice questions were drawn from the lessons and then organized randomly. They tested the information given and the teaching objectives set for each of the eight lessons in the career education unit. Four questions were selected from each of the eight lessons. Three general questions were added while one item was inadvertently repeated, but was omitted for scoring purposes. This assessment of students' knowledge of the material was designed to compare with changes in their scores on the Career Maturity Inventory and to demonstrate objective evaluation of learning that took place.

Procedure

The time line of the research spanned eight weeks (see Table 1). Initially all students in the school were surveyed regarding their preferences regarding career day speakers. Then two weeks later those students involved in the study were pretested with the Career Maturity Inventory on two separate days. On the first day students took the C.M.I. Attitude Scale and two subtests of the Competence Test. They finished the Competence Test the following day and were allowed to talk quietly or go to the cafeteria when they had finished. Students seemed to take a serious approach to the pretesting even though there was some disruption due to changing rooms to accommodate both classes for the test administration. Students were then involved in one of four treatment groups. These were: 1) the career education unit group, who received only the career education unit prior to Career Maturity posttesting, 2) the full treatment group, who received all elements of the program, 3) the partial treatment

group, who received only the post-secondary information day and the career day prior to the Career Maturity Inventory posttesting, and 4) the no treatment group. Each treatment group was made up of one boys' class and one girls' class. These classes remained intact during the career education program. Those students in the career education unit treatment, and full treatment groups, received eight classroom sessions. The three week period for the career education unit was necessary because students attended guidance on alternate days. During the unit students wrote the Self-Directed Search which was self scored. The results were individually by students to explore career alternatives based on their three letter S.D.S. code. No attempt was made to collect data from the S.D.S. except to see if students recalled their primary S.D.S. three letter code. Students were posttested with the Career Maturity Inventory on two separate days as in the pretest. This was done either after the career education unit or after the career day and post secondary information day according to their treatment group. Some students did not take the posttesting as seriously. This was noticed more with the boys than with the girls. A separate day after the posttesting was used to administer the Career Planning Questionnaire and achievement test to all students in the study. All testing was done by two counsellors, one counsellor from the school and one district counsellor.

TABLE I
Design of Study

Group	Sub-jects	Oct 10	Oct 24,	Oct 24,	Nov 21,	Nov 23	Nov 28	Nov 29,	Nov 30-
	N	Career	Pretest	Nov 20	Nov 22	Career	Post-	Post-	Dec 5
		Day	Career	Posttest	Day	Sec Day	test	test	Career
		Survey	Ed Unit						Planning
C	B								Quest-
									ionnaire
Career Unit	22 29	x	x	x	x	x			x
Full treatment	26 29	x	x	x		x	x	x	x
Partial treatment	26 23	x	x			x		x	x
No treatment	28 28	x							x

CHAPTER IV

RESULTS

This chapter is comprised of five parts. The first section accounts for missing data. The second section reports the reliability of the dependent variables. The third section describes participants at the pretest and posttest. The fourth section identifies the junior high school feeder schools to see if the students differ accordingly at the pretest. The fifth section reports on student evaluation of the program.

Missing Data

The number of students in each treatment group remained constant by eliminating 5 students who missed 4 or more classes. Of the 216 students left, 2 cases (0.9 percent) were missing data and were deleted from the study. One student objected to participating in the study. His scores were not recorded or numbered in the sample.

Reliability of Dependent Variables

Alpha internal consistency coefficients were calculated for all scales at both pretest and posttest (see Tables II and III). The coefficients for the C.M.I. Attitude Scale and five Competence Test subtests were similar to those reported by Flake, Roach, and Stenning (1975), Hanney and Neeley (1975), Hardie (1978), Jennings (1976), Topping (1979), and Westbrook (1976). When compared with the information given by Crites (1973a) these coefficients are similar to the grade 11 level. On the pretest, the alpha coefficients were lower for the Attitude Scale as well as the Goal Setting, Planning and Problem Solving competence subtests. However, on the posttest all subscales were similar to Crites (1973a) except the Attitude Scale and the Self Appraisal subtest.

TABLE II
Reliabilities and Intercorrelations of C. M. I. Subtests at Pretest

C. M. I.	1 Attitude	2 Self Appraisal	3 Occupational Information	4 Goal Selection	5 Planning	6 Problem Solving
1. Attitude	.63 (.77)					
2. Self Appraisal	.66	.77 (.79)				
3. Occupational Information	.67	.68	.84 (.88)			
4. Goal Selection	.62	.67	.76	.79 (.87)		
5. Planning	.58	.67	.68	.72	.80 (.90)	
6. Problem	.50	.56	.62	.56	.57	.68 (.78)

a diagonal values are alpha internal consistency coefficients.

b bracketed figure on diagonal represents Crites' (1973a) corresponding internal consistency reliability (KR20) for a grade 11 sample.

TABLE III
Reliabilities and Intercorrelations of C. M. I. Subtests at Posttest

C. M. I.	1	2	3	4	5	6
	Attitude	Self Appraisal	Occupational Information	Goal Selection	Planning	Problem Solving
1. Attitude	.68 (.77)					
2. Self Appraisal	.73	.88 (.79)				
3. Occupational Information	.75	.79	.92 (.88)			
4. Goal Selection	.75	.79	.84	.87 (.87)		
5. Planning	.65	.73	.76	.77	.89 (.90)	
6. Problem	.63	.66	.67	.69	.62	.81 (.78)

a diagonal values are alpha internal consistency coefficients.

b bracketed figure on diagonal represents Crites' (1973a) corresponding internal consistency reliability (KR20) for a grade 11 sample.

The alpha coefficients of internal consistency for the Achievement Test using the 36 multiple choice Achievements Item Test was 0.83.

Description of Treatment Groups and Sex Groups at Pretest and Posttest

A pretest comparison of groups to Crites (1973a) norming sample is presented in Table IV in order to show relative career maturity of students at the pretest. The distribution of scores for the study group was compared with Crites (1973) norming scores. This was done by taking $\frac{X \text{ Down} - X \text{ Crites}}{S.D. \text{ Crites}}$. Resulting two scores were then transformed into a percentile score. This indicates the percentile rank of the current sample. Notice that for the Competence Test subtests the current sample is within ten percentage points of Crites (1973). However, for the Attitude Scale this difference is somewhat larger.

To test the hypothesis that career education would increase career maturity, it was necessary to establish that initial levels of career maturity did not differ among the four groups examined in this study. The pretest scores of each group were examined for the Career Maturity Inventory Attitude Scale and Competence Test. These scores were identified by group and sex. The resulting means and standard deviation of scores for each group are recorded in Tables V. Analyses of variance for groups (4 levels) by sex (2 levels) are recorded in Table VI. F-ratios were interpreted at $p < .05$. The exact level of probability associated with each F-ratio is reported. A similar report of the descriptive statistics and analyses of variance of posttest scores is presented in Tables VII and VIII, respectively. These tables also include the statistics for the achievement test.

In examining the statistics of Table V and VI it is obvious that there was a statistically reliable difference among the groups as well as between the sexes.

TABLE IV
Pretest CMI Scores and Crites' Norms

	Crites, 1973a, 1978 Grade 11 Norms		Present Study All Students Pretest		Standard Score Percentile Comparison
	M	S.D.	M	S.D.	
Attitude Scale	36.02 (n=2203)	5.24	33.92 (n=214)	7.58	34 %tile ^a
(1) Self- Appraisal	13.15 (n=7330)	3.80	12.97 (n=214)	3.92	48 %tile ^b
(2) Occupational Information	15.44 (n=7399)	3.92	14.76 (n=214)	4.21	43 %tile ^b
(3) Goal Selection	12.93 (n=7317)	3.75	12.99 (n=214)	3.89	49 %tile ^b
(4) Planning	13.00 (n=7165)	4.24	11.91 (n=214)	4.15	40 %tile ^b
(5) Problem Solving	10.30 (n=6895)	3.60	9.96 (n=214)	3.54	46 %tile ^b

a. compared with Crites, 1973a

b. compared with Crites, 1978

TABLE V
Pretest Career Maturity Scores by Groups

Dependent Variable		Group				Total
		Career Edu- cation	Full Treat- ment	Partial Treat- ment	No Treat- ment	
Career Maturity Inventory						
Attitude Scale						
Boys	M	33.13	32.42	28.04	34.63	32.27
	S.D.	8.10	8.19	13.62	4.18	9.04
Girls	M	34.62	37.33	34.85	36.53	35.84
	S.D.	5.26	2.78	5.16	5.07	4.81
Total	M	33.75	34.40	31.65	35.58	33.92
	S.D.	7.05	6.96	10.54	4.71	7.58
1. Self Appraisal						
Boys	M	11.07	13.10	10.17	12.20	11.72
	S.D.	4.52	3.31	5.78	3.42	4.36
Girls	M	15.29	14.62	14.11	13.96	14.42
	S.D.	2.05	2.01	2.99	3.17	2.70
Total	M	12.80	13.71	12.25	13.08	12.97
	S.D.	4.23	2.93	4.89	3.39	3.92
2. Occupational Information						
Boys	M	12.53	14.61	13.38	15.30	13.99
	S.D.	5.50	3.88	6.66	3.77	5.04
Girls	M	16.10	15.90	15.19	15.60	15.66
	S.D.	2.42	2.82	2.59	3.08	2.74
Total	M	14.00	15.13	14.33	15.45	14.76
	S.D.	4.80	3.52	4.97	3.41	4.21

TABLE V (continued)

Pretest Career Maturity Scores by Groups

Dependent Variable		Group				Total
		Career Edu- cation	Full Treat- ment	Partial Treat- ment	No Treat- ment	
3. Goal Selection						
Boys	M	10.9	13.45	11.08	13.63	12.34
	S.D.	4.37	3.82	6.52	3.86	4.67
Girls	M	13.71	14.10	13.00	14.17	13.74
	S.D.	2.15	2.90	2.47	2.56	2.54
Total	M	12.06	13.71	12.10	13.90	12.99
	S.D.	3.85	3.46	4.86	2.98	3.89
4. Planning						
Boys	M	10.17	12.55	9.75	11.93	11.78
	S.D.	4.79	3.70	6.35	3.89	4.77
Girls	M	11.76	12.95	12.96	13.13	12.76
	S.D.	2.77	2.85	3.86	2.66	3.09
Total	M	10.82	12.71	11.45	12.53	11.91
	S.D.	4.12	3.36	5.38	3.36	4.15
5. Problem Solving						
Boys	M	9.60	9.65	8.71	8.83	9.23
	S.D.	4.06	3.78	4.97	3.53	4.04
Girls	M	10.38	11.67	10.70	10.60	10.81
	S.D.	2.27	2.65	2.89	2.57	2.62
Total	M	9.92	10.46	9.76	9.72	9.96
	S.D.	3.43	3.49	4.09	3.19	3.54

TABLE V (continued)

Pretest Career Maturity Scores by Groups

Dependent Variable		Group				Total
		Career Edu- cation	Full Treat- ment	Partial Treat- ment	No Treat- ment	
Total Competence Test						
Boys	M	54.27	63.35	53.08	61.90	58.46
	S.D.	20.31	15.19	28.27	14.25	19.98
Girls	M	67.24	69.23	65.96	67.46	67.38
	S.D.	7.92	9.85	11.79	10.19	10.08
Total	M	59.61	65.73	59.90	64.68	62.59
	S.D.	17.50	13.50	21.96	12.60	16.74

Note: On all variables, the sample sizes are as follows:
 Career Education group: 21 girls, 30 boys;
 Full Treatment group: 21 girls, 31 boys;
 Partial Treatment group: 27 girls, 24 boys;
 No Treatment group: 30 girls, 30 boys.

TABLE VI
Pretest Analyses of Variance

Variable	Source	MS	F	p
Career Maturity Inventory Attitude Scale	Group	162.70	3.09	.03
	Sex	722.48	13.74	.01
	Group x Sex	83.51	1.59	.19
	Residual	52.60		
1. Self Appraisal	Group	27.91	2.12	.10
	Sex	415.44	31.51	.01
	Group x Sex	25.99	1.97	.12
	Residual	13.18		
2. Occupational Information	Group	24.42	1.44	.01
	Sex	146.19	8.64	.01
	Group x Sex	24.80	1.47	.23
	Residual	16.93		
3. Goal Selection	Group	55.01	3.90	.01
	Sex	107.49	7.62	.01
	Group x Sex	15.49	1.10	.35
	Residual	14.10		

TABLE VI (continued)
 Pretest Analyses of Variance

Variable	Source	MS	F	p
4. Planning	Group	42.86	2.63	.05
	Sex	132.88	8.16	.01
	Group x Sex	17.79	1.00	.35
	Residual	16.29		
5. Problem Solving	Group	9.61	0.70	.50
	Sex	143.32	11.85	.01
	Group x Sex	4.26	0.35	.79
	Residual	12.09		
Total Competence Test	Group	587.70	2.28	.08
	Sex	4401.00	17.10	.01
	Group x Sex	227.78	0.89	.45
	Residual	257.32		

Note: For all analyses: group df = 3, sex df = 1,
 group by sex df = 3, and residual = 206

TABLE VII
 Posttest Career Maturity and Achievement
 Test by groups

Dependent Variable		Group				Total
		Career Edu- cation	Full Treat- ment	Partial Treat- ment	No Treat- ment	
Career Maturity Inventory						
Attitude Scale						
Boys	M	29.83	34.84	33.13	31.17	32.22
	S.D.	11.80	5.31	11.36	11.92	10.43
Girls	M	31.14	39.33	29.41	36.97	34.17
	S.D.	13.63	2.58	14.73	5.91	11.12
Total	M	30.37	36.56	31.17	34.07	33.12
	S.D.	12.48	4.92	13.25	9.78	10.77
1. Self Appraisal						
Boys	M	8.80	11.61	10.79	10.70	10.47
	S.D.	5.24	4.10	4.72	5.45	4.96
Girls	M	13.38	15.38	11.22	14.07	13.42
	S.D.	5.89	2.50	6.01	3.48	4.88
Total	M	10.69	13.13	11.02	12.38	11.84
	S.D.	5.91	3.98	5.39	4.84	5.13
2. Occupational Information						
Boys	M	9.37	14.26	14.04	12.80	12.56
	S.D.	6.66	3.99	5.43	6.25	5.94
Girls	M	14.00	16.52	13.26	15.67	14.84
	S.D.	6.30	2.56	6.77	2.73	5.05
Total	M	11.27	15.17	13.63	14.23	13.61
	S.D.	6.85	3.63	6.13	4.50	5.65

TABLE VII (continued)

Posttest Career Maturity and Achievement

Test by Groups

Dependent Variable		Group				Total
		Career Edu- cation	Full Treat- ment	Partial Treat- ment	No Treat- ment	
3. Goal Selection						
Boys	M	8.36	12.71	12.33	10.60	10.95
	S.D.	5.15	3.68	4.83	5.49	5.07
Girls	M	12.05	14.29	11.33	13.70	12.83
	S.D.	5.91	2.33	6.12	3.24	4.64
Total	M	9.88	13.35	11.80	12.15	11.82
	S.D.	5.52	3.27	5.52	4.74	4.96
4. Planning						
Boys	M	6.27	11.58	11.96	16.13	9.90
	S.D.	4.66	5.60	4.95	5.89	5.72
Girls	M	11.10	14.62	10.19	13.80	12.41
	S.D.	5.66	2.42	6.13	3.12	4.90
Total	M	8.25	12.81	11.02	11.97	11.06
	S.D.	5.59	4.80	5.62	5.03	5.49
5. Problem Solving						
Boys	M	6.73	9.84	9.38	8.10	8.48
	S.D.	4.23	3.92	3.41	4.67	4.24
Girls	M	9.86	12.14	9.22	9.97	10.20
	S.D.	4.64	3.00	5.66	3.74	4.47
Total	M	8.02	10.77	9.29	8.10	9.28
	S.D.	4.62	3.72	4.69	4.67	4.42

TABLE VII (continued)

Posttest Career Maturity and Achievement

Test by Groups

Dependent Variable		Group				Total
		Career Education	Full Treatment	Partial Treatment	No Treatment	
Total Competence Test						
Boys	M	39.53	60.00	58.50	52.33	52.35
	S.D.	21.50	17.56	20.45	25.37	22.67
Girls	M	60.38	72.95	55.22	67.20	63.71
	S.D.	26.80	8.73	28.62	10.97	21.43
Total	M	48.12	62.23	56.76	59.77	57.62
	S.D.	25.74	15.89	24.92	20.78	22.77
Achievement Test						
Boys	M	17.93	18.48	13.75	13.30	16.01
	S.D.	7.44	5.91	5.41	5.90	6.61
Girls	M	19.57	23.67	14.70	13.67	17.32
	S.D.	3.79	4.09	4.75	4.09	5.74
Total	M	18.61	20.58	14.25	13.48	16.61
	S.D.	6.21	5.81	5.04	5.03	5.52

Note: On all variables, the sample sizes are as follows:
 Career Education group: 21 girls, 30 boys;
 Full Treatment group: 21 girls, 31 boys;
 Partial Treatment group: 27 girls, 24 boys;
 Full Treatment group: 30 girls, 30 boys.

TABLE VIII
 Posttest Analyses of Variance

Variable	Source	MS	F	p
Career Maturity Inventory Attitude Scale	Group	440.32	4.03	.01
	Sex	239.48	2.19	.14
	Group x Sex	238.27	2.18	.09
	Residual	109.16		
1. Self Appraisal	Group	75.96	3.27	.02
	Sex	485.27	20.90	.01
	Group x Sex	41.36	1.78	.15
	Residual	23.22		
2. Occupational Information	Group	139.78	4.88	.01
	Sex	267.79	9.34	.01
	Group x Sex	64.24	2.24	.09
	Residual	28.67		
3. Goal Selection	Group	105.80	4.78	.01
	Sex	186.39	8.42	.01
	Group x Sex	56.31	2.54	.06
	Residual	22.13		

TABLE VIII (continued)
 Posttest Analyses of Variance

Variable	Source	MS	F	p
4. Planning	Group	198.10	7.91	.01
	Sex	322.20	12.87	.01
	Group x Sex	107.67	4.30	.01
	Residual	25.05		
5. Problem Solving	Group	69.39	3.84	.01
	Sex	166.25	9.19	.01
	Group x Sex	24.44	1.35	.26
	Residual	18.09		
Total Competence Test	Group	2645.60	5.95	.01
	Sex	6870.63	15.45	.01
	Group x Sex	1350.10	3.04	.03
	Residual	444.66		
Achievement Test	Group	666.30	22.78	.01
	Sex	200.75	6.86	.01
	Group x Sex	60.75	2.08	.10
	Residual	38.25		

Note: For all analyses: group df = 3, sex df = 1,
 group by sex df = 3, and residual = 206

at the pretest. This occurred on the C.M.I. Attitude Scale as well as the Occupational Information, Goal Selection and Planning subtests. There was also a statistically reliable overall group difference between girls and boys (favouring the girls) at the $p < .01$ level on pretest. There were no statistically reliable interaction effects on the pretest.

On the posttest (see Table VIII), the treatment group and the sex comparisons were statistically reliably different on all variables with one exception, the sex main effect on the Attitude Scale. There were statistically reliable group by sex interaction effects on the Planning subtests, the total Competence score and the Achievement Test. Reliable F-statistics were followed by the Tukey WSD procedure with harmonic n as a post hoc analysis procedure, where statistically reliable differences were noted, (Myers, 1979) for both the pretest and posttest data.

In the pretest (see Table IX) it was found that the partial treatment and no treatment group differed reliably lower on the Attitude Scale. However, no other directional difference could be established at the pretest, even though the difference between the career education unit and the no treatment groups were close to a reliable difference on the Goal Selection section (Competence 3). Generally, the career education unit group and the partial treatment group had lower means than did the full treatment and the no treatment group, but not reliably.

On the posttest, the differences among groups were more easily noticed. The Attitude Scale had a reliable F for the group factor, but the Tukey WSD test did not identify any particular pair of means that was reliably different. The career education unit and full treatment groups were reliably different (Career Education Unit lower) on the Self-Appraisal competence subtest. The career education unit group was identified as reliably lower than the no treatment and

TABLE IX

Reliable Tukey WSD Tests for Group and Group by Sex

		mean order							
		low			high				
<u>Pretest</u>	(by group)								
	Attitude Scale	C	A	B	D				
		<hr/>							
<u>Posttest</u>	(by group)								
	Self Appraisal	A	C	D	B				
		<hr/>							
	Occupational Information	A	C	D	B				
		<hr/>							
	Goal Selection	A	C	D	B				
		<hr/>							
	Planning	A	C	D	B				
		<hr/>							
	Problem Solving	A	D	C	B				
		<hr/>							
	Total Competence	A	C	D	B				
		<hr/>							
	Achievement Test	D	C	A	B				
		<hr/>							
<u>Posttest</u>	(group x sex)								
	Planning	Ab	Cg	Ag	Bb	Cb	Dg	Bg	Db
		<hr/>							
	Total Competence	Ab	Db	Cg	Cb	Bb	Ag	Dg	Bg
		<hr/>							
	Achievement Test	Db	Dg	Cb	Cg	Ab	Bb	Ag	Bg
		<hr/>							

Note 1: Small g and b indicate girls and boys, respectively. Groups joined by a line are not reliably different from one another. Any groups that are not joined by one or more lines are reliably different from one another.

Note 2: A - Career education groups
 B - Full treatment groups
 C - Partial treatment groups
 D - No treatment groups

full treatment groups on the Occupational Information subtest. The career education unit group was identified as reliably different (lower) from the no treatment, partial treatment and full treatment groups on the Goal Selection and Planning subtests. Also on the Planning subtest career education unit boys and the partial treatment girls were reliably different (lower) from full treatment girls and no treatment boys. (See Figure 2.) On the Problem Solving subtest, the career education unit and no treatment groups were reliably different from the full treatment group.

On the Total Competence Test, the career education unit group was reliably different from the full treatment group. Also career education unit boys were reliably different (lower) from all other groups except no treatment boys and partial treatment girls. (See Figure 3.)

On the achievement test, two reliable results were identified. The full treatment and career education unit groups were reliably different (higher) from the partial treatment and no treatment groups. Also, career unit girls and full treatment girls were reliably different (higher) from no treatment girls and boys and partial treatment boys. Full treatment girls were reliably different from all groups except career education unit girls on the achievement test. (See Figure 4.)

Comparison Among Feeder Schools

Initial levels of career maturity as measured by the Career Maturity Inventory Attitude Scale were also analyzed in order to distinguish possible pre-treatment variance according to four possible feeder schools. These are junior high schools that were attended by the participating students the previous year. This was done to determine if students came to the senior high school with reliably different career maturity due to participation in guidance

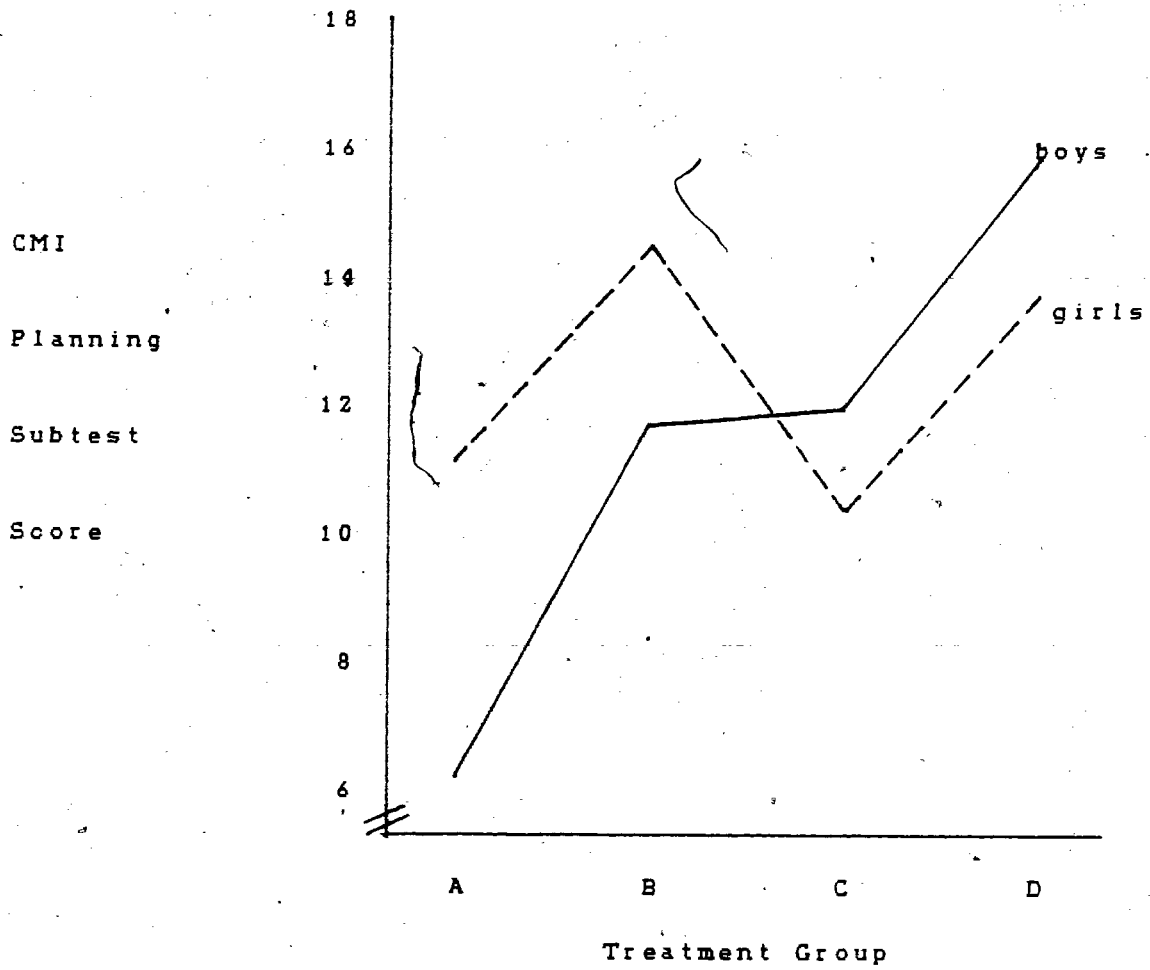


Figure 2. Group by Sex Interaction on Posttest - Planning.

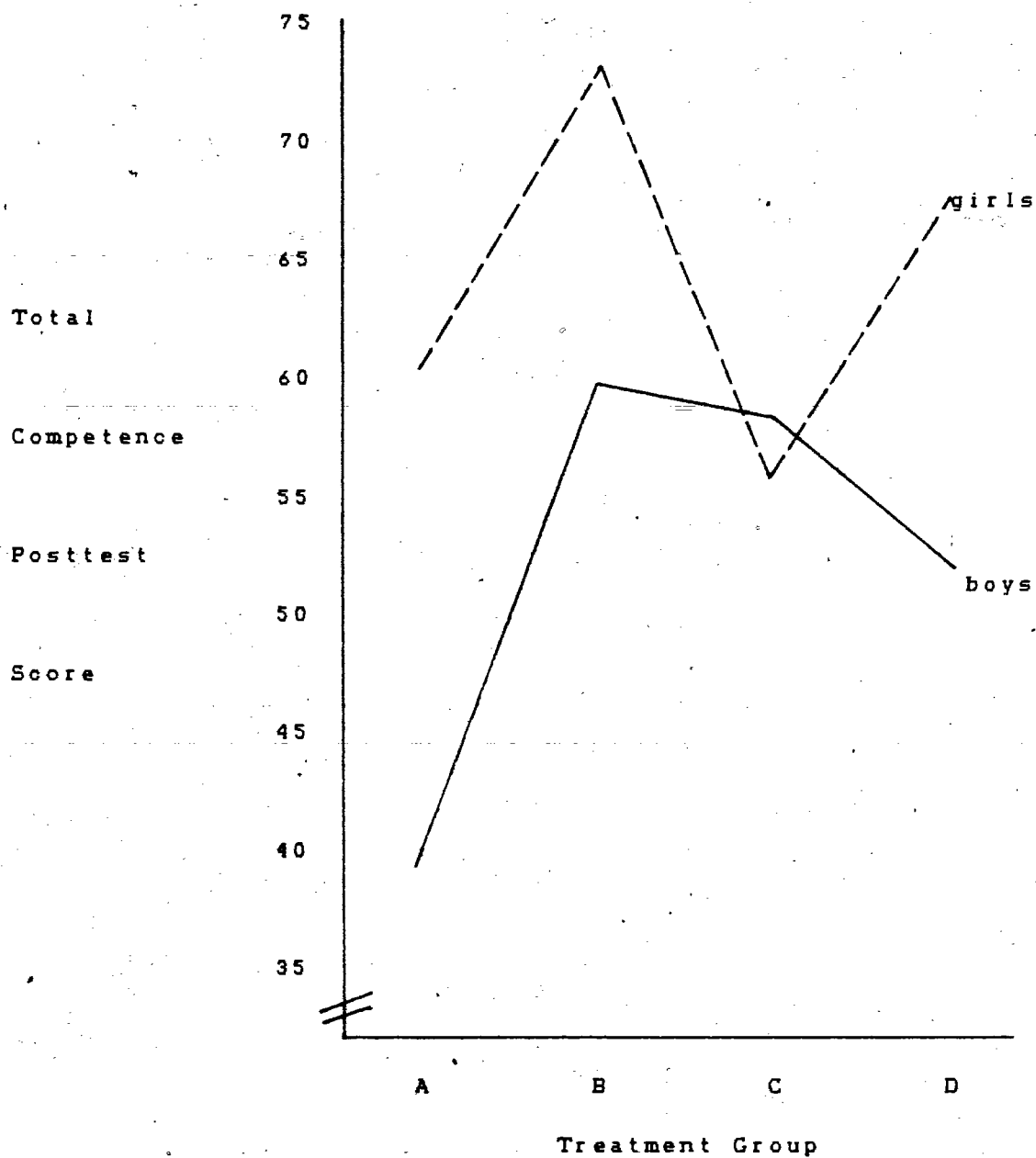


Figure 3. Group by Sex Interaction on Posttest Total Competence Test.

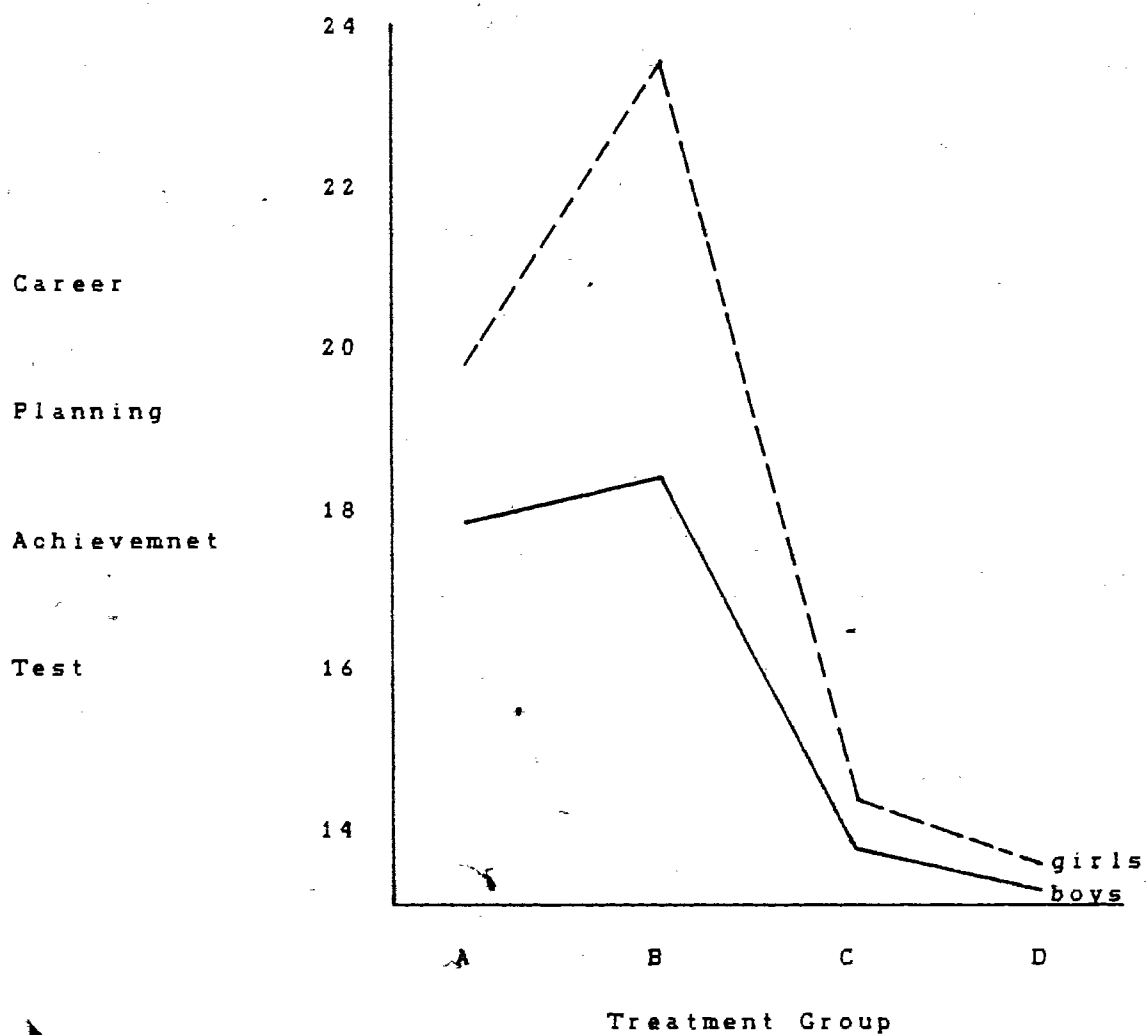


Figure 4. Group by Sex Interaction on Posttest Career Planning Achievement Test.

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related activities or other educational experiences. One-way analyses of variance were computed on the data in Table X. There were no reliable differences among feeder schools on any of these dependent variables. However, due to the large difference in group size these results might be misleading.

Students' Evaluation of the Program

The report of students' enjoyment or dislike for specific lessons in the career education unit and taking the Career Maturity Inventory are recorded in Table XI. These results are focused on groups A and B because they were the only groups who completed all elements of the program.

Another measure of the students' evaluation of the program was their attendance at the career day sessions. Students reported the sessions they attended and which ones they found beneficial. Table XII records the number of students who reported attending each presentation and the number of those students who found that particular session beneficial. Although students reported attending approximately only one-third of the sessions they could have attended, the results of Table XII indicate that those students found the sessions they did attend to be beneficial. The results also indicate higher interest in selected occupations such as cosmetician, police, pilots, forestry and logging, and recreation.

TABLE X

Pretest Comparison Among Feeder Schools

Variable	School				
	1	2	3	4	Other
Number of Students	90	13	73	6	29
Career Maturity Inventory					
Attitude Scale	M 35.42 S.D. 6.38	M 32.77 S.D. 4.63	M 32.99 S.D. 8.23	M 31.33 S.D. 4.84	M 35.07 S.D. 5.18
Self-Appraisal	M 13.43 S.D. 3.73	M 13.77 S.D. 2.24	M 12.48 S.D. 4.07	M 13.50 S.D. 4.37	M 13.62 S.D. 3.06
Occupational Information	M 15.34 S.D. 3.31	M 14.23 S.D. 3.17	M 14.18 S.D. 4.95	M 16.50 S.D. 3.15	M 15.31 S.D. 3.50
Goal Selection	M 13.41 S.D. 3.64	M 13.54 S.D. 2.47	M 12.38 S.D. 4.29	M 14.00 S.D. .63	M 13.69 S.D. 2.95
Planning	M 12.02 S.D. 3.99	M 12.54 S.D. 2.44	M 12.03 S.D. 4.66	M 13.17 S.D. 3.66	M 11.83 S.D. 2.99
Problem Solving	M 10.36 S.D. 3.00	M 8.92 S.D. 3.33	M 9.70 S.D. 3.75	M 11.83 S.D. 3.82	M 10.14 S.D. 3.39
Total Competence	M 64.57 S.D. 14.52	M 63.00 S.D. 8.72	M 60.77 S.D. 19.17	M 69.00 S.D. 13.96	M 64.59 S.D. 11.97

T A B L E XI

Student Enjoyment or Dislike of Program Components^a

Variable	CAREER EDUCATION UNIT ^b		FULL TREATMENT ^b	
	Like	% dislike	Like	% dislike
1. Career Maturity Inventory	7	13.5	16	30.8
2. Exploring Why People Work	9	17.3	10	19.2
3. Making a Self Inventory ^c	20	38.5	6	11.5
4. Completing the SDS	17	32.7	12	23.1
5. Youth Employment Speaker	29	55.8	7	13.5
6. Researching An Occupation	18	34.6	8	15.4
7. Completing a Resume	14	26.9	12	23.1
8. Job Application Form	17	32.7	7	13.5
9. Course Planning Lesson	9	17.3	8	15.4

(a) Only groups A and B completed all of the programs and answered these questions.

(b) Percentages do not equal 100 because not all students responded to the questions.

(c) S.D.S. = Self-Directed Search, Holland (1972).

TABLE XII
Career Day Session Attendance and Evaluation

Session	Attendance	Beneficial
1. Automotives	11	9
2. Construction Industries	12	9
3. Cosmetician	24	11
4. Engineering	14	11
5. Fashion Design and Sales	8	5
6. Mechanic	19	12
7. Medical Nurse and X-Ray Technician	6	8
8. Pacific Vocational Institute	4	3
9. R. C. M. Police	47	26
10. Social Services - Probation	19	19
11. Secretarial-Commercial	5	7
12. Pilot and Flight Attendants	39	29
13. Lawyer	14	6
14. Banking	2	1
15. Chef Training - Hotel	6	3
16. Computer Industry	7	1
17. Customs	2	1
18. Newspaper	5	3
19. Government Employment Opportunities	5	3

TABLE XII (continued)

Career Day Session Attendance and Evaluation

Session	Attendance	Beneficial
20. Coast Guard	7	5
21. Veterinarian	11	7
22. Transportation (Driving)	3	2
23. Radio	15	13
24. Real Estate	1	0
25. Hair Stylist	5	3
26. Fireman	3	1
27. Accounting	4	3
28. Canadian Union of Public Employees	9	2
29. Armed Forces	1	8
30. Forestry and Logging	22	20
31. Recreation	19	7
32. Teller Training	2	1
33. Dentist and Dental Assistant	8	4
34. Commercial Artist	5	3
35. Medical Doctor	5	4

Note: Students reported which career day sessions they attended and if they felt the explanation was beneficial to them. All students did not give complete answers to these questions and for 7, 11, 29 some students did not report attendance, but did report that the information was beneficial.

CHAPTER V

CONCLUSION AND DISCUSSION

This study was designed to determine the effectiveness of different combinations of an eight hour career education unit, a career day, and a post secondary information day on the career maturity of students, their success on an achievement test and their response to the Career Planning Questionnaire. Students were also surveyed regarding their enjoyment of individual components of the program. This chapter discusses the results of these findings and their implications for further career education programming in the following order: major findings related to hypotheses; student evaluation; summary of results; comparison with other studies; career maturity; limitations of the study; and future implications.

Major FindingsHypothesis 1

Students exposed to the full career education treatment did not have reliably higher career maturity scores than the other groups at posttest. Nor did the group receiving only the career education unit differ reliably in career maturity from the group receiving only the career day and post-secondary day, or the no-treatment group. The full-treatment group did score highest in total CMI competence and on all subscales of the CMI. However, the group receiving only the career education unit scored consistently lowest. The partial treatment and the no-treatment groups fell in between these extremes. Therefore, the data do not support the hypothesis that the career education unit enhanced students'

career maturity as measured by the CMI, nor the hypothesis that CMI scores increase according to the amount of treatment received.

Hypothesis 2

Students exposed to the career education unit and full treatment did score reliably higher on the multiple-choice achievement test on information covered in the career education unit compared to the partial and no treatment groups, neither of which received the career education unit. However, when considered in conjunction with sex, only girls who received the full treatment were reliably different from the partial treatment and no treatment boys and girls on the achievement test.

Hypothesis 3

Reliable differences between sexes in favour of the girls were found on all pretest and posttest subtests of the dependent variables except the posttest Attitude Scale of the Career Maturity Inventory.

Student Evaluation

Evaluation of the program elements by the students indicated that they generally disliked writing the Career Maturity Inventory. This is not surprising given the length of test time, approximately two hours, and the relatively short interval between testing, from 28 to 65 days. The testing time could have been reduced by using only specific subtests of the Competence Test or eliminating either the Attitude Scale or Competence Test. This was done by Hardie (1978) who did not use the Attitude Scale on her posttest. Hardie did not provide a rationale for this decision. Furthermore, unless similar choices of CMI subtests are made by other researchers, comparability of studies will be

limited.

No clear interpretation can be drawn from the student reaction to other parts of the program. The students either showed indifference by not answering, or responded with variable enthusiasm for the program elements. However, for those students who responded, many liked listening to the Youth Employment Center speaker. The relative popularity of the Youth Employment Center speaker could be attributed to the practical and up-to-date information she presented as well as the fact that she was new to the school and hence somewhat of a novelty.

The evaluation of the career day by students indicates that those who reported attending sessions generally found them beneficial. This is consonant with the goal of career days as set out by Hamilton (1975, p. 122) as "a career information educational process." Students were allowed to go to sessions of their choice which would broaden their knowledge in their interest area. Two areas of major interest included the Royal Canadian Mounted Police, and pilots and flight attendants. Both could be classified as fantasy jobs by Super (1963, 1978) and would be expected to be popular, because many of the participants in this study would be in the tentative substage of the exploration stage of career development. Other jobs with higher than average interest included cosmetician, mechanic, social services, lawyer, radio, forestry, and logging and recreation (see Table XII).

Summary of Results

This study examined three main hypotheses. These hypotheses were tested using two standardized tests, the Career Maturity Inventory Attitude Scale and Competence Tests, as well as one measure created for the study, the achievement test. In testing students who had received varying amounts of career education it was found that students did learn the material taught, but did not make

reliable gains on the developmental scales of the Career Maturity Inventory. This could be due to the relative short time between testing sessions that did not permit development to be evidenced, the inability of these measures to evaluate short-term career education programs, or the expressed student dislike for the testing procedure.

In summary, the results of the study were that (1) the CMI Attitude Scale and Competence Test, and the achievement test are internally reliable instruments. (2) No statistically reliable differences among pretest feeder school scores were found. (3) Analyses of variance on the CMI variables showed reliable differences between sexes both at pretest and posttest. (4) Analyses of variance showed reliable differences among groups on selected CMI subtests at pretest. However, post hoc tests using the Tukey WSD procedure with harmonic n showed that these pretest differences could not be localized for any particular set of pretest means on the CMI variables. (5) There were statistically reliable F ratios for the treatment effect on the CMI variables. The full treatment group was consistently the highest, although usually not reliably higher than the partial treatment and no treatment groups. The career education unit group was consistently the lowest, and whenever there was a reliable post hoc difference on the WSD tests, it was between the career education unit and the full treatment groups. (6) Career education unit and full treatment groups had reliably higher scores than the partial and no treatment groups on the achievement test. (7) Students generally disliked writing the Career Maturity Inventory and liked making a vocational self-inventory, listening to the Youth Employment Center speaker, researching an occupation, and filling out a job application sample. (8) Finally, students who reported attendance at career day sessions tended to find them beneficial.

Implications of the Study

Comparing the results of this study with similar studies verifies the work of Bonnet (1977), who reviewed the results of 37 career education programs and concluded that the literature displays mixed results. The only clear demonstrations of success of career education were in the areas of career knowledge and career decisions making skills. Comparing the relevant CMI subtests in these areas (Occupational Information, Problem Solving) showed that in this study students in the full treatment group (see Tables V and VII) improved marginally, while the career education unit students who received a lesser amount of treatment, actually declined on these scales. Comparing this study's results with Hardie's (1978) findings shows that this study failed to replicate reliable increases in career maturity using a short-term career education package. However, Hardie found no sex differences in career maturity either at the pretest and posttest, while such differences were found in this study. In fact, girls consistently had higher career maturity than boys on all subjects, as also found by Egner and Jackson (1978). Omvig and Thomas (1977), using a posttest design in a year-long career education program, also found that girls in sixth and eighth grade had consistently higher mean scores than boys on the Career Maturity Inventory subtests, with most of these differences being reliable. It must be noted, however, that in the current study partial treatment group girls were consistently lower than partial treatment group boys at the posttest. Also, the use of the complete Career Maturity Inventory at the pretest and only the Competence Test at the posttest made Hardie's results difficult to compare to this study, since students would have had less testing time in Hardie's study.

Topping (1979) was not able to demonstrate reliable increases in career maturity in a 12 lesson career education unit. However, he may have wrongly

concluded that this was due to a failure of the career education unit. It may have been due to the inability of the Career Maturity Inventory to be sensitive to short term interventions. Given that the career education unit group in this study scored lowest on test CMI variables, the relative impotence of the career education unit cannot be denied, however.

Flake, Roach and Stenning (1975) also found results different than those found in this study. Using only the Attitude Scale and the Self Appraisal subtest, they found reliable improvement on these two scales combined as a result of a short-term career counselling program. However, the intervention used in their study, primarily personal interviews, and the shorter test time make the Flake et al. study difficult to compare to this current study.

Neither Topping (1979) nor Hardie (1978) used an achievement test, thus they were unable to demonstrate the ability of the career education unit to teach concepts. This study did have an achievement test and it was evident that students who studied the career unit (career education unit and full treatment groups) performed reliably higher on this achievement test than did the partial and no treatment groups. Also, girls in the career education unit and full treatment groups performed reliably better than all other groups on the achievement test. These results indicate that the students learned the material presented in the career education unit. This was true even with the career education unit boys who were reliably lower than the other groups at the posttest on the Career Maturity Inventory. Such learning might promote gains in career maturity over a longer time period although this proposition certainly is not testable with the current data. The relationship between knowledge about careers and career maturity warrants attention in future research.

The focus of this study on career maturity and the inconclusiveness of the results suggests that the sample employed in this study should be compared to

the norming sample presented by Crites (1973a). If this group were found to be considerably different than Crites' group on career maturity, the results of the study could be associated with an unusual sample. Crites points out that local norms are more valuable than regional or national norms for comparing student progress. Also, for purposes of generalization, such comparisons are informative. Thus, it is noteworthy that at the pretest the sample was similar to Crites' (1973a) norms. Although a standard score mean comparison of the Attitude Scale placed the study group at the 34 percentile rank, Competence Test standard score mean comparison ranged from the 40th to the 49th percentile. (See Table IV.)

With a sample similar to Crites' (1973a), it is unlikely that this sample was either significantly immature or mature with regards to career maturity. The inability of the career education unit to influence the Career Maturity Inventory Scores raises a number of questions. Is career maturity measurable? Can the Crites Inventory measure changes due to short-term interventions? Are short-term interventions worthwhile? Should career education use different curricula for the intended outcomes?

In this study elements of the career education unit were developed to reach goals compatible with career maturity as outlined by Hoyt (1979). Students in the treatment groups receiving instruction on information related to career maturity learned more relative to the non-treatment groups. However, these more educated students generally did not show a corresponding increase on Crites' CMI. The inability of the Career Maturity Inventory to be sensitive to that difference may be due to factors mentioned earlier or to the limitations of this study.

Limitations of this Study

Factors affecting the results of this study might include replacing of career education for the normal guidance classes, lack of true random sampling, the use of one instructor for all teaching components, the choice materials for the career education unit, that students did not seem to take the posttest as seriously as the pretest, and that students were allowed to leave the testing room when finished.

Replacing career education for guidance classes might have affected the student's attitude toward the study. The fact that work in the career education unit did not count toward a student's grade could have led to less serious application by students. Also guidance replaced physical education, which the boys normally enjoyed more than the girls. This might account for the girls' higher application to the career education unit than boys, who may have been disinterested.

The lack of true random sampling was due in part to the students' selection of their guidance class. The students may have been in a particular class due to the way their other classes fitted in with physical education. Thus, even though the allocation of groups to treatment was randomly assigned, the assignment of students to groups was not. This, of course, is frequently a problem in field based research when assignment of students to groups is not controlled by the researcher.

The use of only one instructor for all the groups may have been a limiting factor. However Topping (1979) found that no difference occurred between the two different instructors in his study. One instructor should have meant that there was less opportunity for differences due to changing presentation style or completeness of presentation across treatments. However, it is possible that the results of this study are confounded with individual characteristics of the

instructor.

The choice of teaching material may have also limited the study. Due to the short time period available for instruction and the desire to evaluate a short term program the amount of information given to students was limited. More time and more information and other components of career education, such as work experience, may have changed the results.

The attitude of students to the testing procedures may have affected the study also. Examiners' reports indicated that the students did not take the posttest as seriously as the pretest. Also students were allowed to leave the testing area when they finished the test. This may have meant that some hurried through.

Future Implications

Short term career education units need to be evaluated on measures other than developmental tests. Classroom tests of material covered in class would be more appropriate, as was done in this study. Career maturity is a developmental construct, and thus may not be influenced directly by short term events. As a consequence, classroom programs designed to stretch over longer periods of time or to cooperate with work experience programs such as mentioned by Hoyt (1979) may be more appropriate for evaluation by the Career Maturity Inventory. Selected use of parts of the Inventory could be used as Hardie (1978), Flake, Roach, and Stenning (1975), and Omvig, Tulluck, and Thomas (1975) did, but this would have to be common practice in order for comparisons to be made across studies. Teachers and theorists will also have to continue to try to make career education available at the time of student readiness, such as what is currently done with computerized career choice planning in selected British Columbia schools (Jarvis, 1978).

At the present time in selected British Columbia schools, students have the opportunity to work with counsellors and the computerized career planning program (Jarvis 1978) when they express readiness and willingness to do so. These in-school programs place responsibility on teachers to prepare students for exploration of occupations, but responsibility to explore occupations is given to the student. Teachers indicate that students have a generally positive attitude to such programs (Drdul, 1982).

More study also is needed regarding sex differences and their relationship to career maturity and career choice. This study's clear indication of sex differences substantiates this need when compared with mixed results in the past.

APPENDIX INFORMATION

- A LESSON PLANS
 - B CAREER DAY INFORMATION SHEET SURVEY
 - C CAREER DAY BULLETIN
 - D CAREER PLANNING QUESTIONNAIRE
AND ACHIEVEMENT TEST
-
-

APPENDIX A
CAREER EDUCATION
UNIT
LESSON PLANS

APPENDIX A

LESSON 1

WHY PEOPLE WORK

OBJECTIVES:

1. To present an overview of the career package.
2. To demonstrate that many decisions influence a person's career.
3. To elicit general feelings students have about work.
4. To have the students explore why people work.
5. To look at the difference between intrinsic and extrinsic reasons for working.
6. To explore with students the satisfactions they hope to achieve from work.

METHOD:

- A. Course overview including a discussion of their expectations
 1. outline of the career package - self knowledge, world of work and decision making.
 2. discussion of the concepts of career
- B. Outline of instructor's career path.

The presentation will identify:

1. both personal and environmental factors which influenced the career
2. the developmental process from her childhood fantasies, to the present, and
3. the relationship of these decisions to one another.

C. Discussion:

1. Question and answer period on instructor's presentation
2. Have the class identify some of the major decisions presently facing them.
Discuss: Is future controlled by fate?

LESSON 1 (cont'd)

D. Group discussion on Why People Work.

1. Have students do individual project 1 from Creating a Career, "How Do You Feel About Work?"
2. Have a class discussion of the responses to the checklist.
-Stress work means different things to different people and it is important to know what you want from work before you begin exploring occupational possibilities.
3. Divide into small groups and list in order of importance the reasons why they work; someone from the group will write this list on the blackboard for comparison. Following this, a discussion of the difference between intrinsic (love of work) and extrinsic (outcome of work) reasons for working will be held and each group will classify their reasons into these categories.

E. Complete individual project 2 from Creating a Career
"What Satisfactions Do You Expect From Work?"

F. Summary:

Stress that each person must determine his/her own values, needs and reasons for working.

LESSON II

SELF ASSESSMENT INVENTORY

OBJECTIVES:

1. To explore the different types of information students should have about themselves in order to make a satisfying occupational choice.
2. To determine at least three strategies for gathering self information.
3. To assist student in the preparation of a personal inventory based on their interests, performances and behaviour in past activities.

METHOD:

- A. Discussion: The importance of self-knowledge in decision making will be discussed, pointing out that satisfying occupational choice is dependent on -
 1. What you want to do (interests and values)
 2. What you are, can do (capabilities) and
 3. What you are willing to do.
- B. Identification of the types of information needed before making occupational choices.
 1. A list of the self information necessary in decision making will be made on the blackboard.
 2. The factors in self appraisal will be discussed and the self appraisal wheel will be handed out.
- C. A discussion of the strategies for gathering self-information and the strengths and weaknesses of each.
 1. parents, friends, relatives, counsellors, and teachers
 2. standardized tests (aptitude and interest)
 3. self inventories.

LESSON II (cont'd)

D. Preparation of the personal inventory.

The purpose of doing a personal inventory will be discussed:

1. for personal growth
2. to explore their interests and abilities, and
3. to help the students end up in the area where they are most suited.

The students will work through projects 2 and 3 from Unit 4 in Creating a Career (stress will be made of the importance of writing but we will use phrases and simple words.)

LESSON III

SELF ASSESSMENT CONTINUED

OBJECTIVES:

1. To discuss the effects of past experience on the development of a person's self-picture.
2. To help students identify hereditary and environmental factors that have shaped them.
3. To help students identify goals for their growth and suggest some ways of moving towards these goals.

METHOD:

- A. Discuss with the student how a study of past influences can help people understand themselves (heredity and environmental factors).
 - discuss how past experience affects self-picture.
 - role - what you are now - what you want to be.
- B. Complete projects #4, #5, and #6.
 - #4 - Assessing your past.
 - #5 - Identifying character traits.
 - #6 - Organizing your information.
- C. Discuss the use of the personal inventory information.
 - e.g. - in determining goals
 - as a cross reference with results of tests and other indicators.
 - in searching for occupational alternatives.
 - in evaluating alternatives and deciding.
- D. Have willing students take turns describing the information they compiled in project #6.
- E. Discuss how they can set goals for growth i.e. further development of their outstanding abilities, strengthening areas where they are weak, changing some ways of behaving if it is not consistent with the kind of person they want to be, or broaden their interests before they decide on an occupational goal.

LESSON III (cont'd)

F. Complete project #7 Setting Goals.

Have the students set 3 goals for themselves and discuss with as many students as possible their plans for moving towards achieving them.

LESSON IV

ASSESSING INTEREST PATTERNS AND APTITUDES

OBJECTIVES:

1. To gather together the information the students have about themselves and relate this to the world of work.
2. To introduce the Canadian Classification and Dictionary of Occupations (CCDO) and to give examples of the following factors used to describe occupational qualifications: aptitudes, interests data - people - things, temperaments, environmental conditions, educational preparation and physical activities.
3. To explain and answer questions arising from the aptitude checklist.
4. To help students determine their present and projected levels of general education.
5. To assist students in exploring their interest profile in the Self-Directed Search (SDS).
6. To code the information from the SDS and search for corresponding job titles from "The Occupation Finder".
7. To briefly explore these job titles in the CCDO, Careers for the 70's, and Careers B.C. and to interpret the occupational qualifications profiles.

MATERIALS:

- A. Self Directed Search and Occupation Finder.
- B. Canadian Classification and Dictionary of Occupations.
- C. Careers for the 70's.
- D. Careers B.C.

METHOD:

- A. Presentation on the purpose of the unit. The instructor will introduce the CCDO, to demonstrate how occupations are classified from personal characteristics. - The focus will be on describing the students as workers.

LESSON IV (cont'd)

B. Exploration of factors in relation to occupations.

1. Aptitudes:

- a. Discuss GATE and V-PIC tests.
- b. Complete the aptitude checklist.
Emphasize the importance of being realistic.

2. Educational Development.

Assign the "Assessing Your General Education Development Level" questionnaire.

3. Interests:

- a. The value of interest tests are pointed out:
to identify primary interest, to compare interests with stereotypes, and to explore occupational alternatives.
- b. Administration and interpretation of the Self Directed Search.
- c. Use Occupational Finder to the SDS to relate the students' interests to job titles.

- the instructor will demonstrate this with her own profile.

C. Using the resource information

1. With the job titles found in the Occupational Finder students will then look for the corresponding CCDO number.
 2. Use of the CCDO, Careers for the 70's, and Careers B.C. will be briefly explained.
 3. Emphasis will be on realistic decision making in interpreting the suitability of alternatives in job selection.
-

LESSON V

CANADA EMPLOYMENT AND IMMIGRATION SPEAKER

OBJECTIVES:

1. To introduce the students to the resources in the community.
2. To have the students meet the contact person at the Youth Employment Center - Carolyn Flaherty and know where she is located.
3. To describe the services provided by Manpower for the students.
4. To outline some practical tips for job hunting.
5. To provide some information on employment trends.

MATERIALS:

Guide for the Job Hunter

METHOD:

A. Introduction of special speaker Carolyn Flaherty from the Youth Employment Center.

B. Topic of Speaker

1. Location of Youth Employment Center
2. Services Provided by Manpower
 - Career planning
 - Vocational assessment
 - Employment counselling
 - Job placement assistance
 - Service information
 - Manpower programs i.e. Job Experience Training
3. Job hunting tips
4. Information on occupational trends

C. Thanking the Speaker

- emphasize the importance of having adequate relevant information from the world of work.

LESSON VI
RESEARCHING OCCUPATIONS

OBJECTIVES:

1. To review the steps in the process of choosing an occupation.
2. To review the major sources of occupational information.
3. To have the students outline and evaluate occupational alternatives.
4. To acquaint the students with the counselling area and the vocational resource center in the school.
5. To discuss with each student the progress s/he has made towards choosing an occupation.
6. To help students identify the tasks that must be satisfied before they can choose an occupation.
7. To help students who have chosen an occupation implement their decision.

MATERIALS:

- A. Checklist for study of an occupation
- B. Career B.C., CCDO, Careers for the 70's

METHOD:

- A. Review the steps in the process of choosing an occupation:
Students have
 1. learned about themselves
 2. broadly explored available opportunities
 3. selected ones that most interest them.
- B. Review of the major sources of occupational information
 1. Literature, CCDO, Careers B.C., Careers for the 70's
 2. Parents, friends, relatives
 3. Counsellors, Manpower
- C. Assign the students a study of 2 occupational alternatives.)

LESSON VI (cont'd)

Outline:

1. occupational title, CCDO number
2. nature of work
3. work environment
4. qualifications
5. preparation and training routes
6. entrance requirements
7. advancement
8. earnings
9. advantages and disadvantages
10. future outlook
11. evaluation of personal suitability

D. Emphasize the necessity of looking at the overall picture and the decisions that must be dealt with in considering:

1. the kind of work they would like to do
2. the kind of work they are capable of doing and
3. the kind of work they are willing to do.

E. A tour of the vocational resource area.

Student location of occupational information of university calendars, entry requirements and brochures.

1. training information
2. location of Counselling offices.

F. Discussion of occupational plans with each student as they are completing their assignments.

The object is to help students assess how far they have progressed towards choosing an occupation and what their next tasks are (individual sessions with each student will be held.)

LESSON VII
RESUME WRITING

OBJECTIVES:

1. To have the students (in small groups) share the information they have collected from the previous lesson.
 2. To discuss the purpose of using a resume in applying for a job.
 3. To describe acceptable formats for presenting qualifications in a resume.
 4. To help students prepare their own resumes.
- To give students experience filling out an application form.

MATERIALS:

- A. Examples of resumes
- B. Resumes outline
- C. Paper for the students resume

METHOD:

- A. Organize the class into small groups of 4 or 5 to discuss their findings of their occupational searches.
- B. Discussion of the purpose of the resume
 1. must interest the employer
 2. must show the applicant is qualified
- C. Presentation of examples of 3 resumes
 - review the merits of each resume
 1. Does the applicant show s/he has the qualifications (required ones first)?
 2. Is the personal information adequate and relevant to the job?
 3. Is the information on work experience adequate and relevant?
 4. Are the references satisfactory?

LESSON VII (cont'd)

- D. Presentation of the outline of the resume
Students will prepare their own outline, either chronological or functional for the job of their choice. The assignment will be collected in the next class.

Refer to information gathered for the personal inventory.

- E. Application form—the students will have the experience of filling out an application for employment form.

LESSON VIII

COURSE PLANNING

OBJECTIVES:

1. Review of the concepts of career education.
2. To give the students an overview of entry requirements into different institutions.
3. To review the high school graduation requirements.
4. To plan the Grade 12 course selection forms.

METHOD:

- A. A review of the concepts of career education
 1. Career Path
 2. Decision making skills
 3. Location of information
 4. Goal setting
- B. Presentation of the entry requirements for U.B.C., S.F.U., U.V.I.C., B.C.I.T., Douglas college, P.V.I. Look through them for other vocational training.
- C. Explanation of the required courses for high school graduation.
EN 11, PE 11, SS 11, EN 12, and 3 other level 12 courses.
- D. Filling out of Grade 12 course planning forms on the basis of training routes that students found from the resource information.
- E. Conclusion
 - future - keep all options open
 - goal setting

APPENDIX B
CAREER DAY
INFORMATION
AND SURVEY

APPENDIX BNORTH SURREY CAREERS DAY

On Thursday, November 23, 1978, North Surrey will be using part of the school day to sponsor a "Careers Day" for all students.

In order to prepare an interesting and relevant programme, we need your help and cooperation. You will be able to hear three different speakers. From the list below choose three career areas or clusters. Add any of your own choices too. Presentations by speakers will be arranged so that you will be able to hear all three of your choices. So have a look at the checklist and choose realistic careers for yourself.

CLUSTER # 1Automobile/Automotive

- Auto body repair
- Mechanic
- Parts - Retail and Sales

CLUSTER # 3Municipal/Provincial/Federal
Government Employees

- social planner - city
- municipal planning
- urban and regional planning
- immigration officer
- Post Office

CLUSTER # 5Newspaper Occupations

- reporters
- columnists
- printers, copy and layout
- pressman
- copy writer

CLUSTER # 2Armed Forces

- Army
- Navy
- Air Force
- Coast Guard

CLUSTER # 4Nursing/Hospital

- public health nurse
- psychiatric nurse
- general duty -
hospital nurse
- orderlies
- X-Ray Technician

CLUSTER # 6Television

- film editor
- production ass't
- audio/visual
technicians (camera)
- announcer

APPENDIX B (cont'd)NORTH SURREY CAREERS DAY (cont'd)CLUSTER # 7Radio

- broadcaster
- writer
- sales
- managerial/business
- technician

CLUSTER # 9Secretarial/Commercial

- stenographer
- secretary/typist
- office clerk
- receptionist telex

CLUSTER # 11Veterinarian

- Vet Assistant

CLUSTER # 13Medicine

- doctor - general
- medical steno
- medical librarian
- physio therapist
- occupational therapist

CLUSTER # 8Forestry and Lumber

- logging
- engineering
- pulp and paperworker
- plywood worker

CLUSTER # 10Legal

- lawyer - criminal
- lawyer - civil
- paralegals
- legal stenographer
- court reporter

CLUSTER # 12Real Estate

- salesman
- office clerk

CLUSTER # 14Airport Personnel/
Air Traffic Controller

- ticket agent
- hostess - V.I.P.
Lounge
- steward/stewardess
- ramp supervisor
- Pilot
- Air Frame mechanic

APPENDIX B (cont'd)NORTH SURREY CAREERS DAY (cont'd)CLUSTER # 15Transport Equipment Operators

- truck driver (long distance/local)
- cat skinner
- heavy duty equipment operator

CLUSTER # 17Dentistry

- Dentist
- certified dental assistant
- dental hygienist
- dental mechanic
- dental Lab Technician

CLUSTER # 19Construction Industries

- Asbestos Worker
- Cement Mason
- Glazier
- Operating Engineer
- Painter, Wall Hanger
- Roofer
- Bricklayer
- Electrician
- Lather
- Draftsman

CLUSTER # 21Commercial Artist

- radio copywriter
- T.V. copywriter
- Interior Design

CLUSTER #23E.C. Telephone Worker

- operator
- linesman
- office worker
- key punch operator
- installer

CLUSTER # 16Social Services

- Social Worker
- Probation Officer
- Welfare Worker
- Childcare Worker
- Family Resources
- Psychologist
- Day Care

CLUSTER # 18Banking

- Manager
- Bank Teller

CLUSTER # 20Cosmetician

- Beautician
- hairdresser
- fashion designer
- barber - hair stylist
- modelling

CLUSTER # 22Hotel Industry

- Desk Clerk
- Bell Hop
- Cook/Chefs
- Sales
- Receptionist

CLUSTER # 24Management Consultant

- Computer technology

APPENDIX B (cont'd)NORTH SURREY CAREERS DAY (cont'd)CLUSTER # 25Engineers

- civil
- mechanical
- electrical
- metallurgical

OTHERS

- | | |
|--|--|
| 26 - Fireman | 31 - Teaching - Vocational Instructor |
| 27 - Fishing Industry | Academic teaching |
| 28 - Florist | 32 - Recreational Directors programme planners |
| 29 - Architect/Landscape-Architect | facility, administrators |
| 30 - Sales person - retailing-Shop Boutiques, Dept. Stores | 33 - R.C.M.P. and police workers |
| | 34 - Apprenticeships, trades |
| | 35 - B.C. Hydro - Bus, Gas Electricity |
| | Photography |
| | 36 - Butcher |
| | 37 - Customs Officer |
| | 38 - Rock Musician |
| | 39 - Dietician |
| | 40 - Accountant |
| | 41 - Minister |
| | 42 - Game Management |
| | 43 - Bookkeeping |

PLEASE TEAR OFF and RETURN TO SUBJECT TEACHER

NAME _____

My choices are:

1. _____ 2. _____ 3. _____

In order to assist speakers in providing pertinent information, what would you like to know most about the areas you have chosen.

1. Salary ____ 2. Future Outlook ____ 3. Security ____
 4. Training ____ 5. Other ____

APPENDIX C

CAREER DAY

BULLETIN

APPENDIX C

CAREERS DAY

NORTH SURREY SENIOR

SECONDARY SCHOOL

16945 - 96th Avenue
Surrey, B.C. V3R 5W5

Welcome students and guests to North Surrey's Career Day. We hope that this will be an opportunity for our students to become familiar with at least three career areas that are available to them.

There is a choice of forty speakers, from various career areas, who will describe their particular occupation and other occupations related to their field.

We wish to extend our thanks to all who have participated in making this day a success. Our special thanks to the many speakers who have come to offer their knowledge and experience to our students and to the staff and students council who are acting as hostesses for the day.

A luncheon for our guests provided by Mr. Van Der Hoeven and the chef training class is much appreciated.

November 23, 1978

Session I

9:20-10:00 a.m.

<u>Career Area</u>	<u>Speaker</u>	<u>Room</u>
1. Automotives	Mr. Wills Mr. McIsaac	106
2. Construction Industries	Mr. Sheepwash	107
3. Cosmetician	Ms. Debrowski	203
4. Engineering	Mr. Anderson Mr. Webster Mr. Riesbough	GO 7
5. Fashion Design and Sales	Mr. Gravenhorst Mr. Setterington	206
6. Mechanic	Mr. Brown	103
7. Medical Nurse X-Ray Tech	Ms. Longdon Ms. Coles	204
8. Pacific Vocational Institute	Mr. Ford	117
9. R.C.M.P.	Constable Wilkinson	Band Room
10. Social Services-Probation	Ms. Policha	202
11. Secretarial-Commerical	Ms. Threlfall	109
12. Pilot Flight Attendant	Mr. Vogel Mrs. Granbois	205
13. Lawyer	Mr. Higham	GO 3
14. Banking	Ms. Scott	114
15. Chef Training-Hotel	Mr. O'Hara	GO 2
16. Computer Industry	Mr. McCloy	112
17. Customs	Mr. Greig	115
18. Newspaper	Mr. MacDonnell	207
19. Government Employment Opportunities	Ms. Flaherty Ms. Olson	GO 4

Session I (cont'd)

<u>Career Area</u>	<u>Speaker</u>	<u>Room</u>
20. Coast Guard	Mr. Ball	G0 5
21. Veterinarian	Dr. Vanderende	208
22. Transportation Drivers Training	Ms. Miller	105
23. Radio	Mr. Dodman	Portable
24. Real Estate	Mr. Bucholtz	Conference Room
25. Hair stylist	Ms. Tyler	G0 :
26. Fireman	Mr. Lonneberg	119

Session II

10:05-10:45 a.m.

<u>Career Area</u>	<u>Speaker</u>	<u>Room</u>
1. Automotives	Mr. Wills Mr. McIsaac	106
2. Construction Industries	Mr. Sheepwash	107
3. Cosmetician	Ms. Debrowski	203
4. Engineering	Mr. Anderson Mr. Webster Mr. Riesbough	GO 7
5. Fashion Design and Sales	Ms. Gravenhorst Ms. Setterington	206
6. Mechanic	Mr. Brown	103
7. Medical Nurse X-Ray Tech	Ms. Longdon Ms. Coles	204
8. Pacific Vocational Institute	Mr. Ford	117
9. R.C.M.P.	Constable Wilkinson	Band Room
10. Social Services-Pro- bation	Ms. Policha	202
11. Secretarial - Commercial	Ms. Threlfall	109
12. Pilot Flight Attendant	Mr. Vogel Mrs. Granbois	205
13. Lawyer	Mr. Higham	GO 3
14. Banking	Ms. Scott	114
15. Chef Training - Hotel	Mr. O'Hara	GO 2
16. Computer Industry	Mr. McCloy	112
17. Customs	Mr. Grieg	115
18. Newspaper	Mr. MacDonnell	207

Session II (cont'd)

10:05-10:45 a.m.

<u>Career Area</u>	<u>Speaker</u>	<u>Room</u>
19. Government Employment Opportunities	Ms. Olson Ms. Flaherty	G0 4
20. Accounting	Mr. Kip	111
21. Armed Forces	Captain MacDougal Sargeant Warrilow	G0 5
22. Canadian Union of Public Employees	Mr. Horne	201
23. Forestry and Logging	Mr. Crozier	121
24. Recreation	Mr. Renner	Gym
25. Teller Training	Mr. Stuart Ms. Beck	113
26. Transportation Driver Training	Ms. Miller	105
27. Real Estate	Mr. Bucholtz	Conference Room
28. Hair stylist		G0
29. Fireman	Mr. Lonneberg	119

Session III

10:50-11:30 a.m.

<u>Career Area</u>	<u>Speaker</u>	<u>Room</u>
1. Automotives	Mr. Wills Mr. McIsaac	106
2. Construction Industries	Mr. Sheepwash	107
3. Cosmetician	Ms. Debrowski	6 203
4. Engineering	Mr. Anderson Mr. Webster Mr. Riesbough	G0 7
5. Fashion Design and Sales	Ms. Gravenhorst Ms. Settingington	206
6. Mechanic	Mr. Brown	103
7. Medical Nurse X-Ray Tech	Ms. Longdon Ms. Coles	204
8. Pacific Vocational Institute	Mr. Ford	117
9. R.C.M.P.	Constable Wilkinson	Band Room
10. Social Services-	Ms. Policha	202
11. Secretarial Commercial	Ms. Threlfall	109
12. Pilot Flight Attendant	Mr. Vogel Mrs. Granbois	205
13. Lawyer	Mr. Higham	G0 3
14. Accounting	Mr. Kip	111
15. Armed Forces	Captain MacDougall Sargeant Warrilow	G0 5
16. Canadian Union of Public Employees	Mr. Horne	201
17. Forestry and Logging	Mr. Crozier	121

Session III (cont'd) 10:50-11:30 a.m.

<u>Career Area</u>	<u>Speaker</u>	<u>Room</u>
18. Recreation	Mr. Renner	Gym
19. Teller Training	Mr. Stuart Ms. Beck	113
20. Dentist and Dental Assistant Dental Assistant	Dr. Leitz Ms. Previtt	208
21. Transportation Drivers Training	Ms. Miller	105
22. Radio	Ms. Flaherty	Portable
23. Commercial Artist	Mr. Richardson	G0
24. Doctor	Doctor Anderson	119

APPENDIX D
CAREER PLANNING
QUESTIONNAIRE
AND
ACHIEVEMENT
TEST

6

APPENDIX D

Name _____

CAREER PLANNING - QUESTIONNAIRE

1. Which of the following activities did you enjoy in the career planning program?
 - A. Completing the Career Maturity Inventory.
 - B. Exploring "Why People Work."
 - C. Making a Self Inventory.
 - D. Completing the Holland Self Directed Search (S.D.S.) Interest Test.
 - E. Listening to the speaker from the Youth Employment Centre.
 - F. Completing an Occasional Search on One Occupation.
 - G. Completing a Resume.
 - H. Filling out a Job Application Form.
 - I. Completing a Grade 11 and Grade 12 Course Planning Program.

2. Which of the following activities did you not enjoy in the career planning program?
 - A. Completing the Career Maturity Inventory.
 - B. Exploring "Why People Work."
 - C. Making a Self Inventory.
 - D. Completing the Holland Self Directed Search (S.D.S.) Interest Test.
 - E. Listening to the speaker from the Youth Employment Centre.
 - F. Completing an Occupational Search on One Occupation.
 - G. Completing a Resume.
 - H. Filling out a Job Application Form.
 - I. Completing a Grade 11 and Grade 12 Course Planning Program.

*Career Planning - Questionnaire (cont'd)

3. Please give your 3-letter Holland (S.D.S.) Interest Code. i.e. Artistic, Realistic, and Investigation would be A.R.I.

Code: _____

4. Which sessions, if any, did you attend on Career Days?
- A. _____
- B. _____
- C. _____
5. Which did you find most beneficial?

A. _____

B. _____

C. _____

CAREER PLANNING - ACHIEVEMENT TEST

6. In deciding what kind of work a person would like to do, it is necessary to:
- _____ a. Make only one career decision.
- _____ b. Make several career decisions.
- _____ c. Allow situations to lead you to the right job.
- _____ d. Do what others tell you to be.
- _____ e. All of above.
7. People work to:
- _____ a. Satisfy their needs.
- _____ b. For Intrinsic reasons.
- _____ c. For Extrinsic reasons.
- _____ d. For personal satisfaction.
- _____ e. All of above.

CAREER PLANNING - ACHIEVEMENT TEST (cont'd)

8. Intrinsic reasons for working are:
- a. Necessity of work.
 - b. What will other think?
 - c. Love of work.
 - d. Outcome of work.
 - e. Don't know.
9. Extrinsic reasons for working are:
- a. Necessity of work.
 - b. What will others think?
 - c. Outcome of work.
 - d. Love of work.
 - e. Don't know.
10. A satisfying occupational choice is dependent on:
- a. What you want to do, i.e. interest and value.
 - b. What you are able to do, i.e. abilities.
 - c. What you are willing to train to do.
 - d. All of above.
 - e. None of above.
11. Strategies for gathering self information include:
- a. parents, friends, relatives, teachers, and counsellors.
 - b. Aptitude and interest tests.
 - c. Self inventories.
 - d. All of a. to c. above.
 - e. None of a. to c. above.
12. Reasons for preparing a personal inventory are:
- a. To be able to choose the one right job for me.
 - b. For personal growth.
 - c. To explore personal abilities and interests.
 - d. To assist students in choosing a suitable occupation.
 - e. b., c., and d. above.

CAREER PLANNING - ACHIEVEMENT TEST (cont'd)

13. There are a number of factors involved in appraising ourselves before deciding on a career. These include:
- a. Education, training, and acquired skills.
 - b. Interest and potential skills.
 - c. Leisure time activities and physical capacities.
 - d. Personal traits, social and economic factors.
 - e. All of the above.
14. The first thing to do in making a self inventory is to:
- a. Look at the job you want and see if you like it.
 - b. Check with a worker to see what the job is like.
 - c. Make a list of necessary self information.
 - d. Check with parents to see what you are like.
 - e. All of the above.
15. There are a number of strategies for gathering self information. These include:
- a. Parents, friends, relatives.
 - b. Counsellors and teachers.
 - c. Aptitude and interest tests.
 - d. All of the above.
 - e. A. and C. above only.
16. The main aim of doing a personal inventory is to:
- a. Know about jobs.
 - b. Help students find jobs.
 - c. Help students find a career most suited to them.
 - d. None of the above.
 - e. All of the above.
17. Past influences can help us understand ourselves better. Two types of factors mentioned in class were:
- a. Environmental and biological factors.
 - b. Roles we play and their character traits.
 - c. Goals and objectives we set for ourselves.
 - d. All of the above.
 - e. None of the above.

~ ~ ~

CAREER PLANNING - ACHIEVEMENT TEST (cont'd)

18. Knowing the personal character traits (i.e. honesty, reliability, loafing, etc.) we show in non-work situations can help us in:
- a. What others like for work.
 - b. Knowing what work is like.
 - c. Knowing what we can contribute to a work situation.
 - d. All of the above.
 - e. None of the above.
19. A personal inventory can be useful for:
- a. Determining goals.
 - b. Cross referencing with tests.
 - c. Searching out occupational alternatives.
 - d. In evaluating alternatives and deciding.
 - e. All of the above.
20. Setting goals for working toward a vocational choice is useful in that:
- a. From then on you don't have to worry about it.
 - b. It gives you an opportunity to see what needs changing and how to go about it.
 - c. It makes a clean path of action available to follow for getting a job.
 - d. You can aim high and still get somewhere.
 - e. b and c above.
21. The letters C.C.D.O. stand for:
- a. Canadian Careers in Demand Occupations.
 - b. Canadian Classification and Dictionary of Occupations.
 - c. Counselling Children Developmentally for Occupations.
 - d. Canadian Commission for Directing Occupational Research.
 - e. All of the above.
22. How many basic interest types does the Holland Self Directed Search (S.D.S.) Interest Codes have?
- a. One.
 - b. Three.
 - c. Six.
 - d. Five.
 - e. Don't know.

B

V

CAREER PLANNING - ACHIEVEMENT TEST (cont'd)

23. How many letters are there in the average Holland (S.D.S.) primary code?
- a. One.
 b. Two.
 c. Three.
 d. Four.
 e. Five.
24. The Occupational Finder accompanying the Self Directed Search:
- a. Lists jobs according to C.D.D.O. numbers.
 b. Lists jobs according to interest codes.
 c. Lists jobs according to temperaments codes.
 d. Lists jobs according to abilities.
 e. All of above.
25. Within the school the most current information concerning university requirements is kept:
- a. In the library.
 b. In the main office.
 c. In the principal's office.
 d. On the bulletin boards.
 e. In the counselling room.
26. The university will be requiring Fr. 11 and Alg. 11 as a prerequisite in the year:
- a. 1979 0 80
 b. 1980 - 81
 c. 1981 - 82
 d. 1982 - 83
 e. 1983 - 84
27. Your capacities or abilities are referred to as:
- a. Interests.
 b. Aptitudes.
 c. Skills.
 d. Personal traits.
 e. Temperament.

CAREER PLANNING - ACHIEVEMENT TEST (cont'd)

28. Which of the following is important for the interview?
- a. Neatness of dress.
- b. Knowing the names and addresses of references.
- c. Making favorable impression on the secretaries in the outer office.
- d. a. and b. above.
- e. a., b., and c. above.
29. In an apprenticeship program you must register with:
- a. Ministry of Labour.
- b. Ministry of Education.
- c. Labour Relations Board.
- d. Canadian Union of Public Employees.
- e. B.C.I.T.
30. Upon completing an apprenticeship course the worker is called a:
- a. Foreman.
- b. Carpenter.
- c. Manager.
- d. Labourer.
- e. Journeyman.
31. The Youth Employment Centre is located in:
- a. Surrey Place.
- b. Guildford.
- c. Cloverdale.
- d. Newton.
- e. King George Square.
32. When applying for a position with a company, it is important to:
- a. Know the names of the top executives.
- b. Know the secretaries.
- c. Know who is in charge of payroll.
- d. Know what the company produces.
- e. All of the above.
33. When completing a resume, which of the following is not necessary to include?
- a. Occupational objective.
- b. Marks from school courses.
- c. Reasons for leaving previous jobs.
- d. Social Insurance Number.
- e. Three references.

CAREER PLANNING - ACHIEVEMENT TEST (cont'd)

34. The purpose of a resume' is to:
- a. Show the employer that the applicant is qualified.
- b. To present a brag sheet.
- c. Show the employer that the applicant is organized.
- d. a. and c. above.
- e. a., b., and c. above.
35. Which of the following are acceptable in filling out an application form:
- a. An error in spelling.
- b. Leaving blank information that you do not know.
- c. Completing the question about type of work desire with "anything".
- d. All of the above.
- e. None of the above.
36. When using references, it is important to:
- a. Contact your references before using their names in your resume'.
- b. Use a relative for one.
- c. Use a good friend your own age.
- d. Use references from peopel you know from one activity.
- e. All of the above.
37. The required courses for Grade 12 Graduation:
- a. EN II, ALG II, PE and GU II and EN 12
- b. EN II, SS II, PE and GU II and EN 12
- c. EN II, SS II, ALG II, EN 12
- d. EN II, SS II, Bi II, ALG II
- e. EN II, ALG II, PE and* GU II, Bi II
38. The number of courses required for Grade 12 Graduation:
- a. 10 courses 3 of which must be grade 12 courses.
- b. 12 courses 3 of which must be grade 12 courses.
- c. 12 courses 4 of which must be grade 12 courses.
- d. 14 courses 3 of which must be grade 12 courses.
- e. 14 courses 4 of which must be grade 12 courses.

CAREER PLANNING - ACHIEVEMENT TEST (cont'd)

39. A career refers to:

- a. A position a person holds in a company.
- b. A group of similar jobs.
- c. The course a person takes as she/he progresses through life.
- d. A lifestyle.
- e. All of the above.

40. Which of the following is not a requirement for University entrance in 1980 - 81:

- a. EN 12
- b. FR 11
- c. SS 11
- d. High school graduation.
- e. A C+ Average.

41. Which of the following is not essential in career planning:

- a. Accurate personal knowledge.
- b. Knowledge of the world of work.
- c. Decision making skills.
- d. Making one final job choice.
- e. All of the above.

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