THE RELATIONSHIP OF PARTICIPATION IN THREE CAREER PROGRAMS AND THE CAREER MATURITY OF GIFTED HIGH SCHOOL STUDENTS

by

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TABLE OF CONTENTS

LIST OF TABLES

Chapter 1

Introduction

American educators are facing increased public demands to make education in today's technological society relevant to the needs of all students. Furthermore, the challenge dictates that schools have a key role in planning, developing, and expanding the programs which facilitate the preparation of skilled leaders to meet the needs of society. Educators should accept this challenge by helping students develop realistic and fulfilling career choices and occupational skills.

Calhoun and Finch (1975) contend that occupations created by a technological society have several characteristics that differ from previous occupations:

1. They often call for skills of higher order and for the use of more technical knowledge.
2. Their performance usually requires a more complete general education.
3. They usually involve fewer manual skills and more cognitive understanding.
4. The workers, in most instances, need more maturity in order to fill the job successfully.

Milne (1976), however, has indicated the existence of a wide gap between present demands and the lack of an educational process which will provide skilled leaders and workers for this technological age. Industry calls upon schools for a higher caliber student. Nevertheless, the schools continue to "track" the intellectual student into the college preparatory curriculum and those who can "work with their hands" into the vocational education program.

For students of exceptional intellectual ability, the forecast for the job market creates a need for career programs to provide the kinds of experiences necessary for these students to have a significant role in society. The importance of career "programming" for gifted students has been stressed by several writers (Renzulli, 1977; Stone, 1976; Stovall, 1972; Torrence, 1975). Lynn Fox (1976) has similarly indicated a need to study programs of gifted students for vocational maturity. Similar needs were revealed in a review of literature from the Research and Guidance Laboratory for Gifted Students at the University of Madision in Madision, Wisconsin.

Certain characteristics of gifted students have been known to engender problems pertinent to this population:

1. an intense interest in many things, which may lead to a more complex decision-making process when it's time to choose a career;
2. a tendency to become bored and frustrated often;

3. an awareness of their differences which may inhibit the ability to develop their own potential (Churchill, 1978, p. 7).

Hoyt and Hebeler (1974) noted some other unique career development problems of gifted and talented students: (1) The expectations of high status positions for the gifted tend to force limits on the kinds of career decisions gifted students make; (3) Work appears to be regarded by the gifted as a major means of self-expression rather than just a job; (3) Gifted students tend to choose sophisticated careers which require early commitment and heavy investments of time and money, which make career direction difficult. The high incidence of problems encountered by academically able students in career maturity indicate that gifted students have a need for career awareness, orientation, exploration, and work experience, at least as much as do average students.

Accountability is necessary in any proposed education program, according to a statement from the United States Office of Education (1974). The major question in accountability is "Does it make any difference in student learning?" With career education, the question has not been adequately answered. Many suggestions were given for the question not being addressed: (1) newness of career education programs; (2) outcomes are often long range . . . and cannot be measured; (3) lack of instruments of sufficient validity in areas addressed by career education;

and (4) some evaluations are expensive and require considerable expertise.

Although career education has been tried out extensively in the nation with continued efforts of local, state, and national advocates pursuing stronger collaboration between the schools, business/industry/labor, there have been few efforts to determine the impact of such programs on students.

This research was designed to study the relationship of three existing programs of career education on a selected population--the gifted in Richmond, Virginia. These three programs, the Alternative, Gifted, and Traditional, reflect the suggested core of activities found in most career education programs and are evaluated to assist in answering the major objective: Do these programs make a difference in career maturity of gifted students?

Statement of the Problem

In a review of previous surveys, much information could be found on the effects of career programs on specific groups, as: (1) Dropouts (Dykeman, 1977; Schrader, 1977); (2) Ninth Grade Students (Bookhamer, 1976; Thomas, 1974); (3) Emotionally Maladjusted High School Students (Karayanni, 1977); (4) Eleventh and Eighth Grade Students (Greene, 1973; Groome, 1974; Morris, 1978; Scheri, 1972; Schmoll, 1975). Since few studies (Colson, 1979) have focused on the impact of career programs on the career maturity of gifted students, it would be helpful to investigate

the impact of existing programs in this locality for gifted students. This study was specifically designed to investigate the relationship of participation in three different career education programs to the career maturity of gifted high school students. A secondary purpose of the study was to determine the relationship of selected variables (sex, grade, age, paid work experience, family income, leisure, and volunteer participation) to the career maturity of students.

Research Hypotheses

The hypotheses tested, stated in null form, were:

1. There are no career attitude differences among students in the gifted career programs when classified by programs, sex, age, grade, and family income.
2. There are no differences in levels of knowledge about occupations and career decisions among students in three career programs classified by program, sex, age, grade, and family income.
3. There are no career maturity differences among gifted students participating in three different programs, classified by program, sex, age, grade, family income, and their total competence test scores.
4. There are no differences in career competencies of program participants and paid work experience, leisure activities, and/or volunteer involvement as measured by their total competence test scores.

Need for the Research

In the past decade (1971-81) there has been massive state and federal support for the development of career education. Much of this support came in the form of monies for the development of exemplary projects that could serve as models for effective delivery system of information and materials for career education. Along with this financial support came the need to document the outcomes of such programs in as clear and concise a manner as possible (United States Office of Education, 1978). Few of these career education programs, however, have existed for gifted students.

In regard to accountability, Lessinger (1973) concluded that all educational programs in the public schools of today are subject to intense scrutiny demanded by the taxpayer. The general public is increasingly requiring that programs be able to justify their existence in terms of delivering the kinds of experience they say they are delivering.

Two of the programs in this investigation are recognized as experiential career programs. While evidence exists in the literature to support that experiential career programs serve as a viable resource for implementing career development needs of students, outcome data on student participation in these programs may provide evidence of the efficacy of these programs as well as of the traditional programs.

Definition of Terms

Career Education - The totality of experiences through which individuals learn about work as a part of their way of life and through which they relate work values to other life roles and choices. It is the process which provides people with knowledge about themselves (aptitudes, interest, values, etc.) and about the world of work to assist them to make well-informed career decisions (developed as the working definition for joint House-Senate Sub-Committee on Vocational Technical/Career Education, State of Virginia, 1980).

Career Development - A life-long process which involves a series of experiences, decisions, and interactions that are manifested both vocationally and avocationally. In curricular terms, career development refers to the behavioral outcomes of career education, primarily those related to self development: career planning and decision-making; and work attitudes, values, concepts, and skills (Bailey and Stadt, 1973).

Career Maturity - "Captures and conveys the concept of progressive change which underlies emerging career awareness, exploration and decision-making." It is viewed as the position occupied on the continuum of vocational development by an individual at any given point in time. Furthermore, "to the extent that he successfully copes with the developmental tasks of a life stage the individual can be considered as more or less vocationally mature" (Crites, 1969, p. 102).

Career Maturity Inventory - Test developed by John Crites to measure the maturity of attitudes and competencies that are critical in realistic decision making (Crites, Theory and Research Handbook, 1978).

Gifted Students - A student who consistently demonstrates high achievement or potential ability as measured by grades and test scores far above age and grade expectation in or both of the following: general intellectual ability and creative or productive thinking. The intellectually able students in this study scored above the 90 percentile or above on the Iowa Tests of Educational Development (SRA Assessment Survey).

Multipotentiality - Those specific abilities inherent in gifted and talented students whereby they can succeed in many areas and usually show interest in a wide variety of things (Gifted Child Quarterly, Summer 1977).

Gifted Career Education Program - For the purpose of this study, the gifted program represents the mentorship experience afforded students at the high school for gifted students.

Alternative Career Education Program - For the purpose of this study, the alternative program represents the internship experience of the alternative high school.

Traditional Career Education Program - For the purpose of this study, the traditional career education program consists of career experiences that are divided by grade level activities of six-to eight-week duration at grades 10, 11, and 12. Basically,

these activities are taught in the English and vocational classes. Many of the activities are planned in conjunction with required (aptitude, interest, ability) surveys or tests.

Experiential Career Education Programs - Those programs which allow students to have hands-on experience with persons already involved in an occupation.

Leisure - "Leisure" consists of relatively self-determined activities and experiences which are available due to having discretionary income, time, and social behavior; this leisure activity may be physical, intellectual, volunteer, creative, or some combination (McDaniels, 1977, p. 347).

Paid Work Employment - Jobs obtained in which hourly, weekly, biweekly, or monthly wages are paid for work completed.

Assumptions

The rationale of the study was embodied in the following assumptions:

1. The Career Maturity Inventory is an acceptable and valid instrument for assessing and measuring career maturity of students in the three programs.
2. The three programs were organized to achieve the general goals of career education as advocated by the state guidelines and objectives of the city school system.
3. The core dimensions of career education were embodied in all three programs and afforded all students.

The Alternative and Gifted programs contain an added dimension-exploratory work component.

4. The students in the three programs came from the same "feeder" schools and had prior comparable education.

Limitations of the Study

The extent to which the findings of this study can be generalized were restricted by a number of predetermined conditions. The limitations were as follows:

1. This investigation was limited to gifted students in the tenth, eleventh, and twelfth grade in three high schools of Richmond, Virginia.
2. The procedure utilized for the identification of the gifted may be unique to the Richmond Public School System, which caters to those who rank in the top three percent on standardized tests and participate in curricula which includes workshops, special programs, and advanced academic subjects. Any attempt to generalize the results of this study beyond the Richmond Public School System must be made with the aforementioned restrictions in mind.

Organization of the Study

This study will be presented in five chapters. This chapter has introduced the subject of the study and defined the problem.

In addition, the chapter has presented the research hypotheses, need for the research, definition of terms, assumptions, limitations of the study, and the organization of the study. Chapter II will present a review of the related and pertinent research and literature which will serve as a general background for the topic of investigation. Chapter III will include methods and procedures for data collection, a description of instruments to be used, population sample, and method of analyzing the data collected. Chapter IV will contain the presentation of the results of the study. Chapter V will contain the summary, discussion, conclusions, and recommendations for further research.

Chapter II

Review of the Literature

Professional literature and research studies pertinent to this study are presented in this chapter. The major topics include (1) career development and the gifted student, (2) relationship between career development and adolescent development, (3) literature on theories of career development and the career maturity construct, (4) descriptions of career education programs, and (5) studies related to selected variables of career maturity.

Career Development and the Gifted Adolescent

During recent years the process of career development has shown an increased emphasis on the individual, this self-awareness, and his occupational possibilities. In acknowledging the success or failure of the individual in an occupational endeavor, Horrocks (1976) contends that the most important criterion is the individual's level of mental ability. This by no means guarantees success in any given occupation; it is simply an indication, with other things being equal, that the capacity to succeed is present. Vocational success is dependent upon a multiplicity of factors such as drive, interest, motivation, societal forces, availability of jobs, special aptitude, and educational opportunity.

Gifted students usually comprise the upper one to five percent of the population and are considered by many persons to possess all those attributes necessary for success in society. Many theorists may take issue with this hypothesis. They hypothesize that many problematic factors are present in the career development of gifted individuals.

Hoyt and Hebeler (1974) hold that many career development needs are common to all young people; however, in the case of the gifted and talented, special needs can be identified:

1. The gifted and talented usually possess many potentialities complicated by varied interests. For this reason, career choice is often a difficult problem. Students with multipotentialities typically score well in almost all areas of aptitude and achievement in virtually all areas covered by tests in common use. They may see meaning in many pursuits; they may show concern about many aspects of life. Thus, they may have difficulty focusing their efforts and aspirations in directions which may lead to fulfillment, rather than merely accomplishment. There is clearly a need for examination of self and those things necessary to achieving fulfillment for the gifted student.

2. Expectations of parents, teachers, friends, and society in general operate to restrict the range of career choices and to pressure gifted and talented young people to achieve high levels. For most of these individuals, the clearest avenue toward the career they want to develop is through higher education. A need is clearly evident for individual experience in potential fulfillment areas in order for the student to appraise the commitment required for occupational pursuits in terms of time, finances, and personal/social sacrifices while working toward the selected goal.
3. The interests, abilities, needs, and occupational or career aspirations arise at a much earlier age in gifted students than in the regular student (pp. 104 and 135).

Gifted students need individualization and differentiation in career awareness, orientation, exploration, and preparation at a time commensurate with the growth and development of that giftedness.

The gifted adolescent is often challenged by problems faced in the career decision-making process. Specifically, these problems relate to their multipotentiality, an emphasis on current nature of

the world of paid employment and the realization that productive and satisfying lifestyles on a variety of occupational pursuits does not relieve the many anxieties that must be endured. The world of paid employment provides continuing rapid occupational change and provides a concentration of effort on accumulation of occupational knowledge. For the highly gifted who is also creative, it may not be so much a matter of accumulating occupational knowledge as a matter of inventing occupations that have never before existed (Hoyt, 1976).

Uhler (1977) called for new, radical departures for the education of the gifted that lead to innovative methods, organizations, materials, and experiences. Several procedures were recommended:

1. Exploratory partnerships with gifted and talented adults who live and work in our communities. Budding artists, gifted musicians, young linguists, and mathematics prodigies should be linked closely with adults for significant amounts of time. The talents and interest of such adults should be tapped by schools where teachers serve as facilitators and evaluators, closely monitoring the student/adult relationship and experiences in cooperation with parents. In such a relationship, informality is the essence of the experience.
2. Formal internships for gifted and talented secondary students and adults in the community at job related

sites and activities. The focus is on occupational roles and responsibilities calling for developed talents in specific areas. Specific tasks should be defined by teachers in cooperation with the adults. Unlike the partnership, the formal internship calls for independent research and projects in which the classroom teacher participates in close harmony with the talented adult.

3. Monitoring and teaching throughout the school and the community. Professional teachers at both the elementary and secondary levels should formulate teaching methods for the gifted and talented, methods they can master and use with their peers, others in the school, and with groups throughout the broader community. The latter groups could be pre-schoolers, parents, the elderly, adult, and community school students in the gifted and talented student's schools who require special and individual attention. Long overdue in every school is a systematic program for credit that enables students to teach small groups, to tutor, and to work with people of all ages seeking help in domains wherein the gifted and talented excel. The return of the gifted and talented to the limelight of research and development calls for a reassessment of this important educational activity.

The Relationship Between Adolescent Development and Career Development

During adolescence, many critical changes occur relating to biological, psychological, and social development. It is a period of transition from childhood to adulthood with accompanying changes of group belongingness and a widening of interests. Eisenberg (1965) stated that adolescence is "a crucial period of human development . . . of variable onset and duration but marking the end of childhood and setting the foundation for maturity (p. 131).

Travers (1970) observed adolescence as a developmental process which is the result of both heredity and environment. He identified the process as continuous, regular, and orderly, the rate of which varies from person to person. He concluded that the developmental process is a complicated, interrelated procedure.

Gesell's maturational development theory. Gesell (1956) emphasized the maturational development of adolescence; that is, as each year passes and maturation continues, certain behaviors are exhibited which are reflected as a distinct pattern. Such maturational development is related to career choice, and since this study involves the career maturity of tenth, eleventh, and twelfth graders, Gesell's study is important in an understanding of when and how career choices are made by adolescents.

Although Gesell is credited with the development of the maturational patterning theory of adolescent development, other researchers also participated in the 1956 study involving youth from ages 10 to 16. In this study, numerous dimensions were examined, including physical measurements, personal habits, interpersonal relationships, values, attitudes, and emotions. However, the sample selected by Gesell et al., was not representative of children of that range within the normal population; 52 percent of the youngsters of this study were from homes in which the fathers were reported to be in professional occupations, while only 6.2 percent of the students from an urban area were from homes with fathers employed in the professions.

In examining the data collected from tests and interviews completed by students aged 14 to 16 years, the following observations were realized:

1. The 14-year old has become friendlier than he had been at age 13; he now tends to solve disputes through verbal argument rather than by physical means. He usually belongs to a group and readily joins and participates in student organizations, including student government.
2. The 15-year old is characterized by a deep interest in gaining self-understanding, as well as understanding others. He has become increasingly quiet, more sensitive and independent. He actively seeks peer

acceptance, which tends to be reflected in more family problems. In school, he enjoys speakers and panel discussions but still requires definite assignments.

3. The 16-year old has become more tolerant of others; he is self-assured and his emotions are more controlled. At this time, his main worries revolve around school; while he is not concerned about achievement in terms of competition, he stresses the necessity of achieving up to his own potential. He has a strong interest in his future career, education, and marriage.

As Gesell and associates followed the development of groups of children from birth to age 16, Gesell concluded that a rythmic developmental pattern exists in which certain themes are repeated at various age groups.

Havighurst's theory of developmental tasks. Havighurst (1956) proposed that adolescent development is a series of developmental tasks. He defined such a task as one:

> . . . which rises at or about a certain period in the life of an individual, successful achievement of which leads to his happiness and to success with later tasks, while failure leads to unhappiness in the individual, disapproval by society, and difficulty with later tasks (p. 215).

Havighurst (1952) described the developmental tasks as arising from three sources: (a) physical maturation, (b) cultural pressure, and (c) individual aspirations. He listed ten developmental tasks

which the adolescent must master. Such tasks include (1) development of socially approved sex role and the achievement of intra- and interpersonal relationships, (2) acquisition of a set of values and the achievement of socially responsible behavior, (3) attainment of emotional and economic independence, (4) preparation for marriage and family life, and (5) selection and preparation for an occupation.

Havighurst (1964) presented an interpretation of how the normal developmental tasks at each successive age level are associated with the learning of an occupational role. There are six stages to his theory of vocational development, of which the first three or four are important for an understanding of vocational choice and adjustment behavior. His stages of vocational development are:

1. The child from ages 5 to 10 years of age identifies with a worker, usually a parent or other important person in the child's immediate environment. The concept of working becomes an essential part of his ego ideal.
2. From ages 10 to 15 years, the child learns to organize his time and energy to complete a task whether at school or at home. He also learns that he must put work ahead of play, depending upon the situation.
3. A youth from ages 15 to 25 years of age must acquire an identity as a worker in the occupational structure.

He must choose and prepare for an occupation and gain work experience as a basis for sound occupational choice and for the assurance of economic independence.

4. Between 25 and 40 years of age, the young adult is concerned with becoming a productive person, mastering the skills of his chosen occupation and rising within the occupational structure.

Havighurst's vocational developmental tasks, as suggested by Borow (1976), provide a basis for vocational development and lessons which are relevant to occupations appropriate to the behaviors exhibited by adolescents.

Career Development Theory Related to Current Study

Developmental/self-concept theories. The developmental approach to vocational development assumes that an individual is characterized by different values and concerns as he moves through stages of vocational maturity. The individual does not choose an occupation, but makes a series of occupational and occupationally related decisions at different stages which result in vocational choices. Many theorists have supported this concept of career maturity (Super, 1972; Ginzberg, Alexrad, and Herma, 1951). Super postulated that the process of vocational development is essentially that of developing and implementing a self concept. According to Super, a person in expressing a vocational choice puts into occupational

terms his idea of the kind of person he is; that is, entering an occupation he seeks to implement a concept of himself. Getting established in an occupation makes possible the playing of a role appropriate to the self concept. Self concepts are formed in early experiences with other people and situations; they are translated into occupational terms through identification, experience, and observation. Self concepts are implemented as the individual makes educational and occupational plans and modifies them based on experience. In fact, Sanderson and Helliwell (1978) suggest that vocational choice is an experience of the self.

Conceptions of self have had a central role in these approaches because they serve as at least a partial basis for explaining occupational choice. The self concept theory is one of the most comprehensive theories of occupational choice and vocational development. Super et al. (1960), like Ginsberg, conceives of occupational choice as a process extending over a period of time. Super et al. (1957, p. 48) defined vocational choice as the implementation of self concept. They suggest that vocational development is an on-going, continuous, generally irreversible, orderly, patterned, and dynamic process which involves interaction between the individual's behavioral repertoire and the demands made by the society. Here, Super's et al. theory and Ginsberg's theory are in direct agreement; that essentially, vocational choice is a process of synthesis or compromise among role factors, personal factors, and situational factors. Super et al. (1953) have identified the elements of

the self concept theory as the process of:

1. Self concept formation;
2. Translation of self concepts into occupational terms;
3. Implementation of self concept.

The sociological model. The proponents of the sociological viewpoint suggests that circumstances beyond the individual's control contribute significantly to career choice. One's environment is seen as the most important influence in shaping career choice and the principal task of the individual is to develop coping techniques. Environmental adaptation techniques act as constraints upon the individual, modeling certain careers as desirable, and others as appropriate (Hewer, 1963).

Caplow (1954), Hollingshead (1949), and Miller and Form (1951) are among those who have espoused the sociological viewpoint, which has also been termed reality, situational, and "accident" theory. Caplow (1954) suggested that several environmental factors affected career choice: (a) parental pressure, (b) amount of formal education, and (c) social status. Adolescents are well aware of the differential prestige attached to vocations and their position within the social structure; furthermore, their perceptions of vocations are conditioned by the social class in which they have been reared (Hollingshead, 1949).

Miller and Form (1951), through the use of 276 case histories of workers, identified six work stages and fourteen career patterns. The six work stages reflect the social adjustment of the worker:

(1) the preparatory; (2) the initial work period which generally includes part-time work while the youth completes school; (3) the transition from school to work; (4) the trial stage, lasting about three years, during which the worker shops around for jobs; (5) the stable period in which he settles down to work at one or more jobs for lengthy periods of time; and (6) the retirement stage in which he winds down, being involved less and less in paid work.

In their extensive investigations through case studies, Miller and Form described the vast amount of floundering that occurs in the trial period and that "chance experiences undoubtedly explain the process by which most occupational choices are made" (p. 650). However, factors other than chance are involved in career choice. Miller and Form stated that the socio-economic status of the family (father's occupation, social status, and educational status), the intelligence of the individual, the social and economic conditions of the times, and the influential contacts and financial aid the parents are able or willing to give are among those nonchance factors. Miller and Form stressed that the socio-economic status of the family acts as a constraint for a general social status group, not for an individual, in determining career choice. They remarked that:

> An accurate weighing of the facts will demonstrate that the social background of the worker is a base of opportunity and limitations. As opportunities are enlarged, the possibilities of occupational mobility are increased. Personal motivation and work are necessary components to an enlarging career pattern. However, there is good evidence that the

> social backgrounds of workers are the crucial determiners in the number who are able to come into various occupational levels (Miller and Form, 1951, p. 739).

Crites (1969) distinguished between those factors which are really chance and those which are contingency factors. He stated that chance factors are unplanned, unpredictable, and fortuitious while contingency factors are predictable. Many of Miller and Form's factors are really contingency factors, such as social and economic conditions of individuals.

However, Hewer (1963) noted that the counselor should pay attention to the client's social class since it may indicate the range of occupations which he is willing to consider and that vertical mobility may cause a client anxiety. Furthermore, the labor demands at the time may be such that the individual may not be able to exercise the privilege of choosing a vocation.

Katz (1970) concluded that the interaction of social and cultural values determines the vocational interest of the student. While the student makes occupational decisions to satisfy his own individual needs, those interests are shaped by his environment which delimit his choice options. Cultural moves prompt certain decisions; social status delineates the range of possible choices, and one's own interest are satisfied by trying out the occupation.

Lynn (1960) determined that different values exist between socio-economic groups as to factors deemed important to work. Lower socio-economic groups preferred jobs offering economic

benefits and security while middle-class persons desired a job offering self-expression and congeniality.

Ginzberg, Ginsburg, Axelrad, and Herma (1951) disagreed with the sociological model of career choice and stated that neither the accident of birth (which establishes family, race, social class, and nationality) nor impulse (which explains a person's occupational choice in terms of unconscious factors) can explain occupational choice. According to Ginzberg and associates, the sociological model assumes that the individual is passive and impotent to the choice process; nor can the sociological model explain why one individual in a family can attain great success while other members raised under similar environmental circumstances cannot achieve any degree of success in the educational or occupational worlds.

The sociological model's emphasis on the importance of the environment in shaping career choice, as well as the interaction of "chance" factors and the environment, has led to an understanding that many factors may influence career choice.

Sociological approaches to career development attempt to explain the social structure of which the individual is a part and the impact of this structure for future choices. It is difficult for an individual to prepare for that which he does not know.

It is increasingly evident that social factors interact with vocational development. Lipsett (1962) and, similarly, Caplow (1954) pointed out specific social factors as implications for vocational development and that many of these factors are beyond the control

of the individual: (1) social class membership, (2) economic conditions, (3) geographic mobility, (4) social change, (5) home and community, (6) pressure groups, (7) role perception, and (8) education.

Decision-making. Decision-making involves a series of decisions occurring over a period of time and is tied to a desire to fulfill aspirations and needs through an appropriate life style.

Tiedeman and his associates divided the overall process of vocational decision-making into two aspects: a period of anticipation and a period of implementation or adjustment. Stages were identified within each period, noting that the succession of these stages represents a progressive realization of the individual's goal as he enters and advances in his chosen position. Tiedeman and O'Hara (1963) have conceptualized decision-making in relationship to career choice. They view occupational development as a continuous process. An individual faces a series of lifelong problems and decisions and goes through these states for each problem:

1. Exploration. The person begins to explore possibilities and/or alternatives. Reflection is projected upon aspiration's opportunity now and in the future.
2. Crystallization. The person makes a tentative decision or series of decisions, which lead to an actual choice of a goal and related activities.

3. Choice. The person makes a commitment to an occupation.
4. Clarification. This is an adjustment place in which the person attempts to clarify an anticipated position (Tiedeman and O'Hara, 1963).

The implementation component contains three stages:

1. Induction--a stage in which the person begins to implement choice. The degree of success experienced determines whether the person goes back to the exploration state or continues through reformation and interaction, which leads to stabilization. An individual identifies with the purpose of the new group.
2. Reformation--an individual is immersed in the relevant group and a strong sense of self and activity enjoins to the group to do better. The individual may question the purposes of the group and may try to change the group somewhat (Osipow, 1973).
3. Integration--involves the process by which the individual resolves his individuality and the group's demands and integrates the two in some way (Osipow, 1973).

Conclusively, the decision-making theory is concerned with formulating alternatives, gathering information, considering the advantages and disadvantages of the alternatives, and making rational choices (Sanderson and Helliwell, 1978).

Although the decision-making approach to vocational choice is based upon Keneysian economic theory, that "one chooses a career or an occupational goal that will maximize his gain and minimize his loss," the gain or loss is not necessarily money but anything of value to the person. Herr and Cramer (1972) contend that individuals choose alternatives that promise the most reward for self-investment with the least probability of failure.

In acknowledging support to this concept, Brayfield and Crites (1964) purport that choice occurs under conditions of uncertainty or risk. Blau et al. (1956) believed that a choice between various possible courses of action can be conceptualized as motivated by two interrelated sets of factors: an individual's valuation of different alternatives and his appraisal of his chances of being able to realize each of the alternatives (p. 533). Davidson et al. (1957) espoused a process of decision-making about uncertain outcomes, requiring reconciliation of general factors: the relative valuing of the outcomes, the cost of attaining the outcomes, and the probability that each outcome may occur. Katz (1966) described decision-making as the identification and defining of one's values: what they are and what they are not, where they appear and where they do not.

To the gifted individual, career development is a process of becoming. According to Milne (1979), the decision-making process in reality is continuous and the student is always seeking satisfaction at a higher level. The student maintains this status

through gaining efficiency and specialization in work activities (pp. 251-252). Consequently, in support of his thesis on decision-making, Milne graphically illustrates the need for continuous growth and development in the student's search for a career through an Educational-Occupational Interactive Model shown in Figure 1. This model orchestrates the blending of educational and occupational experiences with the unique characteristics of the gifted and talented individual.

Trait and factor theory. According to Herr (1970), "Trait and Factor Actuarial Theory of Vocational Choice is the oldest, and most straightforward of the approaches pervading theory practice in vocational development" (p. 18). Herr cited the characteristic assumptions of the trait and factor theory and then alluded to the shortcomings of the theory. According to this theory, each person is "keyed" to one or few occupations.

Among the ardent proponents of the Trait and Factor Theory of Vocational Choice are: Parsons (1909); Lindzey and Hall (1970); and Williamson (1965). Parsons (1909) characterized the doctrines of the theory as:

1. People have different traits;
2. Each occupation requires a unique set of characteristics of its members; and
3. Vocational guidance should match people and jobs.

Although the Trait and Factor Theory has been in existence for a long time, it is still popular, especially in guidance and

CAREER EDUCATION

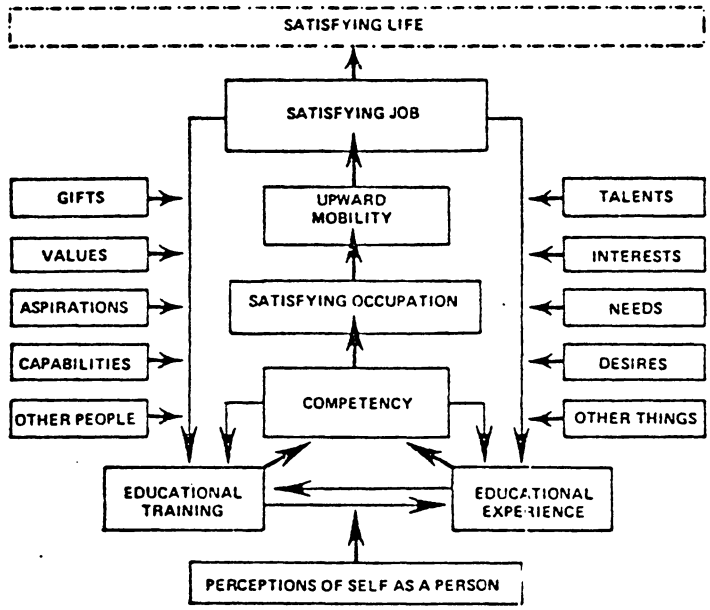

FIG. 1. An educational-occupational interaction model.

Source: Bruce G. Milne et al., Vocational Education: A Challenging Alternative for the Gifted and Talented Student (Vermillion, S.D.: Educational Research and Service Center, 1976), p. 12.

counseling. It is believed that the factors affecting human behavior may be objectively identified and that traits differentiating successful individuals and unsuccessful individuals may be identified. Lindzey and Hall (1970) in their factor theories suggest that one of man's characteristics is that he is an organized pattern of varied capacities which can be identified through objective instruments. This theory suggests that individuals have certain traits which will make them best able to do a given job and, further, that these traits may be identified and matched with the right job.

Herr (1970), having analyzed the trait and factor theories, pointed out that they are too static and do not provide for or consider the dynamics, the changing of the individual, or the environmental situations which will confront him and to which the individual must relate periodically throughout life. Zaccaria (1970), in criticizing the theories, suggests that occupational choice does not occur at a given point in life but is rather a developmental process. He rejects the notion that people are "keyed" to correct occupations; rather, each person is capable of being successful and satisfied in several jobs.

The Career Maturity Construct

The term vocational or career maturity was proposed by Super (1957) to describe the progression of vocational development which continues throughout an individual's life from childhood to old age.

In a restatement of the concept, Super referred to vocational/career maturity as the "degree of development the place reached on the continuum of vocational development from exploration to decline" (Super, 1957, p. 186). The term "vocational maturity" was used initially by Super, but "career maturity" is now applied as a synonymous term (Super, 1974). Although Super originated the career maturity construct, Ginzberg and his associates (Ginzberg, Ginsburg, Axelrad, and Herma, 1951) were among the first to hold that vocational choice is a developmental process and not exclusively a matter of matching personal traits to jobs as trait-factor theorists (Parsons, 1909; Williamson, 1939) had suggested. Ginzberg described career development as a process composed of three periods: fantasy (childhood to age 10 or 12), tentative (ages 12 to 18), and realistic (ages 18 to 22 or 24). In each period, individuals face certain developmental tasks. Future vocational development is dependent upon the success with which the individual deals with these tasks (Ginzberg et al., 1951).

Super also built upon the work of the developmental psychologists by applying Charlotte Buehler's five life stages (growth, exploration, establishment, maintenance, and decline) to career development. In each stage, there are developmental tasks that must be accomplished before the individual can move on successfully to later stages. Developmental tasks (Super, Starishevsky, Marlin, and Jordan, 1963) are identified for each of the following stages: Crystallization (ages 14 to 18), Specification (ages 18 to 21),

Implementation (ages 21 to 24), Stabilization (ages 25 to 35), and Consolidation (age 35 plus).

The Career Pattern Study, a longitudinal study of ninth-grade boys, provided the opportunity for Super (1953) and his associates to expand and articulate their concept of career maturity construct. While involved in the Career Pattern Study, Overstreet, Morris, Dublin, and Heyde (1960) also developed a classification system for the various hypothesized dimensions of vocational maturity.

The following presents a list of the dimensions and the indices of each that were postulated by Super, Overstreet and Associates:

Dimensions and Indices of Vocational Maturity

Dimension I. Orientation to Vocational Maturity

- a. Concern with Choice
- b. Use of Resources of Orientation

Dimension II. Information and Planning about the Preferred Occupation

- a. Specificity of information about preferred occupation
- b. Specificity of planning for the preferred occupation
- c. Extent of planning activity

Dimension III. Consistency of Vocational Preferences

- a. Consistency of vocational preference within fields

b. Consistency of vocational preference with levels

c. Consistency of vocational preferences within families (fields and levels)

Dimension IV. Crystallization of Traits

a. Degree of patterning of measured interests

b. Interest or maturity

c. Liking for work

d. Degree of patterning of work values

e. Extent of discussions of rewards of work

f. Acceptance of responsibility for choice and planning

g. Vocational independence

Dimension V. Wisdom of Vocational Preference

a. Agreement between ability and preference

b. Agreement between measured interest and fantasy preference

c. Agreement between measured interest preferences

d. Agreement between occupation level of measured interest and level of preference

e. Socio-economic accessibility of preference (Super, Overstreet et al., pp. 33-34).

Only six of these 20 indices were found to be adequate as measures of career maturity with ninth-grade boys in Career Pattern

Study. Those six are: concern with choice, acceptance of responsibility for choice and planning, specificity of planning for the preferred occupation, extent of planning activity, and use of resources in orientation (Super, Overstreet et al., 1960, p. 143). Super and his associates concluded that the indices that were not found to be adequate measures of career maturity in ninth-grade boys might be more relevant at other times.

The dimensions and indices of vocational maturity developed through the Career Pattern Study has served as a framework for further research into career maturity. Crites, an associate of Super, built upon work done in the Career Pattern Study in developing his own model of career maturity in adolescence. Crites' model groups the indices of career maturity into four general factors or dimensions: (1) consistency of career choice, (2) realism of career choices, (3) career choice attitudes, and (4) career choice competencies. The first three have to do with conative or attitudinal aspects of career maturity while the last dimension deals with the cognitive or intellective aspects of the construct. Crites was the first to make this distinction between attitude and cognitive aspects of career maturity (Super, 1974).

Other theorists have made significant contributions to the construct of career maturity and its measurement: O'Hara and Tiedeman (1959); Gribbons and Lohnes (1968); Westbrook (1970); and Super, Bohn, Forrest, Jordon, Lindeman, and Thompson (1971).

Descriptions of Career Education Experiences

Literature has revealed that programs in the high schools which focus on career development of the gifted and talented are almost nonexistent. A recent study by Colson (1979) cited existing programs available in regular high schools in the state of Texas. According to Colson, these programs are "prototypes of the kinds of programs available throughout the nation" (p. 30). Briefly, these programs are summarized as follows:

1. Off-campus night course. Reading is the focal point of this program. Enrolled students are freed from a class during the day and meet a night session once a week.
2. Humanities core curriculum. A program, interdisciplinary in nature, covering art, music, drama, English, and social studies, sometimes involving team teaching.
3. Advancement placement. Advance placement courses are college-level classes which culminate in examination for advancement and/or credit granted by many universities across the country. Sponsored by the College Entrance Examination Board, Advancement Placement (AP) is a concept which some schools combine with their honors program.
4. Independent study. Usually associated with an academic class, this type of program is usually limited to one or a few superior students. Some school districts include this as a part of the honors program.

5. Gifted student seminars. Directed by college counselors or instructors, seminars usually meet weekly or biweekly on college campuses.
6. Major works/honors program. Often, more work--not necessarily planned to challenge bright minds or to build on the interests and learning styles of gifted young people--is the result.
7. An alternative program within a regular high school. A program designed to combat the "disaffected attitudes" and low levels of achievement by capable students who desire more relevancy in the curriculum and off-campus projects are a hallmark of this program.

Long-term career education programs. Many programs, innovative and traditional, are being implemented in many school systems throughout the nation. The duration of these programs may have an impact on the relative effectiveness of career development of the participants. This investigation encompasses some long and short term spans of the participation of students in career programs. The descriptions which follow are timely for this study.

The Developmental Career Guidance Project (DCGP) has been recognized as one of the most comprehensive projects to be funded by the Office of Economic Opportunity. This project is co-sponsored by the Detroit Public Schools, Wayne State University, Plans for Progress, and College Entrance Examination Board (Leonard, 1968).

The activities involved in the program: (1) individual and group counseling, (2) disseminating education and occupational information through individual classes and special assemblies, (3) broadening a perspective through weekly field trips to industries and speakers invited to school, (4) working with parents, both providing information and advising, and (5) working with the community, particularly through class liaison with community agencies and neighborhood organizations. A major component of the program is to show relationship between subject matter with the world of work and self-development (Leonard, 1968). Leonard's report of the study did not unfold testing procedures or statistical procedures.

Further reports from Leonard (1968) indicated that: (1) it is possible to raise the aspirations of youth through a structured career education program; (2) students within such a program had greater certainty of career choice than students in non-career programs; (3) the values of students within the Developmental Career Guidance Project changed to "choice of a career where the student can get ahead" versus no change in values for the control; (4) a significant increase in the number of students who planned to graduate from high school was reported by the DCGP group over the control group; (5) a greater variety of careers was considered by the experimental group over the control group; and (6) 53 percent of the DCGP group entered college or other schools after graduation versus 35 percent of similar students in the non-career programs.

Leonard and Friend (1975), in an update on the Developmental Career Guidance Program, reported that students involved in the career education significantly increased their (1) level of aspiration, (2) occupational knowledge, and (3) level of achievement, over the level attained by the control group.

Thomas and Omvig (1975) investigated the relationship between career education, sex, and career maturity. Selected to participate in this study were 2,600 sixth-grade students and 2,600 eighth-grade students. The final sample consisted of 115 male and 123 female sixth-grade students, of which 117 were involved in career education programs and 115 were not. The researchers administered the Career Maturity Inventory as a pretest and a post-test measure. For all Attitude and Competence Tests, the mean scores of females were higher than scores of males. At the eighth-grade level, females achieved higher mean scores for Self-Appraisal, Occupational Information, Planning and Attitude. The researchers concluded that career maturity could be enhanced through a career education program, and that career maturity is developmental with females exhibiting a greater career maturity than males.

Kershner and Blair (1976) completed an evaluation of the experience based career education program administered in Philadelphia by Research for Better Schools under a grant from the National Institute of Education. As a part of the evaluation, these researchers investigated the effect of the career education program on the career maturity of tenth-, eleventh-, and twelfth-

grade students. They compared pretest and posttest scores on the Career Maturity Inventory using a .10 Alpha level. There were no significant pretest changes for the twelfth-grade students (second year in program). For a combined group of tenth- and eleventh-grade students (first year in program), significant pretest to posttest changes were identified on all the career maturity measures. The tenth-and eleventh-grade group was also compared to a randomly selected control group (non-career education) of students. The experimental group was found to exhibit significantly higher career maturity scores for every subject. These findings led the researchers to conclude that experienced-based career education programs as operated by Research for Better Schools had a high degree of effectiveness.

Another long-term program currently operating and considered a community-based program is the Executive High School Internship of America. This program, headquartered in New York, assists school districts throughout the country to develop and implement programs for high ability junior and senior high school students (Cox, 1979, pp. 241-242). Participating schools grant qualified students a one-term leave from all classes. The students receive academic credit in regular subject areas while they work with key decision makers in the community. Each participating student serves as a special assistant to leading executives in government, business, media, the arts, law, social services, health, and civic affairs. Weekly seminars help to reinforce management and

decision-making skills. The students receive no salary, but the work experience often leads to part-time employment (summer) and permanent employment. This experience personifies Milne's educational-occupational interaction model because it assists the participant in his perception of himself as it interacts with the antecedents necessary for a satisfying life.

Of specific concern to this study was a project conducted by Colson, Godsey, Mayfield, Nash, and Norman (1979) in their evaluation of gifted and talented students. The population consisted of 19 gifted high school students. Four instruments were administered: (1) Strong Campbell Interest Inventory, (2) Career Maturity Inventory, (3) Self Directed Search, and (4) CEMS (developed by Texas Education Agency). The participants indicated a greater vocational maturity on the Career Maturity Inventory Attitude Scale, higher scores on the Competency Test of the Career Maturity Inventory, and a greater problem-solving ability than the level of these same variables by the participants prior to treatment. Colson et al. concluded that a career education program was beneficial to the talented student in attaining a greater career maturity than the level of maturity prior to treatment.

Short-term career education programs. Hamdani (1977) studied disadvantaged inner-city adolescents enrolled in an experimental vocational development program. The program provided career counseling and incorporated career education activities into traditional academic subjects. Additionally, the program provided

extra-curricular activities that were designed to engage students in a variety of career development activities, including modeling, field trips, simulation gaming, laboratory studies, and videotaping. The results of the career education program indicated that the posttest mean scores of the students increased significantly over the pretest scores on the Career Development and the Career Maturity Inventory.

Swails and Herr (1976) in a short term small group experience attempted to determine if these experiences could facilitate growth of vocational maturity. The sample consisted of 96 ninth-grade students, 44 males and 52 females, drawn from a population of 300 students. Only those students who indicated an interest and had parental permission were included. Students were assigned to 12 eight-member groups by random stratification. The groups were stratified by sex and performance on a pretest using the selected sections of the Vocational Development Inventory. The twelve groups were randomly assigned to one of four conditions: (1) relationship counseling, (2) group counseling with the use of taped models, (3) game playing using the Life Career Game, and (4) a control group. Each group met weekly with a counselor to discuss educational and vocational concerns and plans. Statistical data was not provided in the study; however, the authors stated that no significant differences were obtained for growth in the attitude dimension of vocational maturity as measured by the Vocational Developmental Inventory.

Another short term counseling program devised to increase the vocational maturity of youth was reported by Brandt (1976) on the effectiveness of a ninth grade pre-vocational program. The program lasted four weeks and the maturity of vocational choice was determined through pretesting and posttesting in which the Career Maturity Inventory was administered. The treatment groups and control group consisted of a total of 204 ninth graders. The researcher reported increases in the growth of vocational choice competencies of the treatment group over the control group; however, the increase in posttest scores over pretest scores for the treatment groups over the control group did not attain significance. In this study, school achievement was positively correlated with (interest) in career planning, and attitudes toward school were positively related to the maturity of vocational choice attitudes. School achievement was positively related to vocational choice attitudes. Brandt reported that the four-week career education program appeared to benefit the low achiever more than the high achiever.

Experiential Education and Career Maturity

Career education encompasses all experiences which mold human beings into responsible and productive members of society. It not only makes possible but also requires personal, occupational, and vocational introspection, growth, and evaluation. The process is life long and should be dynamic and interdisciplinary.

At the Commissioner's National Conference on Career Education, Houston, Texas, 1976, a report of a study of opinions and practices regarding career education for gifted students indicated that the most effective practices feature: independent learning; flexibility in scheduling and assignments; extensive use of community settings and field resources people; greater in-depth experiences than those provided most students; hands-on experiences; cooperative planning involving students, parents, teachers, and resource people; considerable student assumption of responsibility for learning; individualized instruction and counseling; and special career reports, field trips, and career days (Career Education Conference Report, 1976, p. 218).

The study, completed in Illinois, was exploratory and utilized the descriptive survey method to obtain the data. A review of literature and options of knowledgeable educators indicated that:

1. Current programs for differentiated career education experiences for exceptionally gifted and talented students are few in number and tend to be isolated throughout the United States.
2. Those exceptionally gifted and talented students in Illinois who participate in career education activities generally do so as a part of programs and practices provided for these students.

The current study under investigation has revealed similar conditions as the Illinois study. Differentiated career education

programs were found in existence at only two secondary schools in the Richmond system and these are included in the study.

Through active participation in the real world of work, students can discover new career options as well as dispel preconceptions and illusions. These discoveries can allow students to base career decisions on fact rather than conjecture. The highly individualized nature of experiential experiences (mentorship, internship, etc.) provides relevant learning which extends beyond the traditional classroom approach and utilizes the resources of the community.

A variety of career education, career exploration, and career counseling programs have been established with the objective of facilitating career development in students. Such programs differ greatly in their duration and in the number of hours students spend per week in activities related to career development. The outcomes of the career programs also differ tremendously. Of the career education evaluation studies located by the investigator, the number of programs successful in elevating the career maturity of program participants was greater than those failing to demonstrate any significant impact on the career maturity of students. In general, career education programs which have been most effective are those that continue for a year or longer, that utilize the greatest proportions of students' time, and that involve several aspects of the students

in class and extracurricular activities. The section that follows is a review of some experiential career programs that have been evaluated. Attention is given to results of studies that may have implication for the current investigation.

Carey (1977) studied an experience-based career education project in Kanawha County, West Virginia. The program included career counseling, the placement of students at various work sites, and the incorporation of a career education emphasis into some academic coursework. When evaluated, no significant career choice attitude maturity as measured by the CMI-A could be attributed to program.

An experiential career education program investigated by Dykeman (1977) was judged to be a success in elevating the career maturity of 14- and 15-year old potential school dropouts. The program provided a combined job placement and classroom activity to students for four hours per day. The career maturity impact of the program was evaluated using the Career Development Inventory and a pretest-posttest control group design. It was found that students in the project performed better than those in the control group.

Schrader (1978) studied an experience and career exploration program of 14- and 15-year old potential dropouts. The Career Maturity Attitude Scale and Competency Test were used to evaluate the impact of the program. The students in the program performed

better than the control group on the Attitude Scale but did not perform better than the control group on any of the Career Maturity Competence Tests. This project affected career choice attitude maturity but was unsuccessful in significantly affecting the career choice competency maturity of its participants.

A short term career exploration program that included group career guidance and field trips to work sites was studied by Bookhamer (1977). The Career Maturity Attitude Scale was used to evaluate the impact of the program, and no significantly greater career maturity progress was found for the students in the program when compared with the control group.

Correlates of Career Maturity

Past research has explored possible correlates of vocational maturity and has produced a variety of data. Super (1955) presented four categories of correlates: bisocial (physical and intellectual), environmental, personal, and developmental.

The developmental task correlates of vocational maturity identified by Super (1955) include such factors as independence training, group acceptance, school achievement, school activities, community participation, and work experience.

Specific to this study are those correlates (bisocial--sex, age), environmental (family income), and developmental (leisure, volunteer participation, and work experience).

Sex. The bisocial correlate, sex, has produced contradictory research findings regarding the relationship to career development.

Although Crites (1974) has claimed no significant difference between scores of men and women on the Career Maturity Inventory, the results of several studies do not support his claim. Richardson (1974) cites Weinstein, Carlson, and Osipow as writers who critiqued the Career Pattern Study and found that it was conducted only with male subjects. The theory of career development is based on this study, and Richardson (1974) believes this raises questions as to the adequacy of present theory in explaining female career development.

Other studies have supported Crites' theory through the last decade. Gribbons and Lohnes (1968) in their study of emerging careers used the Vocational Development Inventory and found no significant differences in scores of males and females. The Career Maturity Attitude Scale was administered to emotionally maladjusted high school students by Karayanni (1977), and no significant differences by sex were found in the scores.

In contrast to Crites' position of no sex differences, a significant number of studies have found that women obtain significantly higher scores than those obtained by men. In a study of sex differences in the maturity of vocational attitudes of adolescents, Smith and Herr (1972) found that females scored significantly higher than males. Although the differences found were low, Smith and Herr concluded they were significant. Smith again(1972), in her study of the vocational maturity of eighth-and tenth-grade students, found females scored significantly higher than males on the Vocational

Development Inventory (renamed CMI, 1973). Currie (1974) studied urban, suburban, and rural adolescents using the Vocational Development Inventory and revealed similar findings.

Herr and Enderlein (1976) and Mintzer (1976) studied high school students and found that women usually scored significantly higher than men on the Career Maturity Attitude Scale. Omvig and Thomas (1975) found significant differences in scores of females for sixth- and eighth-graders on most of the scales of the Career Maturity Attitude and Competency Test. Groome (1974), in a study of interaction effects of sex and ability on Career Maturity, found significant differences between male and female scores, with females scoring higher on the Career Maturity Inventory.

Although some criticism has been directed at the norming sample of Crites' instrument, there appear to be other reasons for sex differences in many studies. Social and physical maturation rates for the sexes are present as a part of the normal development process of individuals. Consideration should also be given to the matter of developmental tasks which occur differently as males and females negotiate these tasks.

Socio-economic status. A relationship of vocational maturity and the environmental variable, socio-economic status, has been found in several studies. Socio-economic status was found to be significantly correlated with Gribbons' and Lohnes' (1964) Readiness for Vocational Planning Scales, with Super's (1960) Indices

of Career Pattern Study, and Crites' (1961) Vocational Development Inventory. Super and Overstreet (1960) stated:

> Whether socio-economic status is related to maturity of vocational behavior, and if so, in what ways it may be related to such behavior, is unknown. We hypothesized that the more favorable the socio-economic status, the more mature the vocational behavior, on the assumption that more planful types of behavior are encouraged at the higher socio-economic levels and that planfulness is indicative of vocational maturity (p. 79).

Several studies have confirmed a positive relationship of socio-economic level to vocational development. Roe (1957) supported antecedent conditions as family interpersonal atmosphere; Super (1957) hypothesized that vocational development is related to various non-developmental psychosocial variables as family attitudes.

Other studies have yielded data which tend to deny the significance of the relationship between socio-economic status and vocational maturity. Cover (1968), in a study of high school students, presented a non-significant correlation of -.13 between scores on a measure of vocational attitude maturity and socio-economic level as indicated by the father's occupation. Data collected by Crites in the Vocational Development Project gave reason for questioning the nature of the relationship between career maturity and socio-economic status. Studies of vocational attitudes in relation to background variables yielded largely negative findings. Therefore, Crites (1969) concluded on available evidence that socio-economic status and vocational attitude maturity may have little correlation.

Age. Some investigators have studied the relationship of vocational behavior and age differences. Davis, Hagan, and Strouf (1962) and O'Hara (1962) provided evidence that realism in occupational decision-making increases with advancing age. Davis et al. and O'Hara investigated the validity of Ginzberg's theory of occupational choice with respect to periods of occupational choice. Their data showed that maturity of occupational choice is a function of age.

Montesano and Geist (1964) attempted to use reading achievement and economic background to investigate differences in occupational choice between ninth- and twelfth-grade boys. Their findings showed that ninth-grade students responded to interest and personal-need satisfaction, while assessment of abilities was the least-used category. The twelfth-grade population was found to be more concerned about occupational conditions in the working world than personal interest and needs.

Nelson (1963) attempted to determine how different age groups compared in vocational knowledge by using four major areas: (1) title of job, (2) description of job, (3) job interest, and (4) student response to interest--favorable or unfavorable. His findings indicated that older children exceeded younger children in accurately naming and describing jobs.

Terrell (1979) reported conflicting data. In analyzing the relationship of occupational preferences with selected variables of junior and senior high school students, she found no significant

relationship or interaction for age with occupational preference and educational aspiration.

Paid Work Experience. Work experience has been hypothesized as beneficial for vocational development in adolescence. Noblitt and Asher (1971) suggest that:

> Since the developmental process of finding themselves is of such great importance to adolescents, it could conceivably be hypothesized that this serves as a motivation to seek meaningful employment (p. 225).

Voluminous career development literature acknowledges that work experience assists adolescents to gain emotional and economical independence, serves as a base for occupational choice, presents a feel for the discipline and alleviates some of the adjustive school-to-work transition which adolescents must make (Super, 1957; Havighurst, 1964); Keil, Riddell, and Green, 1966; Ginzberg, 1971).

Research on the benefits of work experience has been somewhat contradictory. Gibb (1966) studied self-actualization in college juniors. Using a questionnaire and Shostrum's Personal Orientation Inventory, Gibb found a significant relationship between self-actualization and work experience prior to entering college. Conversely, the amount of work experience in high school was found to be nonsignificant. Super and Overstreet (1960) in the Career Pattern Study reported work experience to be an insignificant variable in predicting career maturity for males at the ninth grade. Yen and Healy (1977), utilizing two scales of the New Mexico Job Application Procedures Test and the New Mexico Developmental Test,

investigated whether persons with paid work experience scored higher than persons without experience. In this study, 76 junior college students participated, 19 had no work experience, 53 had worked and four did not respond. The analysis of data revealed that work experience students scored higher than students without work experience. Scheri (1972), using the VDI Attitude Scale with high school males, found no significant relationship between work experience and vocational attitude maturity. With 50 items on the VDI-A, only five could be differentiated by a work/no work factor analysis.

Volunteer and leisure activities. Research indicates that a multiplicity of individual, social, and psychological variables influence or are related to vocational maturity. Of these variables, volunteer work and leisure are purported as furthering the developmental task of the high school student. Hayes and McDaniels (1980) lament that career development should be understood as the development of a person's vocational and leisure activities (p. 54). Similarly, Hayes and McDaniels (1980) elucidate that volunteering/leisure introduces students to enjoyable activities which may contribute to a potential future career.

Summary

Following a synopsis of adolescent behavior and developmental task in career development, this chapter discussed career development theories and related studies.

Further, this chapter reviewed long and short studies of career programs which attempted to increase the career development of youth. Evidence from many of the studies indicated that career programs which have been most effective are those that continue for a year or longer, that utilize the greatest proportion of students' time, and that involve several aspects of the students in class and extra-curricular activities.

Research which focused on the categories of correlates of career development, bisocial, environmental, personal, and developmental, were reported. The bisocial correlates of sex and age produced contradictory research findings. Data accumulated on the environmental correlate, socio-economic status (family income), and work experience were found to be contradictory, but most researchers and/or theorists found positive support for the value of work experience in supporting career maturity. Developmental correlates of community participation and leisure are purported to have positive relationships in furthering career maturity of adolescents.

It is apparent that career maturity is a viable concept for program development and assessment. A review of literature, however, revealed few studies have been conducted on the career maturity of gifted students.

Chapter III

Methodology

This chapter includes a discussion of several topics relevant to this research effort. These include: a definition of the population and sample; an overview of the three career education programs; a description of the instrumentation; the Career Maturity Attitude Scale and Competence Test (Crites, 1973); and the Personal Data Sheet (devised by the researcher); procedures for data collection; and methods of analysis. The research in this study was descriptive and designed to determine the relationship or differences as stated in the hypotheses reported in Chapter I.

Population and Sample

The Richmond, Virginia, school division in attempting to respond to the special needs of gifted and non-gifted students as supported by the school board and school personnel, has developed a number of programs and services for these students. One of these programs represents the career experiences available to most secondary students throughout the school system, while two of the programs represent innovative approaches to a career education curriculum.

The Richmond School System, through a resolution adopted by the school board, facilitates career development by encouraging each school to expand its role to provide experiences that will make students aware of many occupations and prepare them for a career ladder which not only provides employment but also requirements for advancement and lifestyle satisfaction.

The subjects for this study were students in three different career programs in three high schools in the Richmond, Virginia Public School System. A request for approval to conduct this study was submitted and approved by the research department of the school system during the winter of 1981. Participation of subjects was dependent on the approval of the central administration, the schools, and the parents.

The subjects who participated in this study were 189 tenth, eleventh, and twelfth grade students from three high schools. Located in Richmond, Virginia, an urban area, these schools were attended primarily by Black students (86 percent Black, 14 percent Caucasian), from predominantly low to medium income families. The income levels for participants by program are reported in Chapter IV.

Of the 189 participants in the study, the Gifted Career Program was represented by 28 males and 32 females; 35 males and 34 females were in the Traditional Career Program; and 31 males and 32 females represented the Alternative Career Program.

Each participating school in this study was unique and can be described in the following way:

1. A small high school (gifted) with a population of approximately 105 students and whose career education curriculum emphasizes participation in a mentorship experience.
2. A small high school (alternative) with a total population of 150 students and whose career education curriculum emphasizes participation in an internship experience. The gifted population (65 students) represented 43.3 percent of the total population. Sixty-three of the gifted students (96.9 percent) participated in this study. Of the 63 participants 61.9 percent had completed a career internship experience.
3. A large comprehensive high school (traditional) with a population of approximately 1,583 students and whose gifted and non-gifted population participated in a traditional career education curriculum. The gifted population (86 students) represented 5.4 percent of the total school population. Sixty-nine of the gifted population (80 percent) participated in this study.

Overview of Career Education Programs

The call for educational reform in 1972, creating a national office of career education, prompted school divisions nationwide to emphasize career education for all students in the nation. Congressional request for a survey and assessment to determine the status of career education provided information about activities carried out by local districts to help young people to learn about and prepare to engage in work as a part of their living. Reported activities were basically of two types: traditional and innovative. Innovative activities occurred in districts where formal career education policy statements had been written and were carried out in the earlier grades, while traditional activities were almost exclusively at the secondary level.

Career programs in the Richmond Public School System represent a composite of the kinds of activities reported in the 1974 national survey. A sequential program with inclusion of some form of career education is espoused through a formalized policy statement by the School Board, which was adopted prior to the 1974 survey. The policy statement supports the career education concept by a resolution adopted by the School Board. (Appendix E)

Career Education

Richmond Public Schools

Objectives

The Program Objectives for Career Education are to:

1. Increase self-awareness of each student.
2. Develop in each student a favorable attitude about the person, social and economic significance of work.
3. Assist each student in developing, practicing appropriate career decision-making skills.
4. Increase the career awareness of students in terms of the broad range of options open to them in the world of work.
5. Provide career orientation and meaningful exploratory experiences for students.
6. Provide follow-up and job placements for students who drop out of school at the middle school level.
7. Provide job preparation in a wide variety of occupational areas with special emphasis on the utilization of work experience and cooperative education opportunities for students.
8. Provide preparation for placement of existing students in either a job, post-secondary occupational program, community college, or baccalaureate program.

Core Dimensions of Career Education Programs

The programs involved in this study are characterized by core dimensions that are common to all three programs. Major program components are grouped into eleven broad areas: a vocational school (the Richmond Technical Center), services of a job placement counselor, field trips, computer simulations, classroom speakers, hands-on experiences, class assignments, group and one-to-one counseling, a career resource center (each high school), job fairs, and school career fairs.

While each school incorporated the common dimensions of career education, each program has its own unique components. The program descriptions which follow highlight different approaches for the acceleration of students' career development.

Alternative Program

The main purpose of the Alternative Program is to provide students exposure to new and unique approaches to learning and self-fulfillment. The objectives are: (1) to offer a wide variety of classes; (2) to give highly motivated students an opportunity to participate more fully in the development of their own curriculum and daily schedules; (3) to provide an atmosphere in which students may learn to organize their day and meet schedules without constant supervision; and (4) to provide an open and informal learning atmosphere.

The career education curriculum for the Alternative program is recognized by the school staff and participants as the Internship (on-the-job training). Objectives for this program attempt to increase the career awareness of students in terms of the broad range of options open to them in the world of work, provisions of exploratory experiences, and job preparation in a variety of occupational areas with special emphasis on the utilization of hands-on experience. Internships in the past have not been available through regular school programs; therefore, participants find this experience to be overwhelmingly unique among career activities.

The major focus of the Alternative program is directed towards student participation in an internship experience with an individual who is active in either business, industry, labor, or a profession. Thus, the experience allows the participant to observe the lifestyle required by the career and the responsibilities that accompany the work.

The career internship program provides students with supervised, on-the-job training during a specified period of time. Students receive no compensation for their work but receive academic credit. Internships are planned and organized by the activities director at the respective school in conjunction with a resource person in a related academic discipline. The student presents a referral to the advisor who later contacts the student to arrange for an interview to discuss the details of the

internship contract. Career interest, responsibilities, location of job, and the availability of the resource person are considered during this interview.

The activity advisor assists the student in the facilitation of the internship. After an internship is located, the advisor, resource person, and student convene to discuss aspects of the internship. During this meeting, a contractual agreement is made among all parties involved.

Prearranged meetings are held with the student internee and the activities advisor after each subsequent meeting with the resource person. These meetings are held to discuss and review the student's work experience, comments from the instructor or resource person, time schedules, and concerns of student and/or instructor or resource person.

The internship has three major divisions:

1. Professionals or skilled persons in the community;
2. Mini-courses with local community colleges in specific areas; and
3. Parents of students within the school setting who possess talents in specific areas.

The Alternative Career Program seeks to:

1. Increase career awareness of students through wide-range course offerings;
2. Provide exploratory experiences in various occupations;

3. Assist students in developing and practicing appropriate career decision-making skills;
4. Help place students in jobs, further occupational training or college when they leave school;
5. Serve as ambassadors of goodwill and public relations through community participation in the utilization of special talents and skills;
6. Encourage students' participation in activities to facilitate personal and social needs with work and leisure.

Traditional Career Program

The Traditional Career Education Program focuses on the integration of career principles into the regular academic and vocational curriculum. The major emphasis is career implications of subject matter as a source of career information and educational motivation. Vocational and English classes represent the core areas of activities perceived as a career education curriculum for the traditional program.

Student career activities in this program are by grade level. With assistance of regular counselors and the job placement counselor, the program operates with the teaching of six- to eight-week mini-courses incorporated into the traditional school subjects.

Specific career education methods in the traditional program include the following activities.

Grade Ten. Preparation for entering the world of work is the major focus of career education activity at grade ten. Job seeking skills with techniques of interviewing, resume writing, and completion of job applications and role playing are presented and taught in the English classes of students. Vocational classes are encouraged to have students utilize these learned techniques through interviewing people in the subject related field, researching specific subject related jobs and receiving assistance in applying for jobs in the area. Additionally, in this grade, the Ohio Vocational Interest Survey is administered to students and career counseling is utilized with test interpretation and further high school program planning.

Grade Eleven. Continued emphasis on resume writing and job application completion is emphasized at this grade level. The career kit, Decision and Outcomes, is utilized extensively in this grade level. With emphasis upon assisting students to become self-actualizing, the program directs attention to decision making as a major focal point. Consequently, incorporating a decision-making component into the program offers a solution to any weak decision-making skills the students may possess. The counselors often team with the English teacher to fulfill the obligations of activities of decision making for the students.

Grade Twelve. At the twelfth grade level, the Harrington-O'Shea Vocational Test is administered to all students. Results of the test are placed on the Guidance Information System and this allows students to research career information as a follow-up to the test results. Mini-courses that teach researching skills are provided by the English and vocational classes to facilitate the career development process of each student. The job placement counselor provides intense counseling for in-depth services to school leavers, the college and non-college bound. Role playing to enhance interviewing skills are afforded students who express a desire to "go into the community" for exploration and trends in the world of the job market. (School Guidance brochure)

The Traditional Career Program seeks to

1. Show significant relationship between school subjects and work.
2. Assist students in formulating career expectations that are consistent with abilities.
3. Identify tentative career objectives based upon accurate and pertinent occupational and self information.
4. Develop career decision-making skills.
5. Develop a favorable attitude about personal, social, and economic significance.

Gifted Career Program

One of the major goals of the Gifted Program is to assist each student to develop the ability to be a creative problem finder/solver and to use this ability in the interest of personal survival and/or human progress. Additionally, the students are assisted to understand and reflect the scholarly mode, to develop and demonstrate respect for scholarly achievement, and to develop increasing expectations of personal scholarly performance (School Handbook). The uniqueness of the Gifted Career Education Program centers on a creative experience--the mentorship.

The Gifted Career Program seeks to:

1. Provide career education for students, with special emphasis on career options for female/minorities by:
   Providing career information
   Providing in-depth career exposure by means of a mentor relationship.
2. Provide role models for students by:
   Providing opportunities for exposure to adults with similar interests and charisma that attracts the students.
   Providing opportunities for a significant relationship with a person whose career fits the interests or the imagination of the student.

3. Enlarge the educational opportunities for the students:

   Enabling students to see the need for the application of abilities to a wider curriculum.

   Providing opportunities to expand on class project into the specificities of his/her particular career exploration.

   Enlarging classroom to encompass the experiences of the mentor relationship.

4. Enable student and staff to share knowledge and experiences with other components of the school system by:

   Sharing mentor experience

   Dialoguing with students to encourage them to expand their own views and to think about career options.

Three types of mentorships are available for students in the gifted program: (1) short-term contact, (2) intensified contact, and (3) long-term contact. A description of each mentorship is presented below:

Short-Term Contact. The student meets with a person whose career coincides with that in which the student is interested. The purpose of the meetings is to allow the student to become personally acquainted with someone in that field and to secure information related to career opportunities and requirements.

The time and number of student/mentor meetings are dependent upon the accomplishment of the objectives of the contact. There may be three or more meetings during specified contact period.

Intensified Contact. The student meets during this period of time with a person in the student's area of interest to discuss, observe, and study. The purpose of this type of contact is to provide the student with brief experiences with several mentors during the school year. Usually, the intensified contact lasts approximately six weeks.

Long-Term Contact. The student meets with the mentor on a weekly basis throughout the school year, working with the mentor in the student's area of interest. The student and mentor set goals and evaluate at regular intervals.

The mentors' program, while similar to the internship program at the Alternative School, differs in the mode of assigning students to the mentor. A detailed assessment of interest and talents are provided before the matching of the student with an appropriate mentor. Finally, the mentor and student select each other in terms of the commitment they make to one another. Comments from participants provided information that mentors were involved not only through common career interest, but through shared avocational and leisure activities as well. It is desirable that the student and mentor develop respect for each other and the school throughout the association.

Instrumentation

The two instruments used to obtain data from participants in this study included the Career Maturity Inventory (Crites, 1973), and a Personal Data Sheet.

Career Maturity Inventory

The Career Maturity Inventory (CMI) was formerly entitled the Vocational Development Inventory (VDI) and represents a confluence of two major cycles in vocational psychology: the trait-factor and the psychodynamic (Crites, 1973). (Appendix C) The rationale underlying the construction of the CMI is that vocational behavior is a developmental process which is a progression from childhood through adolescence to adulthood and old age.

The Attitude Scale. The Attitude Scale "elicits the feelings, the subjective reactions, the dispositions that the individual has toward making a career choice and entering the field of work" (Crites, 1973), p. 3). The attitude scale has been used in a variety of settings such as schools, colleges, business, industry, hospitals, and other institutions.

Fifty attitudinal items make up the CMI scale. Statements gathered from the actual verbalizations of young people about vocational decision making were analyzed and grouped into five attitudinal clusters which compose the attitudinal scale. These five attitudinal clusters are:

1. Involvement in the career choice process,
2. Orientation toward work,

3. Independence in decision-making

4. Preference for career choice factors, and

5. Conceptions of the career choice process.

The five attitudinal factors cited were rationally deduced from career development theory and the components of one of Crites' (1965) four dimensions in the model of career maturity (consistency of career choice, realism of career choices, career choice competencies, and career choice attitudes). The author used Flanagan's (1951) three-step procedure (description, classification, and specification) to conceive and write items which would parallel the rationale for defining career attitudes.

The CMI Attitude Scale has proven to be both reliable and valid for the measurement of career attitude maturity for students reading at the sixth-grade level through senior college level. Item data collected from grades six through twelve yielded a mean internal consistency of .74 for all grade levels. The test-retest reliability over a period of one year produced a coefficient of .71 for the participating students in grades six through twelve.

The Competence Test. The Competence test of the Career Maturity Inventory consists of five parts, each of which assesses a component in the career decision-making process.

These include:

1. Knowing Yourself

2. Knowing About Jobs

3. Choosing a Job

4. Looking Ahead (Planning)

5. What Should They Do? (Problem Solving)

There are 100 questions in this portion of the test which seek to "measure the information, comprehension, and problem-solving competencies which are critical to realistic career choice" (Crites, 1973, p. 14).

In each subtest, a hypothetical situation is presented and the individual is asked to choose one from five alternatives. Currently, only internal coefficients are available for the competence test. Most of the coefficients are acceptably high, ranging from .72 to .90 (Crites, 1973, p. 30).

Personal Data Sheet

The Personal Data Sheet was developed by the researcher and consists of ten items used to gather data about age, school, grade, sex, family income, leisure, volunteer, paid work experience, and information relating to participant's career education experience. (See Appendix B.) Items 1 through 5 were used to provide necessary demographic data for each participant. Item 5 indicated family income, classified as: low, medium, and high. The income range for each level is reported in Chapter IV. Participants were to complete item 5 according to the estimated income of both parents if they were both employed or if a parent received his income from any other source such as Social Security benefits.

Items 6 through 10 generated information on paid work, volunteer involvement, leisure activities. The participants' responses to items 6 through 10 provided data for selected variables incorporated in the study to determine their impact on the career maturity of the participants. The Personal Data Sheet was field-tested prior to using it for collecting data in June. In May, 1981, a group of ten 10th graders and fifteen 11th graders were given the Personal Data Sheet for pilot testing. Students' questions about this instrument were recorded and students were asked to comment on the clarity of the data sheet. The data sheet was revised slightly with regard to respondents' suggestions.

Data Collection Procedures

Prior to the data collection, each participating school's principal was contacted. They were informed of the goals of the research project and asked for their assistance. Upon their agreement, a schedule for instrument administration was established. Written correspondence, including samples of the instruments, was taken to each school prior to administration of the instruments.

All data were obtained in June, 1981. The researcher met with students in the morning at each school on two different days within a six-day period. During a one-hour period, on the first test day, each group completed the Personal Data Sheet (Appendix B), and the Attitude Scale of the Career Maturity Inventory (Appendix C).

During a one-hour period, on the second test day, each group completed the Competence Test of the Career Maturity Inventory.

To facilitate the administration of the instruments used for data collection, students were given a folder containing the Personal Data Sheet, the Attitude Scale, and the Competence Test. Students were instructed not to look ahead through the folder, and they were asked not to write their names on the data sheet or test booklets so that anonymity would be assured.

The Personal Data Sheet was completed first and students were instructed not to begin work on the other instruments until told to do so. Participants were told to write name of school in item 1 and check the correct response in items 2 through 6, and also to write in the correct response for items 6 through 10. A five-minute break followed the completion of the Attitude Scale.

The Attitude Scale was completed next. The participants completed this scale by following the directions contained on pages nine through 11 of the Career Maturity Inventory.

On the second test day for each group, the Competence Test was administered to all participants. Directions were read by the participants and they were instructed to proceed to the first two sub-scales. The first two sections were completed by the participants with a five-minute break following. Following the break, the remaining sections of the Competence Test were completed.

Data Analysis Procedures

The two instruments used to collect data for this study were completed by 189 students. From the data sheet, descriptive data was compiled about the number of respondents in the study and the percentage of the participants who were in the tenth, eleventh, and twelfth grades; male or female; percentage of participants by age, and family income: low ($3,000 to $11,999), medium ($12,000 to $17,999), or high ($18,000 to $25,000) income.

Although participants recorded more than one paid work experience, only the first job listed was used for analysis in this study. Responses of participants for volunteer experience and work experience are reported in percentages and number by programs. Leisure activities were categorized through a modification of McDaniel's Leisure Inventory (1977) and reported in percentages and number by programs. Mean scores for work experience, leisure activities, and volunteer involvement were computed by programs.

Although participants recorded their experiential career experiences, this information was not used in the analysis of data. Only the Gifted and Alternative students were participants in these experiences. Approximately 95 percent of the Gifted Program respondents and 62 percent of the Alternative Program respondents had participated in an experiential career activity.

One student in this study had reached age 19 at the time of the test administration. An interview with this participant

indicated the reason for late graduation. The participant revealed that an accident playing basketball during his junior year necessitated a homebound teacher for a period of approximately seven weeks. The participant was able to complete his basic academic courses but was unable to pursue the vocational course at the technical center. The participant worked part-time the senior year and completed the vocational course.

Analysis of Variance technique was used to test for significant differences between the groups, as well as to test for interaction between the dependent and independent variables of program, sex, age, grade, and family income. The post hoc Duncan's Multiple Range Test was used to locate where the differences existed if the analysis of variance procedure yielded a significant result.

In this study, the hypotheses were stated in null form and employed as statistical hypotheses. An alpha level of .05 characterized by Kerlinger (1964) was used to ascertain significant relationships and differences.

The dependent measures were the scores of the Career Maturity Inventory, Attitude Scale, and Competence Test. The independent measures were career program, age, sex, grade, family income, leisure, volunteer and work experience.

Chapter IV

Presentation of Results

The data obtained from the procedures described in Chapter 3 were analyzed by analysis of variance procedures. The results will be presented in this chapter. Demographic data for the various groups are provided as well as the results of the statistical analyses.

Description of the Respondents: Demographic Data

As Chapter 3 reported, eligible students in the three schools were asked to participate in the study (n = 256). Ultimately, 189 students completed the two instruments used to collect data for this study. In addition to classification based on academic program, the participants were grouped by age, sex, grade, and family income. Ninety-five females and 94 males were surveyed from the three career programs. (Table 1) Thirty-five male and 34 female participants represented the Traditional Career Program, while 28 males and 29 females were in the Gifted Program. Sixty-three participants, 31 males and 32 females, represented the Alternative Career Program. The male/female ratio in the sample was approximately 1:1 in each program. Moreover, approximately equal numbers of tenth, eleventh, and twelfth graders were

Table 1

Demographic Data of Participants by Career Program

	Gifted		Alternative		Traditional	
Sex	N	%	N	%	N	%
Male	28	49.12	31	49.20	35	50.72
Female	29	50.87	32	50.79	34	49.27
Grade						
10	22	38.59	20	31.74	22	31.88
11	15	26.31	20	31.74	24	34.78
12	20	35.08	23	36.50	23	33.33
Age						
15	17	29.82	8	12.69	10	14.49
16	14	24.56	18	28.57	13	18.84
17	20	35.08	21	33.33	23	33.33
18	6	10.52	16	25.39	22	31.88
19	0		0		1	1.44
Income						
Low - $ 3,000-$11,999	4	7.01	7	11.11	10	18.84
Medium - $12,000-$17,999	31	54.38	38	60.31	42	60.86
High - $18,000-$25,000 or more	22	38.59	18	28.57	14	20.28

sampled. One third of the students were 17 years old, one fourth of the students were 16, one quarter were 18, and the remainder were age 15, with one 19-year old.

Family income was classified low, medium or high based on per capita income for the taxable year 1980 for the city of Richmond, Virginia. As noted in Table 1, income levels were distributed across all levels. The Traditional Career Program reported more respondents in the low income level (18.8 percent) than the Alternative (11.1 percent) and Gifted (7.0 percent).

Statistical Testing of Research Hypotheses

Four hypotheses were tested in this study, utilizing the scores on the Career Maturity Attitude and Total Competency Test as the dependent variables. The independent variables were program, age, grade, sex, family income, leisure, volunteer, and work experience. The identified factors of sex, age, grade, and family income hypothesized to influence career maturity in adolescence are included in hypothesis 1 as well as hypotheses 2 and 3 to determine their relationship to any program differences found in the statistical analysis. The vocational development task of work experience and the hypothesized correlates, leisure and volunteer experience, are included in hypothesis 4.

Hypothesis 1 was stated as:

There are no career choice attitude differences among students in the gifted career programs when classified by program, sex, age, grade, and family income.

There was a significant difference in the career choice attitude among students participating in the three career education programs. (Table 2) The analysis of variance calculated for Hypothesis 1 showed that program was significant ($F = 6.74$). No significant differences were found for the variables income, sex, age, and grade among program participants when considered with their career choice attitude scores. To search for possible interactions between membership in the three programs and the variables income, sex, age, and grade, two-way interactions with program were computed in the analysis of variance procedure. The data revealed a lack of interaction among these variables and program membership on the attitude of the participants. (Table 2)

Table 3 summarized the means used for the Duncan's Multiple Range Tests. The data revealed that the Gifted Program participants had higher mean scores ($\bar{X} = 40.29$) than did the Alternative ($\bar{X} = 37.84$) and the Traditional ($\bar{X} = 37.42$). The Duncan analysis indicated that participants in the Gifted program had mean responses that were significantly different than those in the Alternative or Traditional programs. The results of the analysis indicated that the participants in the Gifted Program responded with a greater readiness towards making career choices than the participants in either the Traditional or Alternative Program. Hypothesis 1 was rejected for program but was retained for age, sex, grade, family income, and interaction effect with program.

Table 2

Analysis of Variance of Career Maturity Attitude Scale for Comparison Between Program, Income, Sex, Age, Grade, and Interaction Effects

Source	df	SS	MS	F	P
Program	2	183.6	91.8	6.74	.0015*
Income	2	53.8	26.9	1.98	.14
Sex	1	24.0	24.0	1.77	.19
Age	4	126.4	31.6	2.32	.06
Grade	2	21.4	10.7	.79	.46
Program X Income	4	3.1	.8	.06	.99
Program X Sex	2	10.3	5.2	.38	.69
Program X Age	6	42.0	7.0	.51	.80
Program X Grade	4	16.4	4.1	.30	.88
Error	161	2192.5	13.6		

*P < .05

Table 3

Means and Standard Deviations for Attitude Scores by Program, Income, Sex, Age, and Grade

Group	n	Mean	SD
Program:			
Gifted	57	40.31	2.65
Alternative	63	37.84	3.53
Traditional	69	37.42	4.72
Income:			
Low	24	36.50	4.55
Medium	112	38.32	3.79
High	53	39.53	3.79
Sex:			
Male	94	38.81	3.77
Female	95	38.07	4.17
Age:			
15	35	37.74	4.34
16	45	37.93	4.29
17	64	38.71	3.27
18	44	39.27	4.19
19	1	32.00	
Grade:			
10	65	37.62	4.41
11	59	38.92	3.39
12	65	38.83	3.95

Hypothesis 2 was stated as:

There are no differences in levels of knowledge about occupations and career decisions among students in three career programs classified by program, sex, age, grade, and family income.

Table 4 summarized the analysis of variance and the interaction effects for the data pertaining to knowledge about occupations and career decisions. The F value for program ($\overline{X}$ =4.52) indicated a significant difference among respondents in the three career programs. Further analysis with the ANOVA procedures did not indicate any significant differences among the programs for the variables age, sex, grade, and family income. An examination of the interaction effects for these variables on measures of levels of knowledge and career decisions revealed data indicating a lack of interaction effect for sex, age, grade, and income. When the Duncan's Multiple Range Test was computed to locate the program difference, it was revealed that the Traditional Program participants tested at a slightly lower level ($\overline{X}$ = 15.60) than the participants in either the Gifted ($\overline{X}$ = 16.92) or the Alternative ($\overline{X}$ = 16.87) Career Program. It is interesting to note that while the Traditional group differed from the Alternative and Gifted, these two groups of participants had similar mean scores for program (Table 5). Based on this analysis, Hypothesis 2 was rejected for program and retained for selected variables age, grade, sex, and income and interaction effects.

Table 4

Analysis of Variance for Levels of Knowledge and Career Decisions with Interaction Effects (Hypothesis 2)

Source	df	SS	MS	F	P
Program	2	55.12	27.56	4.52	.01*
Income	2	31.85	19.92	2.61	.08
Sex	1	9.98	9.98	1.64	.20
Age	4	36.93	9.23	1.52	.20
Grade	2	11.40	5.70	.94	.39
Program X Income	4	33.01	8.25	1.35	.25
Program X Sex	2	3.64	1.82	.30	.14
Program X Age	6	34.91	5.82	.96	.45
Program X Grade	4	29.57	7.39	1.21	.31
	161	980.67	6.09		

* $P < .05$

Table 5

Means and Standard Deviation for Knowledge about Occupations and Career Decisions by Selected Variables

Group	n	Means	SD
Program:			
Gifted	57	16.94	2.14
Alternative	63	16.87	1.80
Traditional	69	15.61	3.20
Income:			
Low	24	15.08	2.92
Medium	112	16.63	2.54
High	53	17.25	2.11
Sex:			
Male	94	16.14	2.75
Female	95	16.72	2.32
Age:			
15	35	16.06	2.89
16	45	16.67	2.48
17	64	16.78	2.28
18	44	16.09	2.70
19	1	13.00	
Grade:			
10	65	16.29	2.73
11	59	16.69	2.50
12	65	16.34	2.45

Hypothesis 3 was stated previously as:

There are no career maturity differences among gifted students participating in three different programs, classified by program, sex, age, grade, family income, and their total Competence Test scores.

Table 6 summarized the five one-way Analysis of Variance and the two-way interaction effects for the Competence Test scores of program participants. The analysis revealed a significant difference for program ($\overline{F}$ = 7.98) and age ($\overline{F}$ = 4.32). Family income, sex, and grade were found not to be significant when considered with the participant's total Competence Test scores.

To test for the presence of interaction effects between the total competence scores of respondents and the variables income, sex, age, and grade, a two-way analysis of variance was utilized to treat the variables. This allowed investigation of five main classifications, these being: (1) income (high, medium, low); (2) sex (male, female); (3) age (15, 16, 17, 18, one 19-year old); (4) grades (10, 11, 12); and (5) program. Through this method of data treatment, it was possible to ascertain if income and program, sex and program, grade and age and program were acting independently of each other or whether they produced interaction effects. When tested, no significant interaction existed for program and total competence scores for the variables income, sex, age, and grade.

Table 6

Analysis of Variance for Total Competence Test Scores for Comparison Between Program, Income, Sex, Age, Grade, and Interaction Effects

Source	df	SS	MS	F	P
Program	2	971.4	485.7	7.98	.0005*
Income	2	354.0	177.0	2.91	.06
Sex	1	21.0	21.0	.35	.56
Age	4	1051.5	262.9	4.32	.002*
Grade	2	23.8	11.9	.20	.80
Program X Income	4	572.7	143.2	2.35	.06
Program X Sex	2	317.7	158.9	2.61	.08
Program X Age	6	460.7	76.8	1.26	.28
Program X Grade	4	182.4	45.6	.76	.56
Error	161	9801.2	60.88		

*Significant at .05

Computation of the Duncan's Multiple Range Test provided information regarding the location of the differences observed in the testing for Hypothesis 3. An observation of program differences among the participants indicated that the Traditional Program participants had lower mean scores ($\bar{X}$ = 71.83) from the Gifted ($\bar{X}$ = 77.90) and the Alternative ($\bar{X}$ = 77.43). (Table 7)

Although income was not significant, the results of the analysis indicated that the high income group ($\bar{X}$ = 78.36) and the medium income group ($\bar{X}$ = 75.69) had higher mean scores than those program participants in the low ($\bar{X}$ = 68.75) income group. A similar pattern emerged for the data on the sex of the participants. While the mean scores were very close, the females' mean score ($\bar{X}$ = 75.94) was slightly higher than the mean score for males ($\bar{X}$ = 75.16). No significant differences were observed for grade level of participants; however, the mean scores for grade ten ($\bar{X}$ = 73.38) were lower than the mean scores for grades 11 ($\bar{X}$ = 76.58) and 12 ($\bar{X}$ = 76.73), respectively. The interaction effects were not significant; therefore, group means will not be reported.

It may be noted from Table 7 that mean scores for age differences occurred for age 15 ($\bar{X}$ = 72.2) and age 19 ($\bar{X}$ = 51.00) in contrast to the mean scores of age 16 ($\bar{X}$ = 75.47), age 17 ($\bar{X}$ = 77.20), and age 18 ($\bar{X}$ = 76.32), whose mean scores were similar. The comparisons for these mean scores indicated that the 19-year old participant was less mature in career competencies

Table 7

Means and Standard Deviations for Total Competence Test Scores by Selected Variables

Group	n	Means	SD
Program:			
Gifted	57	77.89	6.64
Alternative	63	77.43	6.68
Traditional	69	71.83	11.21
Income:			
Low	24	68.75	12.87
Medium	112	75.69	7.78
High	53	78.36	7.92
Sex:			
Male	94	75.16	8.85
Female	95	75.90	9.17
Age:			
15	35	72.20	12.71
16	45	75.47	8.56
17	64	77.20	7.36
18	44	76.32	6.70
19	1	51.00	
Grade:			
10	65	73.38	11.51
11	59	76.58	7.33
12	65	76.71	7.08

than his peers in regard to the Total Competence Test scores. However, without the 19-year old in the analysis of variance, the age effect was found to be no longer significant. Hypothesis 3, therefore, was rejected for program but retained for sex, age, grade, family income, and interaction effects.

Hypothesis 4 was stated as:

There are no differences in career competencies of program participants and paid work experience, leisure activities, and/or volunteer involvement as measured by their total Competence Test scores.

Table 8 summarized the data pertaining to the participants' involvement in paid work experience, volunteer/leisure involvement and their relationship to their total Competence Test scores. In an effort to determine if any differences existed among the program participants and these hypothesized correlates of career maturity, an analysis of variance was computed. An examination of Table 8 indicated that program (F = 7.11), and income (F = 5.22), were significant when testing for Hypothesis 4. Further observation of the analysis indicated that no significant difference was found for leisure/volunteer involvement of participants in the three career programs. As reported earlier, leisure/volunteer participation of program participants was found not to be statistically significant and the mean scores of the participants were found to be similar in the categories of art/music, other/miscellaneous, and indoor/outdoor team sports. Hypothesis 4 was

Table 8

Analysis of Variance of Total Competence Scores for Program, Income, Paid Work Experience, Leisure/Volunteer Involvement by Participants

Source	df	SS	MS	F	P
Program	2	959.99	479.96	7.11	.0011*
Income	2	704.58	352.29	5.22	.0063*
Volunteer/Leisure	5	662.16	132.43	1.96	.098
Error	176	11877.26	67.48		

*P <.05

rejected for program and income and retained for leisure/ volunteer and work experience. (See Table 9.)

The data for the analysis of Hypothesis 4 were ascertained through reported information from the program participants. A discussion of participant responses to their leisure/volunteer and work experience are included in this section. Tables 10 and 11 summarized by programs and percentages these hypothesized correlates of career maturity for the program participants.

Paid Work Experience

An examination of reported data for paid work experience is revealed in Table 10. Work experience was classified by three areas: (1) social service, (2) personal service, (3) performing/ fine arts.

The participants in the Alternative Career Program reported a larger number of students with paid work experience in the Personal Service cluster than their peers in the other two programs. Traditional Program participants reported more students with paid work experience in the Social Service cluster than other program participants. In the three programs, few students revealed any paid work experience in the performing/ fine arts job cluster.

Volunteerism/Leisure Involvement

The volunteer/leisure experiences of program participants were categorized in five areas: (1) indoor/outdoor team sports,

Table 9

Means and Standard Deviations of Total Competence Scores for Work Experience, Leisure/Volunteer Involvement by Categories

Group	Yes/No	Percent	Mean	SD
Social Service	Yes 91	48.1	75.1	9.6
	No 98	51.8	75.7	8.3
Personal Service	Yes 72	38.0	76.1	7.80
	No 117	61.9	75.04	9.68
Performing Arts	Yes 6	3.1	72.0	9.6
	No 183	96.8	75.6	9.0
Volunteer/Leisure Activities	Yes 61	32.3	78.7	6.6
	No 128	67.7	74.0	9.5
JA	Yes 26	13.7	78.0	8.9
	No 163	86.2	75.2	9.0
Outdoor/Indoor Team	Yes 41	21.7	75.3	10.4
	No 148	78.3	75.4	8.4
Arts/Music	Yes 87	46.0	74.8	9.4
	No 102	53.9	76.1	8.4
Other/Miscellaneous	Yes 149	78.8	76.0	8.2
	No 40	21.1	73.1	11.4
Total Work	Yes 153	80.9	75.4	9.0
	No 36	19.0	75.8	9.3

Table 10

Summary: Paid Work Experience in Social Service, Personal Service, Performing/Fine Arts of Participants by Programs

	PROGRAMS											
	Gifted				Alternative				Traditional			
	No	%	Yes	%	No	%	Yes	%	No	%	Yes	%
Cluster												
Social Service	36	63.1	21	36.8	41	65.0	22	34.9	20	28.9	49	71.0
Personal Service	30	52.6	27	47.4	35	55.5	28	44.4	52	75.4	17	24.6
Performing/ Fine Arts	53	92.9	4	7.0	61	96.8	2	3.17	69	100.0	0	

Table 11

Summary: Leisure/Volunteer Involvement of Program Participants

Activity	PROGRAMS											
	Gifted				Alternative				Traditional			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Indoor/Outdoor Team	17	29.8	40	70.2	10	15.9	53	84.1	14	20.3	55	79.7
Music/Art	34	59.6	23	40.4	19	30.1	44	69.8	34	49.3	35	50.7
Miscellaneous/ Extra-Curricular	49	85.9	8	14.0	59	93.6	4	6.3	41	59.4	28	40.5
Volunteer/Junior Achievement	35	61.4	22	38.6	27	42.9	36	57.1	25	36.2	44	63.8
Totals	135		93		115		137		114		162	

(2) music/art, (3) extra-curricular activities, junior achievement and volunteer work with community projects. These activities were available to the students through their discretionary time.

The reported data in Table 11 indicated involvement in purposeful activity (work) and random activity (play) which may assist these students in narrowing the alternatives for a satisfying life career.

Chapter V

Summary, Discussion, Conclusion, and Recommendations

The purpose of this study, the research procedures, and the data analysis procedures will be reviewed in the summary section of this chapter. In the discussion section of the chapter, the findings of this research will be compared or contrasted to results one would expect to find according to current literature about career education programs and gifted students. Chapter 5 will conclude with the recommendations of the study.

Summary

The purpose of the present study was to investigate the relationship of participation in three different career education programs to the career maturity of gifted high school students. A secondary purpose of the study was to determine the relationship of selected variables (sex, grade, age, paid work experience, family income, leisure/volunteer participation) to the career maturity of students.

A review of the literature related to the study of gifted students and career maturity indicated a need for educational systems to provide career programs beyond those included in the instructional program of the regular classroom. The unique interests, abilities, needs, and occupational or career aspirations

of gifted students should be met through individualized and differentiated programs (Milne, 1979). Recently, there has been a growing interest to focus on the needs of gifted students in career development and preparation (Hoyt and Hebeler, 1974; Milne, 1979; Uhler, 1977).

Most writers agree that career information should be available early and directed towards diversity for gifted and talented students (Colson, 1979; Sellen and Birch, 1980; Uhler, 1977). These writers also express a need for flexibility in guidance practices and greater use of out-of-school experiences for the gifted population. Limited research exists, however, which describes gifted students' participation in career education programs. Such research would explain how the schools are meeting the needs of the gifted and talented in career preparation.

The purpose of this study was to investigate the relationship of participation in three different career education programs to the career maturity of gifted high school students. A secondary purpose of the study was to determine the relationship of selected variables (sex, grade, age, work experience, family income, leisure/volunteer involvement) to the career maturity of students.

Three instruments were used to acquire data for this study. One was a Personal Data Sheet (Appendix A), designed by the researcher to collect information about the respondents' age, sex, grade, family income and involvement in work experience (paid and non-paid), leisure/volunteer activities. The Career Maturity

Inventory, Attitude Scale, and Competence Test were included to survey the knowledge and various attitudes about occupations and career decisions. McDaniels' Leisure Inventory was used to categorize leisure/volunteer activities of program participants.

Analysis of variance procedures and the post hoc Duncan's Multiple Range Test were used to analyze the data collected for the Personal Data Sheet and the Career Maturity Inventory. The independent variables were program, age, sex, grade, family income, work experience, leisure/volunteer involvement. The scores of the Career Maturity Attitude Scale and the Competence Test were the dependent variables. In addition, paid work experience, leisure/volunteer activities were described and reported in percent and number for the various programs.

In testing for null hypothesis 1, the analysis revealed that respondents in the Gifted Program had a better attitude towards making career choices than the respondents in the Alternative and Traditional Programs. After an examination for interaction effect of age, sex, grade, and family income on the career maturity attitude scores, the analyses revealed no interaction effects. Hypothesis 1 was rejected for program and retained for selected variables age, sex, grade, and family income.

For null hypothesis 2, the results revealed a significant difference among the three gifted student groups on knowledge of occupations and career decisions as measured by the Career Maturity Competence Test. The respondents in the Traditional Program knew

less about jobs and career decisions than those respondents in the Alternative and Gifted Programs. No interaction effects were found for selected variables. Hypothesis 2 was rejected for program and retained for selected variables and interaction effect.

The results of hypothesis 3 revealed a significant difference among the three groups for program and age as measured by their total Competence Test scores. The data revealed that Traditional Program respondents had lower mean scores than the Alternative and Gifted groups on the total competence scores. Although income was not significant, respondents in the high income group had higher mean scores than those respondents in the medium or low income groups. No significant differences were found for the sex and grade variables among program respondents. A two-way interaction was utilized to treat the variables age, sex, grade level, and family income with total competence scores and no significant interaction was found to exist between these variables. Hypothesis 3 was rejected for program and age and retained for sex, family income, grade, and interaction effect.

The findings for null hypothesis 4 which related to the respondents' involvement in paid work experiences, volunteer/leisure activities, and total competence scores indicated a significant difference for program and income. No significant differences were found for sex, age, grade, and volunteer/leisure activities among respondents in the three career programs.

Hypothesis 4 was rejected for program and income, but retained for sex, age, grade, and volunteer/leisure involvement.

Discussion

The statistical testing of each hypothesis in the study indicated a program's significance. The programs found to be significant were the Gifted and Alternative Career Programs. From these program descriptions (Chapter 3) it was revealed that each career program incorporated an experiential or on-the-job supervised training in a career interest of the participants. The experiential component was the mentorship activity in the Gifted Career Program and the internship for the Alternative Career Program.

The literature has indicated that career programs where participants were involved in supervised, on-the-job training enhanced the students' career maturity. Respondents in this study who participated in internship and mentorship experiences did not receive pay for their training; however, the experience provided answers to personal concerns about students' career interests and sometimes afforded further resources for parttime and summer paid employment.

Implications from the results of this study can be drawn implying a serious need for the school system to plan career programs that help students encounter a wider array of experiences which aid them "developmentally" to become more mature. The

experiential activities or on-the-job training serves as a viable vehicle to assist all students to become more vocationally mature.

Milne (1979) contends that as we approach the year 2000 and beyond, differentiated programming for gifted students becomes imperative. Educators who work with gifted students must realize that gifted students do not accept careers; they create them. Gifted students can synthesize and transfer known processes into new dimensions. Through these processes, other persons can find careers in unknown and undeveloped fields (Milne, 1979). According to Milne's theory, programming adequately for the facilitation of gifted students' career maturity requires careful planning, appropriate resources, personnel, and a sense of enthusiasm for the program and the students. Current literature on existing programs for gifted students indicates that they are few in number and that school systems have a need to enlarge, enrich, and improve programs for exceptional students if they are to fulfill their potential for themselves and society (Milne, 1979).

The following presents a discussion of the major areas tested in the hypotheses of the study:

Career Choice Attitude

This study found a relationship between career choice attitude and program participation among respondents in the three career programs. This finding is congruent with Kershner and Blair's (1976) findings. These researchers investigated the effect of an experience-based career program of tenth-, eleventh-, and twelfth-

grade students. Significant pretest to posttest changes were identified on all career maturity measures for the experimental group as compared to the control group.

Another researcher, Dykeman (1977), using a pretest, posttest control group design with potential dropouts and providing a job placement and classroom experience, found that project students out performed their counterparts in the control group. Similarities exist between Dykeman's study and this study. Participants who experienced career activities in and beyond the classroom scored higher on their career attitude measure than participants who had no experiential participation. Many career education programs with an experiential component have been known to expand students' career choice maturity. Experiential activities of the Gifted and Alternative Programs with their internships/ mentorships provided on-the-job training in a career interest field selected by the individual student. Examples of mentorships/ internships included working with artists, doctors, interior designers, real estate agents, hospital technicians and administrators, computer analysts, and for one student interested in legal work as a profession, a mentorship with a law firm. The Gifted and Alternative Programs differed from that of the Traditional, which did not provide freedom for students to pursue non-paid on-the-job experience.

Knowledge About Occupations

Occupational knowledge and career decision-making were found

to be related to the students' career maturity. There may be various reasons to explain this relationship between occupational knowledge/career decision making and career maturity of these students. It may be that (Gifted and Alternative) double career experience, classroom instruction, and the non-paid work (experiential) enabled the Gifted and Alternative participants to probe and explore career options in greater depth than their counterparts in the Traditional Career Program. The opportunity to serve with sponsors/mentors in a specified area also affords the student in the experiential activity to serve the community, broaden his scope of management, organization, planning, and participation in paid employment after school hours or during the summer holidays.

Johnson (1977), in a study of students in a career planning class, found significant gains between pretesting and posttesting of students. This finding supports the data in this study. In contrast to this finding, Schmoll (1975), in a study of eighth-grade gifted boys, found no significant differences in the number of students expressing a career choice, levels of aspiration of those choices, and the career maturity level between the experimental and the control group.

Research data supported Schmoll's hypothesis. The experimental group in Schmoll's study was subjected only to career experiences in the regular academic program as the Traditional group in this study. Due to his findings, he recommended that

gifted students need a "more formal career awareness curriculum." Research data in this study for Gifted and Alternative Career Program participants, exposed to a formal career curriculum, supports Schmoll's recommendation.

Career Competencies

The career competencies of program participants were found to be related to their career maturity. Again, the data revealed that participants who had engaged in experiential activities (non-paid work) as the mentorship/internship had higher mean scores than those participants who had no exposure in career activities beyond the classroom. Those participants in the Gifted and Alternative Programs appeared from the data analysis, to have better problem-solving and planning regarding careers. The literature suggests that differentiated programming for career development may challenge the gifted student to explore a smorgasboard of clusters of career opportunities (Milne, 1979). It may be that the gifted student who is exposed to a wide range of career alternatives through exploration can extend his career horizons beyond those careers about which he already knows.

Shields' (1979) study of student participation in an internship class presented findings different from the findings in this study. His data revealed no significant effect on the development of career maturity for gifted students.

Paid Work, Leisure/Volunteer Involvement

The three career program participants reported their experiences in the world of paid employment and leisure involvement. According to the reported information of occupations in which students were employed and their leisure interests, one would expect these experiences to be related to their career competencies. There may be various factors to consider in trying to explain reasons for finding no relationship between paid work, volunteer involvement, and career competencies of students. It may be that jobs at McDonald's, babysitting, selling in the department stores or working as stock clerks were not representative of the life-long career interests of these students. These paid jobs may serve simply as a means of obtaining extra spending money beyond the allowance afforded by their parents. Mahon (1973) contends from research with college freshmen that work experienced students were no more vocationally mature than those without work experience. The data from this research on work experience is congruent with the finding of Super (1960), who found that paid work experience was an insignificant variable in predicting career maturity. Although leisure is known as preliminary form of work experience, participants in this study may have considered leisure participation simply as a form of pleasure (play activity) during their discretionary time. This assumption conflicts with the theory of Hayes and McDaniels (1980), who contend that young adults explore,

test, and evaluate career interests through volunteer and work experience (p. 57).

Sex, Age, Grade, and Family Income

The findings of this study found no significant relationship between sex and the program participants' career choice attitude and career competencies. The findings support the theory of Crites, who found no significant differences between scores of males and females on the Career Maturity Inventory, but conflict with findings by Smith (1972), Groome (1974), and others who found that females obtained scores significantly higher than males. It has been suggested that the lack of sex differences found by Crites could be attributed to his norming sample. Other reasons may prevail for sex differences in career choice attitude and career competencies of youth. It may be, as suggested by the literature, that males and females have different rates of maturation for social and physical development which require differences in which individuals negotiate developmental tasks.

The grade level of program participants was found not to relate to the participants' career maturity. The literature suggests that as youths move through the grade by grade progression, career choice attitudes and competencies are incremental functions of grade and age. Herr and Enderlein (1976), who investigated the usefulness of the Career Maturity Inventory among three schools, three grades, males and females, found data to support this theory. They found that vocational maturity does proceed monotonically by

grade level. These researchers also concluded that the rate and level of increase are influenced by sex, school, and curriculum effects.

Family income, from findings of the study, was not considered an important factor in the career choice attitude and competencies of program participants. This finding conflicts with the hypothesis of Super and Overstreet (1960), who contend that the more favorable the socio-economic status, the more mature the vocational behavior. Other data has presented a different view of the nature of the relationship of socio-economic status to career maturity. Crites, with data collected from the Vocational Development Project, concluded that little correlation exists between socio-economic status and vocational attitude maturity.

Age was not found to be an important factor throughout the findings of this study. As discussed in the literature, some researchers (Davis, Hagan, and Strouf, 1962; O'Hara, 1962) have found that maturity of occupational choice was a function of age. Ferrell (1979) found no significance between age, occupational preference, and educational aspiration.

Conclusions

From the data of this study, the following conclusions have been drawn:

1. Program Differences: In this study, the participants in the Gifted and Alternative Career Programs had higher career choice attitude and competency scores

than those participants in the Traditional Career Program. Gifted and Alternative Career Programs provided a work component with their regular career curriculum. The work component was a non-paid work experience where participants were afforded supervised on-the-job training in a field of interest chosen by the individual students.

2. Paid Work, Volunteer/Leisure Involvement: The absence of a statistically significant finding for these hypothesized correlates of career maturity indicated that these correlates were not related to the program participants' career choice competencies.
3. Selected Variables. The variable sex (male and female), grades (10, 11, 12), family income, age, paid work experience, and leisure/volunteer participation could be viewed independently when the career maturity of the students in this research was considered to the presence of interaction effects.

Recommendations

In view of the results of this study, the following recommendations are presented:

1. Career education programs in the Richmond, Virginia, Public School System should:
   a. incorporate the work component experience as the mentorship/internship offered in the Gifted and

Alternative Career Programs. The findings of this study suggest that non-paid on-the-job training in career areas of interest enhanced students' career choice attitudes and career competencies. This type of work setting, considered also as an experiential activity, would enable youth to better select and prepare for a satisfying occupation.

2. Other studies and surveys should be conducted which may provide further resources to facilitate the career maturity of program participants.
   a. A study should be conducted to determine the differences or effects of other aspects of students' socio-economic (including family income) and cultural backgrounds on their career maturity development.
   b. A survey should be conducted (locally) to assess the receptiveness of business and community persons to serve as mentors for gifted students. This information should be compiled, disseminated to all schools, and updated every two years.
   c. This study should be replicated to determine if similar findings exist with a different group(s) assessed on the same criteria.

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APPENDICES

APPENDIX A

PERMISSION LETTER TO PARTICIPATE IN STUDY

June 1, 1981

Dear Parent and Student:

I am a graduate student at Virginia Polytechnic Institute and State University working under the supervision of Dr. Johnnie H. Miles, Professor in the Counselor Education Department at the University. Currently, I am engaged in conducting research on the career maturity of secondary school students.

The study has been approved by the Department of Research, Planning, and Development of the Richmond Public Schools. You are being asked to participate in this study.

Each participating student will be administered two instruments: (1) the Career Maturity Inventory (Crites, 1973), which measures knowledge about occupations and attitudes toward work, and (2) a Personal Data Sheet (developed by the researcher). A copy of each instrument will be available in the counseling office of each participant's school. Complete anonymity will be maintained and all data obtained will be reported in terms of group results rather than individual results.

Students who are willing to assist me, please follow the instructions provided:

1. Plan to meet with me in the _____ at your school on _____.

2. Bring a pencil when you come to the session.

3. For further details, you may contact me or your school counselor.

Sincerely,

R. P. Caston

jgj

- -

The researcher has my permission for _____ to participate in the study.

_____ _____

Signature of Parent Signature of Student

APPENDIX B

PERSONAL DATA SHEET

PERSONAL DATA SHEET

(Caston, 1981)

1. Name of School_____

Please check or write appropriate responses:

2. Sex: ____ Male____ Female 3. Grade: ___10 ___11 ___12

4. Age:_____

5. Indicate the best estimate of your family's total yearly income. (Total income would include incomes of both male and female parents if they both work.)

$3,000 - $11,999 _____

$12,000 - $17,999 _____

$18,000 - $25,000 or more _____

6. Indicate paid work experience below. List jobs:

_____

_____

7. Indicate any community or volunteer experience in which you have participated.

_____

8. Indicate your leisure or hobbies below:

_____

9. If you participated in an internship project at your school, indicate the career area below:

_____

10. If you participated in a mentorship program at your school, indicate the career area below:

_____

APPENDIX C

COMPETENCE TEST

ATTITUDE SCALE

Form A-1

Competence Test

Research Edition

CAREER MATURITY INVENTORY

John O. Crites, Ph.D.

Form A-1

Attitude Scale

CMI

CAREER MATURITY INVENTORY

John O. Crites, Ph.D.

Published by CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940.

APPENDIX D

McDaniels Leisure Inventory

Leisure Inventory

Examine the activities listed in the left hand column. For each activity, put a yes or no in the appropriate columns. Note that you will respond in either column one or column two but not both.

ACTIVITIES	1 If you have never participated, would you like to?	2 If you have participated, did you enjoy it?	3 Would you like to learn more about it?	4 Would you be interested in related occupations?
Music				
Singing				
Instruments				
Brass Woodwind Brass Percussion				
Performing				
Composing				
Listening				
Record Collection				
Dancing				
Others:				
_____				
_____				
_____				
_____				
Art				
Drawing				
Painting				
Woodcutting				
Sculpturing				
Glass Blowing				
Lithographing				

ACTIVITIES	1 If you have never participated, would you like to?	2 If you have participated, did you enjoy it?	3 Would you like to learn more about it?	4 Would you be interested in related occupations?
Photography				
Leatherwork				
Pottery Making				
Others:				
_____				
_____				
_____				
_____				
Crafts				
Decoupage				
Needlepoint				
Knitting				
Weaving				
Crewel				
String Art				
Macrame				
Woodcraft				
Glass Cutting				
Metal Craft				
Hooking Rugs				
Sewing				
Cooking				
Baking				
Crocheting				
Embroidery				

ACTIVITIES	1 If you have never participated, would you like to?	2 If you have participated, did you enjoy it?	3 Would you like to learn more about it?	4 Would you be interested in related occupations?
Others:				
_____				
_____				
_____				
_____				
Outdoor Activities				
Backpacking				
Sailing				
Canoeing				
Swimming				
Gardening				
Cycling				
Raising Animals				
Jogging				
Horseback Riding				
Others:				
_____				
_____				
_____				
_____				
Individual and Team Sports				
Baseball				
Softball				
Football				

ACTIVITIES	1 If you have never participated, would you like to?	2 If you have participated, did you enjoy it?	3 Would you like to learn more about it?	4 Would you be interested in related occupations?
Basketball				
Hockey				
Soccer				
Lacrosse				
Tennis				
Golf				
Wrestling				
Archery				
Ping Pong				
Gymnastics				
Track				
Others:				
_____				
_____				
_____				
_____				
Out of School—Community Activities				
Boy Scouts				
Girl Scouts				
Camp Fire Girls				
4-H				
Boys Clubs				
Hi-Y				
Tri-Hi-Y				

ACTIVITIES	1 If you have never participated, would you like to?	2 If you have participated, did you enjoy it?	3 Would you like to learn more about it?	4 Would you be interested in related occupations?
Religious Youth Group				
Others:				
_____				
_____				
_____				
_____				
In School—Extra-curricular				
Chess Club				
Art Club				
Monogram or Letter Club				
Girls Athletic Association				
Debate				
Student Government				
Newspaper				
Yearbook				
Choral Clubs				
Drama Club				
Fellowship of Christian Athletes				
Future Farmers of America				
Future Homemakers of America				
Future Business Leaders of America				

ACTIVITIES	1 If you have never participated, would you like to?	2 If you have participated, did you enjoy it?	3 Would you like to learn more about it?	4 Would you be interested in related occupations?
Others: _____ _____ _____ _____				
Miscellaneous				
Science Activities				
Model Building				
Reading				
Writing				
Watching TV				
Volunteer Work				
Others: _____ _____ _____ _____				

Leisure Occupations Duo

Many leisure activities and occupations are closely related. Select several occupations from your preferred Worker Trait Groups and list these in the spaces below. List the leisure activities you might engage in that involve the same kinds of tasks as these occupations.

Example:

Occupation: Carpenter

Related leisure activities: build bird house, model building, furniture repair, building stage scenery

Occupation: _____

Related leisure activities: _____

Occupation: _____

Related leisure activities: _____

Occupation: _____

Related leisure activities: _____

Occupation: _____

Related leisure activities: _____

Identify four leisure activities in which you participate or would like to participate. List any occupations that you think are related to these leisure activities.

Example:

Leisure activity: Model Building

Related occupations: Carpenter, Engineer, Contractor

Leisure activity: _____

Related occupations: _____

Leisure activity: _____

Related occupations: _____

Leisure activity: _____

Related occupations: _____

Leisure activity: _____

Related occupations: _____

APPENDIX E

RESOLUTION ON CAREER EDUCATION

The School Board of the City of Richmond, Virginia

Resolution on Career Education

We believe that it should be a policy of the Richmond Public Schools to provide educational programs for all youths and adults of the city to the end that:

- Students who graduate from grade twelve have saleable skills for productive work or are prepared to advance their education through an institution of higher education.
- Students who drop out of school before graduation from high school are prepared to enter the world of work.
- Adults who need training or retraining for employment or for upgrading their employment will be able to enter adult education programs provided by public education.

Therefore, we resolve to enrich our existing educational programs with career orientation, exploration, and specialization. To the extent that funds are available, the career education concept described above will be implemented.

Certified true copy of resolution
adopted by School Board of City of
Richmond, Virginia
November 16, 1972

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The Relationship of Participation in Three Career Programs and the Career Maturity of Gifted High School Students

by

Roberta Elizabeth Parsons Caston

(ABSTRACT)

The present study was concerned with career maturity of high school gifted students. The purpose of the study was to determine the relationship of participation in three different career education programs to the career maturity of gifted students. A secondary purpose of the study was to determine the relationship of selected variables (sex, age, grade, work experience, family income, leisure, and volunteer involvement).

The three career programs in which the students participated were:

The Alternative (internship), the Gifted (mentorship), and the Traditional. The Gifted and Alternative Career Programs provided classroom learning experiences and experiential activities which extended beyond the Traditional classroom approach and utilized the resources of the metropolitan community. The Traditional Career Program was taught in collaboration with the English and vocational classes within the school environment.

Career decision-making skills, interviewing, assessment of career interest, resume writing, high school program planning, seminars, guest speakers, occupational research, and career fairs constituted the career experiences of students in the Traditional Career Program.

The significance of the difference between the groups on the Career Maturity Inventory was determined by analysis of variance using the .05 level of significance. The location of existing differences were determined by the Duncan's Multiple Range Test.

An analysis of the data revealed: (1) Gifted program respondents had higher attitude maturity than the Alternative and Traditional Program respondents; (2) Alternative and Traditional Program respondents know less about occupations and career decisions than those respondents in the Gifted Career Program; (3) No differences were found for sex and grade; (4) A difference with family income on total competence scores; and (5) The variables age, sex, grade, income could be viewed independently when the scores of the respondents were considered with program interaction.