

AN ABSTRACT OF THE THESIS OF

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Title: AN ANALYSIS OF THE EFFECTIVENESS OF A CAREER EDUCATION CLUSTER
CURRICULUM AS REFLECTED BY STUDENT GROWTH IN CAREER MATURITY

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Purpose of the Study

The purpose of the study was to determine whether there were significant differences in students' career maturity as a result of exposure to the concepts of career education. The study evaluated the relative effectiveness of a developing comprehensive career education project to help students attain increased maturity of attitudes and competency in career decision-making skills. In order to accomplish this, the following procedure was considered.

Procedure

This comparative study utilized an experimental design consisting of one experimental and one control group. The experimental group consisted of students exposed to intensive career guidance and enrolled in classes in which teachers modified their presentation of subject matter to include career-relevant information. The students in the

control group were exposed to a traditional teacher oriented instructional environment. A pre-test/post-test design was utilized. Student career attitudes and behaviors were surveyed by the Attitude Scale of the Career Maturity Inventory (CMI-Att). The statistical procedures used to assess the measured results were the F statistic and the Least Significant Differences Test.

Conclusion

The research concluded that students in the experimental group, who experienced the exemplary career education project, showed no significant difference in career maturity, as measured by the CMI-Att, when contrasted with students in the traditional teacher oriented instructional environment. Although the analysis indicated a significantly lower career maturity mean score for the experimental population on the pre-test, the gain in post-test mean score was not significant. One of the two experimental schools did show a significant difference in mean scores in comparison with one of the six (6) control schools. This gain in post-test score may be attributed, in part, to the exemplary career education project.

Recommendations

It is recommended that:

- Research continue toward development of measurement instruments which will explicitly evaluate the concepts of career education as advocated by the local school district.

- The study be replicated with the inclusion of intellectual, cultural and socioeconomic variables in order to empirically verify changes in career attitudes.

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IN CAREER MATURITY

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Typed by Cheryl Micciche for Jeannette J. Hamby

*Dedicated to Mom and Dad . . .
who encouraged me to follow my own vision
of truth and love*

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There is a presence and an influence in nature which expands the mind and leads to renewed excitement in living.

It is told in the picturesque scene of Eastern Oregon, through the spirit and the strength of the Strawberry Mountains, of my personal gratitude to Wayne Courtney for his continued guidance and encouragement. It was that very spirit and strength which has allowed me to grow personally and professionally throughout this doctoral experience.

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AN ANALYSIS OF THE EFFECTIVENESS OF A CAREER EDUCATION
CLUSTER CURRICULUM
AS REFLECTED BY STUDENT GROWTH IN CAREER MATURITY

I. INTRODUCTION

The need for a major overhaul of American education has been voiced by educational leaders across the country. The response has been to fuse academia and vocationalism in an attempt to prepare every exiting student to effectively function in his choice of occupational or educational setting. This concept, known as career education, is viewed as a total educational system designed to provide students with the understandings and experiences needed to achieve personal fulfillment as well as to live productive, well-adjusted lives (Goldhammer, 1972). Career development has thus become the emphasis for all students.

Under the leadership of State Superintendent of Public Instruction, Dr. Dale Parnell, Oregon became one of the first states to develop an official policy for the implementation of career education in its schools. In 1972, the Oregon State Board of Education passed new minimum state requirements for school graduation identifying the need for career development education. With a commitment to tie the curriculum to life careers, local school districts began to develop implementation plans. The changes are seen as major innovations in the objectives of the educational system.

The effectiveness of any career education program should be measured in terms of the final product--a well-prepared student with rational, valid career planning and preparation. Since individuals

differ in career readiness in much the same way they differ with respect to any other human trait, this study examined the impact of a comprehensive career education project as measured by student growth in career maturity.

Statement of the Problem

This study was designed to determine if exposure to the concepts of career education increased the career maturity of students during their senior year in high school. The major purpose of this study was to evaluate the relative effectiveness of a developing comprehensive career education project to help the student attain increased maturity of attitudes and competency in career decision-making skills.

Rationale for the Study

Career development can be described as the accretion of a chain of decisions. The ability to make appropriate decisions becomes of key importance (Hilton, 1962). With the advent of career education and the era of an economy in which employment opportunities are uncertain or nonexistent, more and more individuals are finding that the directions their lives take are more self-determined than influenced by external circumstances. The process of decision making and implementation has long been recognized in career development. Ziller (1957), using concepts derived from game theory, suggested that vocational choices could be studied in terms of their utility for risk for the individuals, especially relating them to the vocational choice process. Tiedeman (1961) utilized a decision-making model in his conceptualization of the

vocational exploration and implementation process. Gelatt (1962) suggested a "sequential decision-making" conception of vocational development could provide counselors with a consistent, workable frame of reference.

It has long been recognized that high school students make a series of decisions that culminate in the choice of a career. Consequently, Spradley (1973) suggests that the primary goal of career education be to enable every person to make informed choices as he or she develops his or her own career.

A career education curriculum is defined as a series of experiences--integrated and cumulative--designed to help each student achieve increased power to make relevant decisions about his life (Goldhammer, 1972). Ginzberg (1971) charged that high school counselors spend too little time in activities specifically designed to lead to improved decision making and long-range planning. Recognizing that such a procedure cannot be an exercise completed once and then abandoned, Herr (1972) calls for a continuing reinforcement of decision-making, value refinement and personal planning. In the area of evaluation, the U.S. Office of Education currently recommends that all exemplary programs assess the extent to which students demonstrate increased competency in career decision-making skills (1974).

Career decision making suggests that there are some general principles which foster the fullest realization of career education. Curriculum planners have been sensitive to the views expressed by proponents of career education (Hoyt, 1972; Herr, 1972; Marland, 1972). One aspect of curriculum development involved the weaving of career

education into the present school subjects rather than developing separate, self-contained courses. Another strategy involved the clustering of concepts as a way of organizing information about the world of work. The cluster concept is aimed at the preparation of eleventh and twelfth grade youth for entry level capability in a variety of related rather than specific occupations. It is designed to enhance the individual's potential employability by offering a wider range of entrance skills as well as a higher level of articulation across several occupational areas. This type of fundamental training, it is believed, will enable the individual to move back and forth over several occupational categories as well as vertically within the occupation. The cluster approach, which offers experiences in a family of related occupations with many commonalities of human requirements, provides a secondary student with a greater degree of flexibility for career decision making rather than demanding a commitment to the "one-goal" directed traditional program (Parnell, 1973).

Therefore, educators need means of assessing readiness characteristics if they are to help students master the knowledge, attitudes, and skills required for successfully coping with career planning and implementation.

The Career Maturity Inventory, a product of twelve years of vocational development research by John Crites, was designed to measure the maturity of attitudes necessary for realistic decision making. Others (Hershenson, 1969; Ivey and Morrill, 1968) have written of the implications of conceptualizing career decision making as a

developmental process for implementing programs in counseling, group guidance and occupational orientation courses. These programs inherently are designed to facilitate career maturity of adolescents.

Recognizing that vocational or career maturity is by definition the goal toward which career development is directed, the question remains: can career maturity be facilitated by a comprehensive career education project?

Need for the Study

Since career education is a relatively new concept, there is a need to find conceptually sound and empirically practical ways of judging its impact on students. There is a need to measure the student learning outcomes in terms of career maturity.

Although some treatments have been shown to have a salutary effect upon the maturity of vocational attitudes, others have not been effective (Crites, 1969). There is little evidence, however, to substantiate the effectiveness of a comprehensive career education program as reflected by student growth in career maturity. Therefore, further research is needed.

Assumptions

Assumptions that exist in this study can be categorized into two major areas. The first assumptions affect the internal strength of the design. With the proliferation of career education materials, it is impossible to prevent the control school teachers from being exposed to career education concepts. It is also impossible to prohibit their

incorporation into the educational process. Likewise, it is undoubtedly true that there will be differences in the effectiveness with which individual teachers incorporate career education concepts into the educational process of the experimental schools. Other assumptions relate to the generalization of the results. Because of the following factors only limited generalizations can be made.

1. The study is limited to approximately 450 senior high school students.
2. The study is limited to seven school districts in Oregon.
3. The study is limited to one academic year.
4. The study is limited to the measurement of career maturity by Crites' Career Maturity Inventory-Attitude Scale.

Definitions of Terms

The following are the most important terms in this document, defined in the interest of clear understanding as they apply to this study.

Career Decisions

An individual's career direction setting and his plans for immediate, intermediate, and long-term career development, both produced by a rational process of decision making.

Career Development

A lifelong process which involves a series of experiences, decisions, and interactions, and which, taken cumulatively, results in the formulation of a viable self-concept and provides the means through

which that self-concept can be implemented both vocationally and avocationally.

Career Maturity

The place reached in an individual's vocational life where his maturity can be expressed with reference to either his progression along the continuum of vocational development from exploration to decline or to the similarity between his behavior and that of the oldest individuals in his vocational life stage.

Vocational Choice

A process made up of a series of events of "choice acts" which takes place over a considerable period of time, usually during the ten years from the end of childhood to the beginning of youth, and which largely terminates when the individual enters an occupation.

Vocational Development

The process of growth and learning which subsumes all instances of vocational behavior. The progressive increase and modification of a person's capacities and dispositions for particular kinds of vocational behavior and of his repertoire of vocational behavior. In this sense, vocational development encompasses all aspects of development which can be identified as related to work.

Vocational Maturity

Synonymous with Career Maturity.

II. REVIEW OF RELATED LITERATURE

The conceptual framework and relevant literature review are presented in this chapter. The first section of the chapter reviews the conceptual foundations and theories which serve to describe the dominant approaches to career development. The second section reviews the development of the concept of career maturity. Career development studies relating to the Career Maturity Inventory are summarized in the third section.

Although much of the literature cited in the chapter identifies vocational maturity and vocational development rather than career maturity and career development, the terms are used synonymously for purposes of this study.

Conceptual Foundations

In an historical sense, the most consistent approach to career development has been that of the trait and factor theory in vocational decision making. Vocational choice was viewed primarily as a point-in-time event in which the assessed characteristics of individuals were matched with the human requirements of occupations. Parsons (1909), Paterson and Darley (1936), Williamson, (1939), and Dvorak, (1947) were proponents of the point-in-time theory of vocational choice. More recently, the approach to career development has increasingly focused upon a conception of vocational choices as a long-term, developmental process rather than a momentary or transitory phenomenon. This continuity of the vocational choice process has been emphasized by

Dysinger (1950); Ginzberg, Ginsberg, Axelrad, and Herma (1951); and Super (1953). Consistent with this emphasis upon the longitudinal and continuous nature of vocational decision making is the concept of vocational maturity as defined by Super (1953) as a development along a continuum of readiness to make career decisions.

Although the approaches which describe career development can be classified in several ways, the four basic career development theories as categorized by Osipow (1968) will be briefly reviewed in this chapter.

The Trait-Factor Theory of Career Development

Extrapolated from counseling experience with "matching men and jobs" (Patterson, 1949) and founded upon the procedures and propositions of "trait and factor" theory (Pepinsky & Pepinsky, 1954), this theory emphasized the instantaneous, nondynamic elements in vocational decision making. It assumed that if the traits of people and requirements of jobs can be isolated and quantified, it would be possible to match people with jobs. The decision was seen as a point-in-time event. Parsons (1909) identified a three-step process through which a person proceeds in choosing a vocation:

1. A clear understanding of himself, (his) aptitudes, abilities, interests, ambitions, resources, limitations, and their causes
2. A knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work
3. True reasoning on the relations of these two groups of facts

Few questions were raised about the soundness of the traditional trait-factor theory until 1950. Criticism centered around the inability to describe a personality in all of its dimensions, the lack of a theoretical statement about motivation and the neglect of the importance of choices which precedes actual entry into an occupation (Brayfield, 1961; Beilin, 1955; Tiedemann and O'Hara, 1962). Thus, the conception of vocational choice began to be seen as a long-term, deductive, developmental, process (Super & Bachrach, 1957) encompassing many interrelated behaviors of the individual at various points in his life.

The Sociological Theory of Career Development

While the counseling and guidance profession was emphasizing tests, sociologists and social psychologists began to discover the importance of social factors relevant to career development. Contending that the vocational goal is determined largely by the status expectations of the social class, Miller and Form (1951) state that the accident of birth (establishing family, race, nationality, social class, and educational and cultural opportunities) is the deciding factor in the determination of the occupations of most workers. Research by Hollingshead (1949) and Caplow (1954) support the conclusion that vocations are chosen as a reflection of the experiences in the social class in which one was born.

More recently, Super (1957) stated that: "Given sufficient knowledge, there is no such thing as chance" and contends that factors of intelligence and socioeconomic status are predictable and can be

taken into consideration as the individual plans his career. Recognizing the need for "sufficient knowledge" Crites (1969), in contrast, submits that chance factors are unpredictable precisely because little is known about them.

It has been pointed out (Calis, 1966; Resnkoff, 1969) that vocational development theory is most relevant to the vocational development of the middle class as it reflects a common cultural theme (LoCascio, 1974). The emerging needs of women, minority groups, and the youth culture challenge vocational guidance to meet these pervasive social changes. To reflect these new conditions and needs, Donald Blocher (1973, p. 78) has called for a reconceptualization of the career guidance function:

Since each individual interacts with his particular social, cultural, and physical environment in a unique way, vocational guidance recognizes that work will not have the same meaning, nor even the same centrality, for human beings with differing needs, perceptions, and characteristics.

The Personality Theory of Career Development

From the elaborate lists of needs inherent in the process of vocational choice as postulated by Hoppack (1957) to the detailed personality types for vocational areas described by Holland (1959), the basic premise underlying this approach to career development has been that individuals look to job selection primarily as a source of need satisfaction.

In 1966, Holland offered a theory vocational choice which differentiated patterns of personal development into six categories: Realistic, Intellectual, Social, Conventional, Enterprising, and

Artistic. He contends an individual searches for an environment and vocation that permits him or her to exercise skills and abilities, to express attitudes and values, to take on agreeable problems and roles, and to avoid disagreeable ones. Therefore, an individual's behavior can be explained by the interaction of his or her personality pattern and his or her environment.

Other, (Siegelman and Peck, 1960; Super, 1953) have supported the theory that the choosing of an occupation should be viewed within the context of the general personality development of the individual as he or she comes to view himself and the world. More particularly, this theory postulates that choice is made on the basis of the extent to which an individual "sees himself in the role" or the role as befitting him (Korman, 1966).

Focusing on family atmosphere, Roe (1957) viewed occupational choices as a process of "self-categorization" with classification based upon goals or needs, whether conscious or unconscious. The intensity of these needs was noted as the major determinant of the degree of motivation at which the mature occupational life is set. Drawing from analytic theory and Maslow's postulates, Roe looked upon the individual as an "integrated, organized whole." She related the predominant family attitudes of (a) acceptance, (b) concentration, or (c) avoidance as relationships which predict the child's vocational orientation toward one of eight occupational groups.

Other personality theorists have conceptualized personality development in terms of a series of life stages, although they have differed widely on the number of stages involved and the basis for

defining them. Buehler (1933) defined the stages in her theory primarily on the basis of the socioeconomic expectations of the individual (growth, exploration, establishment, maintenance, and decline). Sullivan (1947) posited seven stages (infancy, childhood, juvenile era, preadolescence, early adolescence, late adolescence, and maturity) while Murphy (1947) delineated three (global, differentiated, and integrated).

In 1942, Super (1957) applied the concept of life stages to vocational choice and adjustment. His work began to direct the attention of psychologists and counselors to the possible contributions of a developmental approach. Miller and Form (1951), working in the field of industrial sociology, also posited a series of career development stages. Thus began the approach of defining relevant principles of developmental psychology to life-stage vocational development theory building.

The Developmental Theory of Career Development

The main theme of developmental theory holds that vocational behavior occurs within an ordered sequence of life stages or periods in the individual's life. This sequence constitutes a continuous process which starts in childhood and ends in early adulthood. This theory holds that

1. Individuals develop more clearly defined self-concepts as they grow older, although these vary to conform with the changes in one's view of reality as correlated with aging;
2. People develop images of the occupational world which they compare with their self-image while trying to make career decisions; and

3. One's perception of the adequacy of the eventual career decision is based on the similarity between an individual's self-concept and the vocational concept of the career he eventually chooses. (Osipow, 1968).

The following theoretical positions of vocational choice and career development are the best known and most widely accepted. It must be noted, however, that the theories are closely intertwined and in many instances, draw heavily upon one another both in terms of actual practice and empirical research (Crites, 1969).

The Ginzberg Theory

Recognizing the lack of a developmental perspective on vocational choice and adjustment, Ginzberg (1951) and associates began the study of identifying and evaluating the major factors in the vocational decision-making of the individual during successive periods of his maturation. The formulated theory was derived from interviews with adolescent boys and girls and consisted of three propositions about the developmental nature of vocational choice. The authors first point out that choice is not a single event in time but rather is a process which may span the entire lifetime, from birth to death. Second, the process is largely irreversible. Once an individual is launched upon a course of action, such as education or training for a specific job, he or she finds it increasingly difficult to change his goals as time passes. An individual is restricted by previous decisions and effort, time and money expended. Thirdly, the process ends in a compromise between an individual's needs and the realities of life. This proposition reflects the contention that every individual attempts to choose a career in which as much use as possible can be made of his or her interests and

capacities in a manner that will satisfy as many of his values and goals as possible. The compromises the individual makes are between his wishes and his possibilities.

In developing the theory, Ginzberg divided the occupational choice process into three major phases entitled the fantasy, tentative and realistic periods. The chief characteristic of the fantasy period (before age 11) is the arbitrary nature of the child's choices and the lack of realism reflected in the occupational preferences expressed during that period. He believes that he can become whatever he wants to become.

During the tentative period, (between 11 and 17 years of age) when tentative choices are made exclusively on interests, the researchers discerned four stages: interest, capacity, value, and the transition stage. Thus, soon after an interest in an occupational area has been noted, the individual becomes aware of his own abilities. As he grows older, he begins to recognize activities for their extrinsic and intrinsic value. He enters the transition stage as he begins looking forward to college or a job and moves toward the realistic period.

The realistic period (between 17 and young adulthood) includes the three stages of exploration, crystallization, and specification. During this period the individual begins to discern ways in which to implement the many tentative choices. He or she begins to evaluate the feedback of vocational behaviors in a more realistic context. The crystallization stage appears with the emergence of some clear vocational pattern based on past successes and failures. The final specification stage arrives as the individual chooses a position or a

professional specialty. At this point, the process is complete, having occurred over perhaps as much as 10 to 15 years in the life of the young adult (Ginzberg and others, 1951).

The Super Theory

The transition from the trait-factor approach to a developmental approach continued as Super sought to define a new perspective. He surveyed and organized the diverse elements present into a summary statement of a comprehensive theory. The theory was stated in the following series of ten propositions:

1. People differ in their abilities, interests, and personalities.
2. They are qualified, by virtue of these characteristics, each for a number of occupations.
3. Each of these occupations requires a characteristic pattern of abilities, interests, and personality traits, with enough, however, to allow both some variety of occupations for each individual and some variety of individuals in each occupation.
4. Vocational preferences and competencies, the situations in which people live and work, and hence their self-concepts, change with time and experience (although self-concepts are generally fairly stable from late adolescence until late maturity), making choice and adjustment a continuous process.
5. This process may be summed up in a series of life stages characterized as those of growth, exploration, establishment, maintenance, and decline, and these stages may in turn be subdivided into (a) the fantasy, tentative, and realistic phases of the exploratory stage, and (b) the trial and stable phases of the establishment stage.
6. The nature of the career pattern (that is, the occupational level attained and the sequence, frequency, and duration of trial and stable jobs) is determined by the individual's parental, socioeconomic level, mental ability, and personality characteristics, and by the opportunities to which he is exposed.

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

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

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

10. Work satisfactions and life satisfactions depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits, and values; they depend upon his establishment in a type of work, a work situation, and a way of life in which he can play the kind of role which his growth and exploratory experiences have led him to consider congenial and appropriate. (Super, 1953).

Super placed more emphasis than Ginzberg upon vocational choice as a process. He suggested the term development be used "rather than choice, because it comprehends the concepts of preference, choice, entry, and adjustment." (Super, 1953). He proposed that an individual strives to implement his or her self-concept by choosing to enter the occupation seen as most likely to permit self-expression. He introduced the concept of vocational maturity to denote the individual's degree of development from the time of early fantasy choices in childhood to decisions about retirement from work in old age, with self-concept becoming more stable as one matures (Super, 1955).

Super identified five vocational life stages, corresponding to a phase within the development of the self-concept in which an individual passes through as he matures. A description of the vocational behavior characteristic of each life stage is indicated.

1. Growth Stage (Birth-14)

Self-concept develops through identification with key figures in family and in school; needs and fantasy are dominant early in this stage; interest and capacity become more important in this stage with increasing social participation and reality-testing. Substages of the growth stage are:

FANTASY (4-10). Needs are dominant; role-playing in fantasy is important.

INTEREST (11-12). Likes are the major determinant of aspirations and activities.

CAPACITY (13-14). Abilities are given more weight, and job requirements (including training) are considered.

2. Exploration Stage (Age 15-24)

Self-examination, role tryouts, and occupational exploration take place in school, leisure activities, and part-time work. Substages of the exploration stage are:

TENTATIVE (15-17). Needs, interests, capacities, values, and opportunities are all considered. Tentative choices are made and tried out in fantasy, discussion, courses, work, etc.

TRANSITION (18-21). Reality considerations are given more weight as the youth enters labor market or professional training and attempts to implement a self-concept.

TRIAL (22-24). A seemingly appropriate field having been located, a beginning job in it is found and is tried out as a life work.

3. Establishment Stage (Ages 25-44)

Having found an appropriate field, effort is put forth to make a permanent place in it. There may be some trial early in this stage, with consequent shifting, but establishment may begin without trial, especially in the professions. Substages of the establishment stage are:

TRIAL (25-30). The field of work presumed to be suitable may prove unsatisfactory, resulting in one or two changes before the life work will be a succession of unrelated jobs.

STABILIZATION (31-44). As the career pattern becomes clear, effort is put forth to stabilize, to make a secure place, in the world of work. For most persons these are the creative years.

4. Maintenance Stage (Age 45-64)

Having made a place in the world of work, the concern is now to hold it. Little new ground is broken, but there is continuation along established lines.

5. Decline Stage (Age 65 on)

As physical and mental powers decline, work activity changes and in due course ceases. New roles must be developed; first that of selective participant and then that of observer rather than participant. Substages of this stage are:

DECELERATION (65-70). Sometimes at the time of official retirement, sometimes late in the maintenance stage, the pace of work slackens, duties are shifted, or the nature of the work is changed to suit declining capacities. Many men find part-time jobs to replace their full-time occupations.

RETIREMENT (71 on). As with all the specified age limits, there are great variations from person to person. But, complete cessation of occupation comes for all in due course, to some easily and pleasantly, to others with difficulty and disappointment, and to some only with death. (Super, 1957).

These stages, further specifying the process of vocational development, suggest the gradual nature of vocational concerns, beginning in late childhood with identification of key figures, becoming stronger stirrings in early adolescence as awareness grows and finally leading to educational and vocational decisions. These decisions which are then evaluated, modified or crystallized, lead to the more mature stages of implementation and stabilization of vocational behaviors. In a more recent extension of his theory, Super identified this process in vocational development tasks, relating it to the world of work. The tasks of these life stages have been postulated as: (a) crystallizing a vocational preference, (b) specifying it, (c) implementing it, (d) stabilizing in the chosen vocation, (e) consolidating status and advancing in the occupation. (Super, 1963 and 1969).

In conclusion, a theory, inherent in and emergent from the research and philosophy of psychology for two decades, had provided the basis of a career development model. A model emphasizes movement by the individual along one of a number of possible pathways through the educational system, into, through the world of work.

The Tiedeman Theory

Following Ginzberg's and Super's emphasis of a developmental life-stage approach to career development, Tiedeman (1961); Tiedeman and O'Hara (1963) attempted the clarification of self-concept and assessment of decision-making stages in career development. Tiedeman began his analysis by dividing the overall process of vocational

decision making into two periods. The succession of stages represents a progressive realization of the individuals goals as he enters and advances in his chosen position:

- I. The Anticipation Period
 - A. Exploration Stage
 1. Familiar with alternatives available
 2. Consideration of alternatives available
 - B. Crystallization Stage
 1. Acceptance of alternatives which are feasible or realizable
 2. Rejection of alternatives which are inappropriate or unobtainable
 - C. Choice Stage
 1. Decide upon alternative to follow
 2. Gets ready to act upon decision
 - D. Clarification Stage
 1. Works out details of implementation of his choice
- II. Implementation and Adjustment Period
 - A. Induction
 1. The person is accepted
 - B. Transition
 1. Reaction is assertive
 - C. Maintenance
 1. The person considers himself successful
 2. Status quo reigns as possible

The researchers identified the mechanisms of (a) differentiation and (b) integration as the processes by which the individual moves through these many periods and stages. Differentiation refers to discriminations among the events which surround the individual, including his or her own thoughts and ideas as well as external events. Integration involves the separation of the whole from the parts. At each stage of the sequence of decisions there is a continuous overlapping and interaction between differentiation and integration with several regressions at certain points, but with an overall forward thrust.

Tiedeman and O'Hara see the translation of the self-concept into vocational terms as a developmental process being continually revised by experiences. They also emphasize the interpenetration of vocation and personality development gradually through many small decisions. They indicate vocational development does indeed consist of a series of decisions with the final career choice being most significant.

Concept of Vocational Maturity

Emanating from career development theory is the concept of career maturity. That certain vocationally related behaviors normally occur within each of an ordered sequence of life stages has been widely recognized as an important vocational development proposition.

From the conceptualization of the vocational life stages evolved the concept of vocational maturity which Super (1955, p. 153) defined as denoting "the degree of development, the place reached on the continuum of vocational development from exploration to decline."

Carter's (1940, p. 187) classic research on the patterning of interests in adolescents led him to conclude,

The development of vocational interests involves interactions between growth processes, some of which are educationally controlled and some of which are biologically controlled. . . . Growth in this field is a part of general maturation, of developing individuality (p. 197)

Similarly, Ginzberg, et al. (1951, p. 60) observed that the way a young person

"deals with his occupational choice is indicative of his general maturity and, conversely, in assessing the latter, consideration must be given to the way in which he is handling his occupation choice problem."

From the conceptualization of the vocational life stages, evolved the explicit statement of vocational maturity which Super defined as denoting "the degree of development, the place reached on the continuum of vocational development from exploration to decline." (Super, 1955, p. 153). Three conceptualizations of vocational maturity were presented by Super (1955; 1957). The Vocational Maturity Quotient (VMQ) was viewed as (a) the ratio of vocational maturity (one's actual life stage) to chronological age, (b) the ratio of actual life stage to expected life stage, and (c) the ratio of actual life stages to the vocational behavior of others. During the development of the Career Pattern Study (CPS), Super and Overstreet (1960, p. 33) suggested the five dimensions and twenty indices of vocational maturity shown in the following.

- I. Orientation to Vocational Choice
 - A. Concern with choice
 - B. Use of resources in orientation

- II. Information and Planning About the Preferred Occupation
 - A. Specificity of information about the preferred occupation
 - B. Specificity of planning for the preferred occupation
 - C. Extent of planning activity
- III. Consistency of Vocational Preference
 - A. Consistency of vocational preferences within fields
 - B. Consistency of vocational preferences within levels
 - C. Consistency of vocational preferences within families
- IV. Crystallization of Traits
 - A. Degree of patterning of measured interests
 - B. Interest maturity
 - C. Liking for work
 - D. Degree of patterning of work values
 - E. Extent of discussion of rewards of work
 - F. Acceptance of responsibility for choice and planning
 - G. Vocational independence
- V. Wisdom of Vocational Preferences
 - A. Agreement between ability and preferences
 - B. Agreement between measured interests and preferences
 - C. Agreement between measured interests and fantasy
 - D. Agreement between occupational level of measured interests and level of preference
 - E. Socioeconomic accessibility of preference

In the analysis of vocational development data collected on 142 ninth-grade boys, however, Super and Overstreet (1960, p. 143)

concluded that only four of the 20 indices "had a sufficient number of statistically positive intercorrelations to be considered adequate as measures of vocational maturity at the ninth-grade level." The four constructed valid indices consisted of one general factor; Planning Orientation.

Published later, Super et al. proposed eleven indices of "Behavior-continua and facilitating attitudes and attributes." (Super, 1963, p. 84) The eleven attributes and behaviors were:

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

Another major research project, the Career Development Study (CDS), conducted by Gribbons and Lohnes (1968) used an approach similar to Super's Career Pattern Study (CPS). Again using the structured interview measurement procedure, these investigators described the careers of 111 subjects over an eight year period of development, from eighth grade to two years post high school. Gribbons (1964) developed the Readiness for Vocational Planning (RVP) scales to measure

vocational maturity. Five of the eight RVP scales were similar to Super and Overstreet's (1960) dimensions. Three additional scales placed more emphasis on aspects of self-knowledge than did the indices of the CPS.

Analysis of the RVP data revealed that curriculum choice could be delayed until after the ninth grade. Gribbons and Lohnes (p. 108) noted the importance of the delay in forced curriculum choice and stressed the need for early identification of those students with a low RVP.

The Teachers College team of Forrest and Thompson also sought to revamp the Career Pattern Study scales into a practical instrument designed to measure the construct of vocational maturity. In a study of the effects of exposure to the Educational and Career Exploration System (Minor, Myers, and Super, 1969), a computerized guidance program for high school students, the instrument evolved through several versions resulting in its present form, The Career Development Inventory (CDI) (1972). The current form of the CDI yields scores for three scales designed to measure three important aspects of vocational maturity: Planning, orientation, resources for exploration, and information and decision-making. Although the instrument is designed to be used in program evaluation and counseling, LoCascio (1974) cautions its use with out-of-school inner-city dropouts and notes that the items and norms may reflect primarily a white-middle-class bias.

Building on work with the Career Pattern Study in his own programmatic research at the University of Iowa, Crites (1961) provided a synthesis of the various definitions of vocational maturity as a

basis for the construction of an instrument. Reviewing Super's (1955; 1957) five definitions of vocational maturity, Crites labeled two as measuring one's "absolute" degree and three as defining one's "relative" degree of vocational maturity. Noting the conflicting criteria, Crites (p. 259) distinctively delineated vocational maturity by degree and rate.

Degree of vocational development refers to the maturity of an individual's vocational behavior and that of the oldest individual in his vocational life stage. . . . In contrast, rate of vocational development refers to the maturity of an individual's vocational behavior in comparison with that of his own age groups.

The criterion for degree of development was the older age group (scaled scores) while the criterion for the rate of behavior was the comparison within a particular age group (percentile scores).

In an attempt to correlate vocational maturity with age and develop a measurement instrument, Crites (1964) developed a model comprised of a suprafactor, Degree of Vocational Development. The model was composed of four dimensions which were related to Super's five constructs for the measurement of vocational maturity: consistency of vocational choice, wisdom of vocational choice, competencies, and vocational choice attitudes. Conceived of primarily as cognitive or ego functions, choice competencies involved such mental processes as assimilating information about self and reality, resolving conflicts between alternative courses of action, establishing future goals, and relating means to ends through planning. In contrast, choice attitudes were more conative in nature and referred to involvement in the choice process, orientation toward work,

independence in decision making, preference for choice factors, and conceptions of the choice process. Together with the "consistency of vocational choice" and "wisdom of vocational choice" dimensions, these choice competencies and attitudes can be thought of as comprising the construct of vocational maturity as postulated by Crites (1965, pp. 4-5). These dimensions are considered by Crites to represent the construct of vocational maturity and were the background for the development of a criterion measure for vocational maturity, the Vocational Development Inventory (VDI) now entitled The Career Maturity Inventory (CMI) (Crites, 1964, pp. 324-340).

Dilley (1965) reviewed the indices described by Super and Overstreet (1960) and related "acceptance of responsibility," "concern with choice," and "extent of planning" as indices of decision-making ability. An example would be: students classified as good decision makers should to some extent be classified as vocationally mature. The development of an instrument measuring decision-making ability followed. The relationship of scores on the Decision-Making Inventory (DMI) to three correlates of vocational maturity were measured. The correlates were: intelligence, achievement, and participation in extracurricular activities. The DMI was administered to 174 high school seniors in the Midwest. The study revealed that a greater percentage of students make "good" decisions than was predicted by chance. It was found that high DMI scores were associated with: (a) high intelligence, (b) high achievement, and (c) high frequency of participation in extracurricular activities.

Dilley (1965, p. 427) concluded that:

Vocational maturity may well reflect an increase in planning activity, acceptance of responsibility, and a general concern about the making of decisions. Vocational maturity may also reflect growth in rational decision making.

Guided by the developmental theorists, Vriend (1969) developed the Vocational-Education Survey (V-ES) which provides a measurement for each of six vocational maturity (VM) components:

1. School achievement as determined by report cards,
2. Agreement between levels of vocational aspiration and expectation,
3. Vocational and educational planning,
4. Participation in activities in and out of school,
5. Vocationally related self-knowledge, and
6. General job knowledge.

The sum of the six subscores yielded by these measures comprised of individual's vocational maturity rating (VMR).

Following an exposure to a two-year program of structured career related activities, 168 inner-city high school seniors were tested. The resulting VMR scores were compared with the VMR scores of 112 control students. Vriend found that experimental groups obtained higher VMR's and higher scores in all vocational maturity component areas. School achievement emerged as the best predictor of vocational maturity rating. The investigative findings indicated that a program which integrates vocationally related knowledge and activities into the educational experience of the inner-city youth can positively influence vocational maturity irrespective of sexual or curricular group membership.

Westbrook and Mastie (1971) constructed a measure of vocational maturity based upon the constructs developed by Super in the Career Pattern Study and organized according to Crites' (1965) model of vocational maturity. The instrument was designed to measure an individual's level of cognitive vocational maturity in six areas: field of work, job selection, work conditions, education required, attributes required, and duties. The six areas were selected for inclusion in the Cognitive Vocational Maturity Test (CVMT) because they matched most closely the objectives of career education programs. The test was administered to a total standardization sample of 7,367 North Carolina public school pupils enrolled in a state-wide career exploration program for grades six through nine. One of the Westbrook and Cunningham (1970) implied criteria for an adequate vocational maturity instrument was that it include measures on all 18 variables of the Crites (1965) vocational maturity mode. Unfortunately, the test measures but one variable; occupational information.

In conclusion, the consistent conceptualization of vocational maturity and the research of Super's Career Pattern Study has provided a theoretical model which can be related in behavioral terms with measurable criteria. Crites' initial work has provided the basis for further research which will attempt to relate the variables and dimensions of the model to age.

Career Development Studies Relating to the
Career Maturity Inventory

Conceived and constructed by Crites to measure the maturity of attitudes and competencies that are critical in realistic decision making, the Career Maturity Inventory (formerly the Vocational Development Inventory) is the product of twelve years of vocational development research. The CMI provides two types of measures: career choice attitudes and career choice competencies. These dimensions, in addition to (a) consistency of career choice over time, and (b) realism of career choice in relation to personal capabilities and employment opportunities, provide the basis of the Crites research model for exploring vocational development.

Crites, in research conducted in conjunction with the standardization of the Vocational Development Inventory, asserted that verbal vocational behaviors were not affected by either sex or school differences, and that they were more closely related to grade than age.

Consistent with Super's vocational life stages (1957, p. 40) which have transitional points between ages 11-12 and 13-14; and between ages 13-14-15-17, Crites also reported that transitional points between stages of development were apparent. These occurred between grades 6 and 7, and between grades 9 and 10, following the pattern of the 6-3-3 school system in which the study was conducted (1965).

Crites found increasing vocational development at each grade level until grade 11. At this point, a discontinuity appeared which Crites called "regression in vocational development at a choice point." (1969, p. 204) At which time Crites added: "He develops a cognizance

of the reality which infringes upon him, and which imposes limitations upon his endeavors. . .he expresses uncertainty and indecision" (1969, p. 159). Students apparently regress to immature attitudes which express their insecurity as they face the uncertainties of work or further training.

Since its initial standardization, more than 100 studies of various aspects of the Attitude Scale have been undertaken. The following studies were chosen for their relevance to this particular study. The review develops a further understanding of vocational maturity, as measured by the dimension of choice attitudes, and its relationship to variables involving several different populations.

The Attitude Scale of the Career Maturity Inventory has been related to several criteria of cultural and socioeconomic status. Harris (1966) and Cover (1968) reported nonsignificant findings on college ($N = 306$) and high school ($N = 162$) students, respectively, between VM scores and a scaling of father's occupation and/or educational level and source of family income.

Miller (1968), however, did find a relationship between socioeconomic status, based on employment status of breadwinner, and the Attitude Scale scores for American Indians attending nonintegrated schools ($N = 102$). One background variable noted by Miller as worthy of further research was parental educational level.

Schmieding and Jensen (1968) investigated the impact of an occupations class on a group of American Indian students in a residential setting with a comparison group of Caucasian students. Seventy-eight eleventh-grade and twelfth-grade residential Indian high

school students were equally divided on a random basis into experimental and control groups. A group of 39 Caucasian students in a nearby South Dakota high school made up the comparison group.

The Vocational Development Inventory (VDI) was administered with results reported as: (a) no statistical difference between the vocational development scores of the experimental and control group of Indian students, and (b) the Caucasian comparison group scored significantly higher on vocational development than did either of the Indian groups (Schmieding and Jensen, 1968, p. 121). They indicated that short-term treatment (such as an eight week occupations unit) has a limited influence on firmly established impressions and attitudes. Occupational classes, developmental in nature and offered on a long-term basis, appeared to be a more tenable approach (p. 122).

Ashbury (1967) questioned the life-long process and life-stage approach to vocational development for disadvantaged and lower class students and supported LaCascio who suggested that the continuity of the vocational development process may vary with socioeconomic status. Ashbury postulated that for lower-class and disadvantaged students the life-stages process may be quite discontinuous, if it exists at all.

The Vocational Development Inventory and the Occupational Aspiration Scale (OAS, Haller and Miller) were administered to investigate the maturity and aspiration level of rural Appalachian eighth-grade boys.

Ashbury reported that eighth-grade boys of rural Appalachia Kentucky are vocationally immature, but they do not express low occupational aspirations. The students' vocational development was not

strongly related to the realism of the aspirations. The correlation between educational aspirations and occupational aspirations was not high. His findings support the suggestion that vocational development may be quite discontinuous for disadvantaged students.

Maynard and Hansen (1970), in a similar study, inventoried the vocational maturity of poor urban black and white youths in both segregated and integrated schools. They then compared their vocational maturity scores to those of a white suburban group. The Vocational Development Inventory (VDI) was administered to 180 white and 180 Black inner-city boys and 90 white suburban boys. Selected randomly, the subjects were divided into five groups: Black, segregated; White, segregated; Black, integrated; White integrated; and White, suburban.

Maynard and Hansen (1970) reported that suburban boys were highest in vocational maturity, followed by the two white inner-city groups, and then by the two Black inner-city groups. Large differences on the means were found between the inner-city groups and the suburban group. They further submitted that the VDI, like other currently used standardized instruments are culture bound, that is, they expect the students to understand and emulate a value structure foreign to them. In conclusion they state:

It may mean that further research with this and other instruments must take into account a variety of intellectual and social variables when working with inner-city samples. Disadvantaged students may have different patterns of vocational development. (p. 404)

Nonintellective personality variables have also been related to the Attitude Scale. Bartlett (1968) asserted that personality

variables such as goal-orientation, independence, and realism which reflect maturity would also be related to vocational maturity. Bartlett used the Vocational Development Inventory (VDI) to measure vocational maturity and the Adjective Check List (ACL) to measure personality variables, of Manpower Development Training Act trainees. His population was 69 males and 81 females, ages 16 to 21, with high, middle and low VM scores on the various ACL scales. He reported a positive relationship between the maturity of vocational attitudes and personality variables of self-confidence, achievement, dominance, and autonomy. He concluded that subjects scoring high on the Attitude Scale are ". . . more assertive, persistent, goal oriented, forceful, and independent" (Bartlett, 1968, p. 107). These results suggest that the development of vocational behavior is analogous to the development of mature personality characteristics and are consistent with the findings of previous studies (Bartlett, p. 107).

Smith and Herr (1964) explored the sex and grade level differences in attitudes of vocational maturity. Through the use of the Attitude Scale, a vocational attitude maturity score was obtained for 2,020 eighth-grade and tenth-grade boys and girls in Pennsylvania.

The researchers reported that girls scored higher in vocational attitude maturity than boys in the same grade. Based on the analysis of the data, females possessed more maturity in terms of their attitudes towards work and career planning than did males in the eighth and tenth grades (p. 182).

Similar findings were reported by Osipow and Alderfer (1968) as they chose to test the effectiveness of a speech course oriented toward

assignment concerning career development and decisions.

Hypothesizing the experiment to facilitate career maturity, the Vocational Development Inventory (VDI) was utilized to measure pre-test and post-test scores. This study involved 407 tenth-grade, eleventh-grade and twelfth-grade students from Pennsylvania.

The findings reported girls scoring higher than the boys on the VDI both before and after the experiment. Girls also expressed more certainty about their educational plans at the conclusion of the course than at its onset (p. 247). This is not consistent with previous testing with the Career Development Inventory. No sex difference in VM score was observed by Crites (1969, p. 79) in his development of the Career Maturity Inventory (CMI).

Crites noted the results of both positive and negative findings in the applied research on maturity of vocational attitudes. He identified methodological and statistical "flaws" in the studies (i.e. ineffectiveness of the treatment, control of extraneous variables, inappropriate analysis) and recommended replication to improve the experimental design (1969, p. 69).

A large scale study of guidance programs in Minnesota by Tamminen and Miller (1968) exemplified the use of the Attitude Scale in the evaluation of the effectiveness of career counseling. The subjects were 1,116 male and female high school seniors. The researchers performed a multiple regression analysis of the relationship between career maturity and certain guidance input and situational factors, as predictors. They obtained an R of .60 between the Attitude Scale and the following criterion variables: adequacy of guidance facilities,

number of years of guidance in school, high school press for estheticism-humanism, student press for intellectualism-competition, size of town, and scholastic aptitude.

In applied research, Gilliland (1966) pre and post-tested experimental (7 males, 7 females) and control (8 males, 8 females) groups of tenth through twelfth-grade Black high school students of Oak Ridge, Tennessee. The treatment consisted of 36 one hour weekly group counseling sessions, in which the students discussed their feelings about school and work. A gains analysis indicated a significantly greater vocational maturity, as measured by the Attitude Scale, for the experimental group following the counseling sessions. The results were the same for males and females.

Goodson (1969) found substantiation for the general hypothesis that exposure to appropriate occupational and psychological information would enhance the maturity of vocational attitudes. Utilizing a pre and post-test design, Goodson tested first semester freshman at Brigham Young University, who registered for a seven week orientation program. Three experimental groups (N = 52 each) and one control group (N = 72) were tested with the Attitude Scale. He established significant differences between the control and experimental groups who (1) met in a large group and received occupational and educational information; (2) met in a large group but information was supplemented with self-analysis of test scores; and, (3) met in small groups (7 each) and engaged in self-analysis, with informal presentation of information.

Flake, Roach and Stenning (1975) recently revealed that career maturity as measured by the CMI-Att can be influenced by a program designed to strengthen mature responses of students who have evidenced immaturity. Eighty-seven tenth-grade students whose CMI scores fell below the mean were randomly assigned to experimental and control groups. In the experimental group, 17 subjects received special individual and group career counseling for a six-week period. They reported a significant increase on the Attitude Scale mean from pre-test to post-test. The control group mean score was elevated above the experimental group mean score on the pre-test but remained constant through post-testing. They concluded that "counseling directed specifically toward reinforcing dimensions . . . results in more mature responses by subjects in a relatively short time span." (p. 78)

Similarly, Greene (1973) investigated the career maturity and career competencies of 531 selected junior and senior high students following exposure to the concepts of career education. The experimental career education program consisted of five components: teacher inservice, junior and senior high school curricula; guidance and counseling; and placement. Fifty students from each grade level (7-12) were selected from both the experimental and control schools.

Greene concluded that the experimental career education program significantly improved the maturity of career attitudes for both sexes and all six grade levels (pp. 129-130). The impact of the career education program was reported stronger when the instrument expressly designed to assess program effects (the Santa Barbara Occupation Information Survey) was employed.

Summary

The following inferences have been derived from the review of related literature:

- Most career development theorists recognize career decision making as a continuous process through sequenced and patterned stages of development.
- Several studies indicate that the development of career behavior is analogous to the development of mature personality characteristics.
- Studies indicate that career development is related to such contingency factors as age, socioeconomic factors, grade level, intelligence, values and attitudes.
- Developmental theorists have premised their theories on middle-class phenomena and have linked cultural determinants to the process of career maturity.
- Studies suggest that career development may be discontinuous for economically disadvantaged students.
- Although progress has been made in the measurement of career maturity, further research is needed in order to establish the empirical foundation of career maturity.
- Studies indicate that students' career maturity as measured by the Career Maturity Inventory will increase following exposure to career oriented classes or counseling.

Implications from the research on career development have not been effectively translated into curriculum programs. Education has been criticized as being irrelevant and even dysfunctional (Parnell, 1972). Students are required to make choices before they are prepared to make valid decisions regarding selection of curriculum and/or occupation. Consequently, despite a general agreement that schools have a responsibility for preparing the student to enter the world of work, there is a consensus affirming the shortcomings in the educational system's performance of this responsibility.

As one of the first states to implement the developmental concept of career education, Oregon's approach calls for changes affecting the total educational program. The "Oregon Way" ties the curriculum "to the goals of students in such a way that they are motivated while in school and also better equipped to choose among many alternatives as they take next steps, whether it be on-the-job training, apprenticeship, community college, proprietary schools or a four-year college" (Parnell, 1972, p. 57).

The effect of an Oregon exemplary career education project and the consequent facilitation of student career maturity remains an issue.

III. RESEARCH METHOD AND DESIGN

The Population

This study involved a student population from seven school districts in Oregon, namely, Mt. Vernon, Long Creek, Prairie City, Dayville, Monument, John Day, and Springfield.

The experimental group consisted of students enrolled in the Springfield School District. Only moments off the interstate highway, Springfield is a quiet, suburban city in the Willamette Valley, bordered on the west by the metropolitan city of Eugene and the low Coast Range and on the east by the forested foothills of the Cascades.

The lumbering industry employs the majority of the Springfield labor force. Three large manufacturing plants contribute to the image of a "lunch bucket community." Census figures for 1970 show a median income level of \$8,475 with 7.4 percent of the population at less than poverty level. The 11.1 percent unemployment level was due to the sharp sag in housing construction during that year.

The control group for this study consisted of students enrolled in six separate school districts in Grant County, Oregon: Mt. Vernon, Long Creek, Prairie City, Dayville, Monument, and John Day. Located in east-central Oregon, the county is partially framed by the Strawberry Mountains. The area is best described by its bleak, rocky abutments of canyon walls, soft green valleys and colorful hills rising above the sagebrush and juniper of the landscape. Isolated and sparsely populated, the communities which surround each school remind one of the cattle towns and old gold rush villages of Western movie sets.

Primarily dependent upon agriculture and forestry for their existence, the median income for the residents of Grant County is \$7,876 with 10.1 percent of their population at less than poverty level.

Additional socioeconomic characteristics as reported by the 1970 census are displayed in Table 1.

Table 1. Population and Socioeconomic Data of Grant County and Springfield, Oregon, 1970.

Characteristics	Springfield	Grant County
Population	27,105	7,092
Median Income	\$8,475	\$7,876
Less Than Poverty Level	7.4%	10.1%
Civilian Labor Unemployed	11.1%	12.3%
Employment in Manufacturing/ Industries	32.0%	17.3%
Employment in White Collar Occupations	36.9%	39.2%
Employed as Government Workers	13.6%	26.5%

A further understanding of the financial constraints faced by the Grant County school districts is noted in a recent survey of school districts by the Oregon School Boards' Association. The starting base pay for a teacher in the Springfield School District is \$8,974 with the average teaching salary being \$12,779.

In comparison, the Mt. Vernon School District, a "typical" Grant County school district, paid a beginning base salary of \$8,050 with the average teaching salary being \$8,274. This starting base pay was \$361 less than the average starting base salary for Oregon districts of comparable size.

Comparison figures are shown in Table 2.

Table 2. Salary and Average District Cost Per Teacher For Springfield and Mt. Vernon School Districts.

COST	MT. VERNON SCHOOL DISTRICT	SPRINGFIELD SCHOOL DISTRICT
Base Teaching Salary	\$ 8,050.00	\$ 8,974.00
Average Teaching Salary	\$ 8,274.00	\$12,779.00
1974-1975 Average District Cost per Teacher	\$10,014.00	\$14,638.00

Although Grant County is a member of a consortium of six eastern Oregon counties working toward staff, materials, and program development in career education, only limited progress has been made. The evaluation report of the Third Party Evaluator states "the procession of career education . . . is still in the embryo stages of growth" (Courtney, p. 20). The report identifies problem areas of meager or no guidance and counseling services; limited school work experience opportunities within the small rural communities; long distances from educational resources; and a frequent turnover of teachers with no or little experience in career education. Because of seasonal unemployment

and underemployment associated with the rural area, many students face socioeconomic constraints.

Hampered by the geographic and economic problems of the Grant County area, building facilities are inadequate to house vocational and career activities. Four of the six school districts claim average daily membership of less than 250 students. In these districts, grades one through 12 are housed in a single building with frequent grade level combinations. The largest community of John Day (population, 1,556) claims average daily membership of slightly more than 500. Curriculum clusters, however, remain outside the scope of local budgets across the county.

In contrast, the approximately one thousand students of the Springfield School District attend fourteen elementary schools, four junior high schools and two senior high schools. Curriculum cluster programs at the high schools reach approximately 43 percent of the student enrollment. The selection of a career cluster (family of occupations) upon which the student will concentrate for two or three hours per day offers the student the necessary background for selection of an occupation following graduation. In addition to the cluster programs, all teachers relate academic skills with each student's career interest as they explore each of the four life roles: career, avocation, family life and citizenship.

It is this departure from the traditional curriculum, found within the Grant County Schools, coupled with an intensive career counseling and guidance program, which served as the independent variable for this study.

The Treatment

Funded under Part D of the Vocational Education Act of 1968, the Springfield School District Exemplary Career Education Project was initiated in July, 1973. This project provided the stimulus for a comprehensive career education program. It is presently completing its third and final year of funding under the Act.

The developing program has a basic purpose to promote growth in the career maturity of its students. The need has been declared to provide every young person with educational opportunities that will enable them to develop to their full potential. Thus, career-oriented experiences throughout the elementary and junior high school years assist the senior high student to identify a choice of programs leading to a realistic career decision.

Although the Exemplary Project is divided into component areas of District, Awareness, Exploratory, Preparation, and Placement, this study investigated only the Preparation Component. Population for the study consisted only of graduating senior students. The impact of the Preparation Component of the Exemplary Career Education Project to this population of the experimental schools is measured by the growth in decision-making skills of career maturity.

In summary, the students in the experimental schools were exposed to intensive career guidance and enrolled in classes in which teachers modified their presentation of subject matter to include career-relevant information. The students in the control schools were not exposed to intensive career guidance or enrolled in classes with career-relevant emphasis.

The following is a review of the curriculum and guidance elements of the Preparation Component as currently being practiced in the experimental schools.

Emphasizing articulation and occupational cluster activities, a major focus of the Preparation Component of the career education project is placed on Guidance and Counseling. This component is organized around a number of services and activities. The objectives for career education established at the Springfield high schools are:

1. Provide for observation of career preparation programs.
2. Select building coordinators from each of the two high schools.
3. Develop leadership structure from each building.
4. Develop and implement long-range plans.
5. Obtain student evaluation through follow-up of all school leavers.
6. Submit a written plan for demonstrating group guidance materials or techniques.
7. Counselors serving as resource people to staff in the area of decision-making process.
8. Maintain a file of pertinent information related to careers guidance.
9. Counselors demonstrate ability to interpret test results for all standardized tests at various grade levels.
10. Counselors coordinate development of an educational and career planning program for staff to work with students.
11. Develop a program of student-staff interaction and guidance processes. (See Appendix A for Advisor-Advisee program.)
12. Implement a program of instruction on decision-making. (See Appendix A.)

13. Submit a staff-developed plan of standardized testing and test interpretation to students and parents.
14. Formulate a guidance team to plan and implement guidance procedures.
15. Develop a cadre of personnel in each school to receive training to demonstrate classroom guidance techniques and materials.
16. Identify disadvantaged students.
17. Identify workshops, services, and materials needed to bring Career Education programs to a model status as designed by the State Department of Education.

The preceding rationale and objectives incorporate a view of the curriculum designed to help the student achieve increasing power to make relevant decisions about his life career.

The Research Instrument

The instrument selected for this study was the Attitude Scale of the Career Maturity Inventory (CMI-Att), which was formerly entitled the Vocational Development Inventory (VDI). It is an inventory which measures a student's career maturity of decision-making attitudes.

Description

The Attitude Scale is composed of self-descriptive statements about an individual's career attitudes and behaviors. It elicits the dispositional response tendencies in career maturity which are nonintellective in nature, but which may mediate both choice behaviors and choice aptitudes (Crites, 1973, p. 3). These conative aspects of decision-making are surveyed in the fifty statement inventory. The Attitude Scale surveys (a) involvement in the career choice process,

(b) orientation toward work, (c) independence in decision making, (d) preference for career choice factors, and (e) conceptions of the career choice process. Table 3 more specifically identifies the variables in the Attitude Scale of the CMI (Crites, 1973, p. 12).

The scoring key for the Attitude Scale is based on the average response of twelfth graders. The total raw score defines the degree of career development, or the similarity of the individual's career behavior to that of the most advanced group in his life stage. Percentile norms for each grade level define rate of career development, or the maturity of an individual's behavior relative to that of his peers (Crites, 1968, p. 22-24).

Standardization

The CMI Attitude Scale was standardized during the 1961-62 academic year in five elementary schools, two junior high schools, and two senior high schools in the Cedar Rapids, Iowa, school system. The samples, stratified by age and grade, totalled 2,822, grades five through 12. Crites reported that Cedar Rapids, with a population of approximately 92,000 in the 1960 census, was chosen as the baseline community for standardizing the instrument because of its fairly diversified economy and representative school structure. The schools serve children from all socioeconomic levels and the area is served by both large and small commercial and industrial concerns.

Norms

The CMI Attitude Scale was standardized both cross-sectionally and longitudinally on large samples, approximately 10,000 students in

Table 3. Variables in the Attitude Scale of the Career Maturity Inventory

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

all. It was not normed on a national sample since the most appropriate reference group for an individual is the one he or she resembles demographically and educationally. Percentile norms are available for grades five through 12, college freshman to college seniors, vocational-technical schools, disadvantaged groups, American Indians, Mexican-Americans, Negroes, and others (Crites, 1971).

Applicability

Students taking the CMI Attitude Scale should be able to read at approximately the sixth grade reading level, unless the items are going to be presented orally (Crites, 1973). Analyses by Crites of the reading difficulty of the Attitude Scale, using the Dale-Chall Index, have yielded a readability value of 5.17. (Dale, 1948).

Administration and Scoring

Readily completed in a very short time--usually from 15 to 20 minutes--the Attitude Scale can be administered either individually or in groups. Scored either by hand or by machine, the "key was empirically derived from differences between the majority response (51 percent) of twelfth graders in the standardization sample and lower grades." (Crites, 1971).

Design of the Study

The study was designed to determine if significant differences occurred when students were exposed to an experimental treatment (comprehensive career education project) when compared with students who had not received the treatment. The investigation utilized a fixed

statistical model. Management of the statistical procedures were accomplished through the use of a one-way analysis of covariance technique.

The following design procedure was used:

1. The respondents (N = 373) for the experimental group consisted of senior students at two high schools within the Springfield School District, Springfield, Oregon.
2. The respondents (N = 87) for the control group consisted of senior students at six high schools within Grant County, Oregon.
3. The two groups were pre-tested on the Career Maturity Inventory, Attitude Scale (CMI-Att) and the mean pre-test score was established for both the experimental and the control group. The CMI-Att pre-test score was utilized as the covariant in the analysis. Mean pre-test scores were established for each school.
4. The experimental group was exposed to the independent variable (Exemplary Career Education Project). The control group was exposed to the traditional educational program.
5. The treatment extended over a period of one academic year. Following the two treatments (control and experimental), the two groups were given the CMI-Att (the dependent variable) post-test. The mean post-test scores for both groups were computed. Mean post-test scores were established for each school.
6. An analysis of covariance was computed to determine if significant differences existed between control and experimental group mean scores in terms of the effect of the treatment. Pre-test scores were used as the covariant. Hence, the analysis of variance technique to generate F tests accommodated the following hypothesis:
 H_1 : There was no significant group effect.

The critical F ratio, utilized for the purposes of rejection, was the tabulated F where degrees of freedom approximate 1,652 and alpha = .05.

Where the group effect hypothesis was rejected, a Least Significant Difference (L.S.D.) test was utilized to ascertain where differences occurred. A priori hypotheses for the multiple comparisons analysis were as follows:

$$\mu_{03} = \mu_{04}$$

$$\mu_{03} = \mu_{21}$$

$$\mu_{04} = \mu_{21}$$

$$\mu_{05} = \mu_{03}$$

$$\mu_{05} = \mu_{04}$$

$$\mu_{03} = \mu_{19}$$

$$\mu_{03} = \mu_{18}$$

Where: μ_{03} = Springfield; μ_{04} = Thurston High School; μ_{05} = Grant County High Schools; μ_{18} = Prairie City High School; μ_{19} = Dayville High School; μ_{21} = John Day High School.

Summary

This chapter presented the research method and design undertaken in the study. Four hundred and sixty students of the experimental and control group populations were given pre and post-tests using Crites', Career Maturity Inventory, Attitude Scale.

The post-tests were administered following one academic year of treatment. The treatment for the experimental population was an exemplary career education project.

A one-way analysis of covariance was applied to the data to determine if significant differences occurred between pre and post-test

scores of the Attitude Scale. Following the rejection of the group effect hypothesis, the Least Significant Difference (L.S.D.) test was utilized to ascertain where differences occurred. It must be assumed that any projections to be derived from the findings described in Chapter 4 be limited to analagous populations operating in similar school environments.

IV. PRESENTATION AND ANALYSIS OF DATA

This chapter presents the results of the statistical analysis for the testing of the hypothesis. The results of this study have been analyzed and assembled in accordance with the stated null hypothesis and the a priori hypotheses as identified in Chapter III.

The major hypothesis stated in the null form was as follows: there is no significant difference in career maturity mean scores between students exposed to a comprehensive career education project as compared to those taught within a traditional teacher oriented instructional environment.

Consequently, the results of the analysis of the data must indicate that a population difference exists at the stated level of significance in order to reject the null hypothesis. If the results do not indicate that a population mean difference exists (except for random variation), the null hypothesis cannot be rejected.

The 0.05 level of probability was selected in this study as the level for rejection of the null hypothesis. A one-way analysis of covariance, using the F statistic, was used to determine whether significant differences existed among means. It was ascertained that for one degree of freedom in the numerator and 400 degrees of freedom in the denominator, an F-ratio of 3.86 or greater is significant at the 0.05 level. The hypothesis was tested with a population sample of 460 senior students during the 1975-76 school year.

A subsidiary statistical test was made to determine individual mean comparisons in order to separate out those individual means which

were significantly different from those which were not different. The Least Significant Difference (L.S.D.) test was used for the assessment of difference among population means (see Appendix C). A priori hypotheses for the multiple comparisons analysis were as follows:

$$\mu_{03} = \mu_{04}$$

$$\mu_{03} = \mu_{21}$$

$$\mu_{04} = \mu_{21}$$

$$\mu_{05} = \mu_{03}$$

$$\mu_{05} = \mu_{04}$$

$$\mu_{03} = \mu_{19}$$

$$\mu_{03} = \mu_{18}$$

The critical L.S.D. value was computed (see Appendix C) and determined to be 2.067. Therefore, it was necessary for the difference between the means to be less than 2.067 in order for the hypothesis to be retained. A difference equal to or greater than 2.067 was considered to be significant at the 0.05 level.

Finding Related to Major Hypothesis

The pre-test/post-test experimental research design utilized in this study identified no significant difference by the assessment of the control group (Grant County Schools) in comparison to the experimental treatment group (Springfield Public Schools). Any difference which occurred in the experimental treatment group, considering the study's assumptions, was considered to be attributed to the exemplary career education project experiences.

To determine the degree of similarity between experimental and control groups prior to the introduction of the experimental treatment, an analysis of pre-test scores was undertaken. The major interest was to determine a possible difference in the two groups, overall.

Table 4. Pre-test Means on the CMI-Att Scale.

Group	Observations	Mean	F
Experimental	373	36.410	3.958*
Control	87	37.575	

*Significant ($p < .05$)

As shown by this table, the control group obtained a significantly higher pre-test mean than did the experimental group. The 0.05 level of probability used in this analysis rejected the hypothesis that there were no significant differences between the experimental and control groups. Thus, the CMI-Att instrument indicated a significantly lower rating of career maturity prior to commencement of treatment for the experimental group. Hence, the analysis procedure for the study using covariance, with the pre-test score as the covariant, was considered to be an appropriate matching tool.

In the development of the analysis of covariance, the usual procedure was followed in determining sum of squares and mean squares. For this study, the pre-test score was considered as the covariant (independent) factor and the post-test score was the dependent variable.

The analysis of covariance results are shown in Table 5. The statistical data indicated there are no significant differences between the means tested. Therefore, the null hypothesis was retained because the computed F value (1.201) was less than the tabular F value (3.86).

Table 5. One-Way Analysis of Covariance Results.

Source of Variation	df	Sum of Squares	Mean Square	F
"Between" Groups	1	25.03	25.03	1.201 _{ns*}
"Within" Groups	400	9526.58	20.85	
Total	401	9551.61		

*ns = not significant ($p < .05$)

Because the hypothesis was retained, it was concluded that there were no significant differences existing among the mean scores of the experimental and control groups. Table 6 reflects the means for the groups.

Table 6. Mean Scores with Adjusted Post-Test Scores.

Group	Observations	Mean X*	Mean Y**	Adjusted Mean Y
Experimental	373	36.410	37.426	37.572
Control	87	37.575	37.598	36.974

* X Factor is pre-test

** Y Factor is post-test

Neither group experienced significant mean gains or losses. Thus, it was concluded that the experimental treatment (a comprehensive career education project) did not cause significant differences to occur among groups.

A comparison between post-test scores of the individual schools is illustrated in Table 7. The CMI-Att was not normed on a national sample since the most appropriate reference group for an individual is the one he most resembles demographically and educationally. Although the primary consideration in using norms for this instrument is to determine an individual's rate of career development in comparison to grademates, nevertheless, it is of interest to note the order of differences. Post-test means are not adjusted in Table 7.

Table 7. Experimental and Control Groups Post-test Mean Scores for CMI-Att.

School	Number of Respondents	Mean Scores	Range
Monument	8	40.50	36-47
Dayville	7	40.14	33-45
Mt. Vernon	6	38.83	27-43
Long Creek	6	37.67	22-47
Springfield*	190	37.66	15-47
Thurston*	183	37.19	22-48
John Day	35	37.03	23-45
Prairie City	25	36.44	31-46

*Experimental schools

A one-way analysis of covariance was used to determine if mean differences were present for the post-test scores of each school within the study and shown in Table 7. The results of this analysis indicate a significant difference between the means at the 0.05 probability level.

Table 8. One-Way Analysis of Covariance Results.

Source of Variation	df	Sum of Squares	Mean Square	F
"Between" Groups	7	356.57	50.94	2.498 _{s*}
"Within" Groups	400	9195.03	20.39	
Total	407	9551.60		

s Significant ($p < .05$)

* Not significant ($p < .01$)

Since the computed F value (2.498) is greater than the tabular F value (2.03) the hypothesis was rejected. The computed F value (2.498) was not significant at the 0.01 level of probability.

Thus far, the statistical analysis has identified that no significant differences existed between the means of the experimental and control treatments when programs were combined into Grant County and Springfield groups; however, a significant difference was found between the mean scores of the individual schools. The Least Significant Difference (L.S.D.) Test was used to assess differences between population means.

Statistical results of the Least Significant Difference Test, comparing means on the post-test, are shown in Table 9. The computed L.S.D. value is 2.067. Therefore, when the computed L.S.D. value of 2.067 is compared with the subtracted differences, the difference must be less in order for the hypothesis to be retained. A difference greater than 2.067 was considered to be significant at the 0.05 level.

The results of the test indicated that for one of the seven a priori hypotheses ($\mu_{03} = \mu_{21}$) the decision was significantly different. In the analysis of the remaining hypotheses, no differences are significant.

A copy of the Career Maturity Inventory, Attitude Scale can be found in Appendix B. The frequency tabulation of scores can be found in Appendix D. Pre and post-test scores of the experimental and control groups are noted by individual schools.

Summary of Data

The statistical data, as assessed with a one-way analysis of covariance using the F-test, indicated that the following null hypothesis was retained.

There is no significant difference in career maturity mean scores between students exposed to a comprehensive career education project as compared to those taught within a traditional teacher oriented instructional environment.

This null hypothesis was retained at the 0.05 level of probability.

Table 9. Least Significant Difference Test Analysis.

Hypothesis	Mean	Adjusted Mean Score	Difference	Decision
$\mu_{03} = \mu_{04}$	$\bar{X}_{03} = 38.408$	38.408	1.693	retain
	$\bar{X}_{04} = 36.715$			
$\mu_{03} = \mu_{21}$	$\bar{X}_{03} = 38.408$	36.069	2.339*	reject
	$\bar{X}_{21} = 36.069$			
$\mu_{04} = \mu_{21}$	$\bar{X}_{04} = 36.715$	36.069	0.646	retain
	$\bar{X}_{21} = 36.069$			
$\mu_{05} = \mu_{03}$	$\bar{X}_{05} = 36.974$	38.408	1.434	retain
	$\bar{X}_{03} = 38.408$			
$\mu_{05} = \mu_{04}$	$\bar{X}_{05} = 36.974$	36.715	0.259	retain
	$\bar{X}_{04} = 36.715$			
$\mu_{03} = \mu_{19}$	$\bar{X}_{03} = 38.408$	38.811	0.403	retain
	$\bar{X}_{19} = 38.811$			
$\mu_{03} = \mu_{18}$	$\bar{X}_{03} = 38.408$	37.285	1.123	retain
	$\bar{X}_{18} = 37.285$			

Critical L.S.D. value: 2.067

*Significant at .05 level

Where: μ_{03} = Springfield; μ_{04} = Thurston High School; μ_{05} = Grant County High Schools; μ_{18} = Prairie City High School; μ_{19} = Dayville High School; and μ_{21} = John Day High School.

A further investigation utilizing a one-way analysis of covariance indicated a significant difference between means of post-test scores of each school within the study. The difference was noted at the 0.05 level of probability but was not significant at the 0.01 level.

A Least Significant Difference (L.S.D.) Test identified a significant mean difference in one experimental school in comparison to one of the six (6) control schools. The hypothesis was rejected at the 0.05 level of probability. The subsidiary test (L.S.D.) identified retention of six additional a priori hypotheses indicating there was no significant differences between the means tested.

Further comparisons, as well as conclusions and implications drawn from the study, are presented in Chapter V.

V. SUMMARY, CONCLUSIONS, AND DISCUSSION

Summary

The primary purpose of this study was to determine whether significant differences occurred in students' career maturity as a result of exposure to a comprehensive career education project.

The study's samples included an experimental group of senior students in two high schools and a control group of senior students in six high schools.

The experimental treatment (an Exemplary Career Education Project) was conducted over a period of one academic year. The career education cluster curriculum was designed to help each student achieve increased power to make relevant decisions about his/her life, enhance the student's potential employability, and enable him/her to move over several occupational categories as well as vertically within the chosen occupation. Intensive career guidance was provided to promote increased competency in career decision-making skills and to foster the fullest realization of career education.

The interface between the concept of career development and the goals of career education is an obvious one. The emphasis and proposed outcomes of career education are identical to the processes postulated in career development theory.

A review of the literature identified career decision making as a continuous process through sequenced and patterned stages of development. A broad review of literature covering the conceptual foundations and

theories and the development of the concept of career maturity provided guidance and insight into the development and progress of this study. The conceptualization of career decision making as a developmental process for implementing career education programs, is encouraged by authors as a way of facilitating the career maturity of adolescents.

The instrument chosen to assess the facilitation of career maturity by the exemplary career education project was the Career Maturity Inventory, Attitude Scale. Both the experimental and control groups of students were pre and post-tested utilizing the inventory which measures a student's career maturity of decision-making attitudes. The control groups of students were not exposed to planned career guidance or a career education cluster curriculum, but rather, were taught within a traditional teacher oriented instructional environment.

The major hypothesis of the study was resolved through the use of a one-way analysis of covariance, using the F statistic. Pre-test scores were used as the covariant. A priori hypotheses for multiple comparisons analysis to assess differences among individual school means were resolved through the use of the Least Significant Difference (L.S.D.) Test.

Conclusions

The present study was designed to assess the potential facilitation of career maturity through exposure to an exemplary career education project. Purposes other than the comparison of a career education

curriculum to a traditional curriculum and the stimulus for growth in career maturity were not explored in this study.

The research concluded that students in the experimental group, who experienced the exemplary career education project, showed no significant difference in career maturity, as measured by the CMI-Att, when contrasted with students in the traditional teacher oriented instructional environment. Although the analysis indicated a significantly lower career maturity mean score for the experimental population on the pre-test, the gain in post-test mean score was not significant. One of the two experimental schools did show a significant difference in mean scores in comparison with one of the six (6) control schools. This gain in post-test score may be attributed, in part, to the exemplary career education project.

Discussion

In summarizing the results of applied research utilizing the CMI-Attitude Scale, Crites (1969, p. v.) states:

"Of the studies which have investigated the effects of counseling upon vocational maturity, three have produced positive findings and four have reported negative results Much the same conclusion can be drawn about the effectiveness of informational and instructional experiences. A college orientation program resulted in marked gains in vocational maturity, but an occupations course and life career game did not."

Why was there no significant difference to the study population following an intensive exposure to the concepts of career education? Questions evoked by this study and its potential implications are almost unlimited. Categorically, they fall into the general areas of

(1) Career Education and the Classroom Teacher, (2) Instrumentation, and (3) the Study Population. The following discussion of implications are presented on the basis of information drawn from this study and from conclusions generated by other writers and researchers.

Career Education and the Classroom Teacher

When an experimental program such as career education is adopted by a school district, the implementation of the program is dependent on the skill and dedication of the classroom teacher. Although every effort was made to provide stimulating staff development programs for the faculty, it is undoubtedly true that there were large differences in the effectiveness with which individual teachers incorporated career education concepts into the educational process. Three years of intensive programs of career education in-service may well have proven weary to the classroom teacher of the experimental group.

Likewise, it was difficult, if not impossible, to prevent the control school teachers from becoming involved in classroom career education activities. As career education is proclaimed nationally, one can only assume that some of the highly facilitative teachers of the control group, incorporated the concepts into their classroom without the formal support and financial backing of the administration. The smaller classes with consequent individualized attention may well be a positive factor for any student living in the sparsely populated communities where the teacher not only knows each student well, but their brothers, sisters, and parents.

Thus, differences on the measures between control and experimental schools could well have been reduced an undetermined degree both by assumed "less than perfect" implementation in the experimental schools and the unintended exposure to career education concepts of the control group classroom teacher.

Instrumentation

Considerable evidence was reported in Chapter II regarding the reliability and validity of the CMI-Attitude Scale. Do the post-test scores of this study support the conclusion by Goodson (1969) that career attitudes can become less mature prior to college entrance? Following three years involvement in a career education curriculum one could also assume that the pre-test scores of the experimental group were actually maximum scores. If so, there would be no room for improvement in the post-test scores--the well-known ceiling effect.

The researcher assumes ideal circumstances surrounding the administration of the test. However, could the control group students have been motivated to appear superior in the eyes of the test administrator? With the lack of counseling staff, building superintendents frequently administered the tests to the small graduating senior class. Likewise, as they sat in their social studies classes, were the experimental group students motivated to fake their answers, guess wildly, or answer at random or in patterned responses? Unusable answer sheets were frequently noted from one of the experimental schools. Thus, test administration biases may account for some of the results.

Also, is it possible that our educational system has conditioned our students to alternating patterned responses in true-false test taking? Could today's student expect nineteen false questions, one true question, followed by fifteen more false questions on any test given by their classroom teacher? Is it possible that the sequence of true and false questions may lead to response patterns which affect the ultimate score? Each of these questions consider the validity and reliability of the dependent variable measure.

Regarding content validity of the CMI-Attitude Scale, Crites (1969) explains the disagreement of a panel of judges as a reflection of their "idiosyncratic concerns and values as counseling psychologists." The content of the items disagreed to manifested "social service values" and ". . . vocational indecisiveness, not an uncommon reason for entering the field of counseling." Samples of items which the judges endorsed as true whereas empirically they are scored as false, include:

- If I can just help others in my work, I'll be happy.
- Choose an occupation which gives you a chance to help others.
- I can't understand how some people can be so set about what they want to do.

With the value changes of the cultural rebellion of the 1960's, the new consciousness has led to pervasive expectations among young people that their life and their work should be meaningful. Meaning, away from the private sector and now more frequently looked to in the public sector--the sector of "people work." This new consciousness and change of values coupled with a change of perception and of one's

own sense of identity were basic to the movement of the "counterculture." The movement has been assimilated into the mainstream of society, perhaps to a much greater degree in the metropolitan areas of the experimental group than in the isolated, rural area of the control group. In lieu of the above item questions, does an instrument normed in 1960-61 still have relevance for today's youth? This aspect should be studied in a future research effort.

Since career education is a relatively new development, few instruments are available for measuring its concepts. Although a recommended instrument for the evaluation of career education programs, the CMI-Attitude Scale was developed primarily as a research instrument for studying vocational development. Albeit related to concepts of career education, it may lack its specific focus.

Study Population

Although random assignment of schools to treatments is crucial to a good design, it was impossible to select control and experimental schools on a purely random basis. As a result, the control schools differed from the experimental schools in several ways. All have implications.

From the pre-test findings, it was concluded that the control schools were not true control schools in the sense that they were similar to the experimental group.

The experimental group allowed early graduation, providing credits were earned. Past studies with the CMI-Att indicate high scores as being "more assertive, persistent, goal oriented, forceful, and

independent" (Bartlett, 1968). Had the early graduates been included on the inventory results, would the experimental mean have been greater?

In turn, studies find a moderately positive correlation with intelligence and the Attitude Scale. For the same reason, studies show that students from disadvantaged groups may be less vocationally mature. Can one then assume that the most severely disadvantaged within the control group had withdrawn prior to their senior year and that the remaining students were college preparatory? Census data included in Chapter III indicate a lower socioeconomic level for the control group than that of the experimental. Do the parents and staff of the control group recognize the need for their youth to obtain job skills which will take them out of their area of high unemployment? By keeping the student's options open--the challenge of open horizons, realistic or not--as in the traditional curriculum; is it not more in keeping with the American Dream?

Conversely, are the concepts of career education used with the experimental group--the sorting out of youth at an early age toward a preordained future on career-oriented tracks--a promotion of the premature typecasting of our youth?

Han (1969) found that regardless of class background, adolescents uniformly had a high level 'wish' or fantasy (occupational, educational and material comfort); however, when awareness of restricted opportunities and ability was introduced, there were class differences in expectations. Does the "Who am I?" we ask in career education replace the challenge of open horizons by counsel to keep sights realistically low?

Federal appropriations for career education have risen from \$9 million in 1971 to \$61 million in 1974 (Hechinger). Perhaps, as some have recognized, we should be talking about education for competence, not just for careers.

The foregoing discussion has been purely speculative. Evidence, however, indicates the need for the constant questioning of our educational direction and further study of career development theory including the intelligence, cultural, and socioeconomic variables in order to empirically verify changes in career behavior. The discussion does relate to the many avenues and topics which are available for further research. It must not be concluded that because there was no measured significant gain in career maturity in this career education program that others will also be likewise. Replications in other settings and comparisons with other career education programs are needed before generalizations can safely be made about the effects of program features and of school district characteristics.

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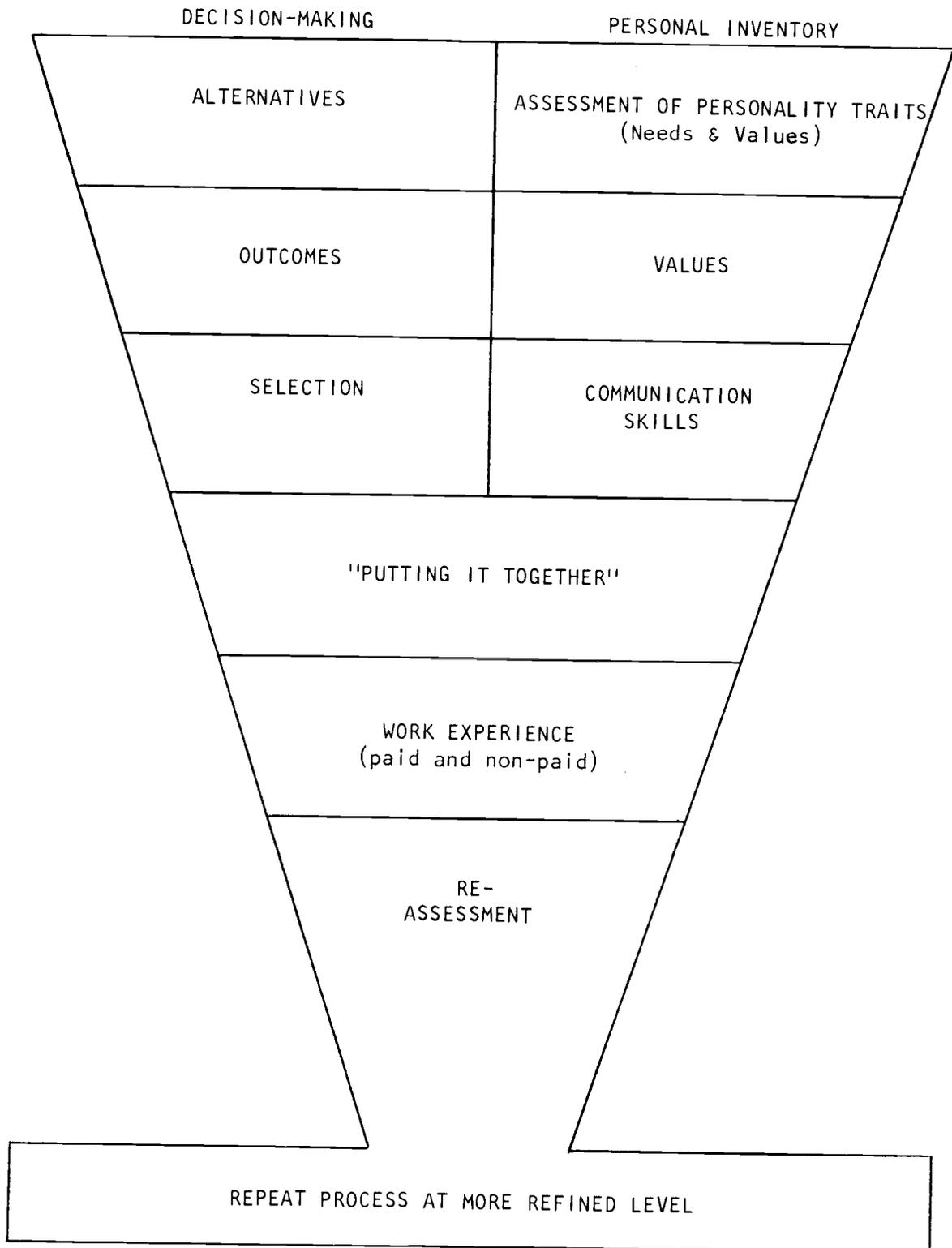
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APPENDICES

APPENDIX A

SPRINGFIELD, OREGON SCHOOL DISTRICT
CAREER DECISION-MAKING MATERIALS

"CAREER DECISION-MAKING MODEL"



GUIDE PROGRAM

Springfield Public Schools
November, 1975

Guide Programs, sometimes called Guide-Guidee or Advisor-Advisee Programs, are operational in the two senior high schools and four junior high schools in the Springfield School District. Programs were operated independently in the six schools with varying degrees of success and with many ongoing changes. They vary in longevity from six-plus years at Thurston Junior High to Springfield Junior High's brand new program. School District administration has had implementation of Guide Groups in all secondary schools as a goal for four years and has encouraged their development at least that long. This program has also been included in the objectives of the federally funded Exemplary Career Education Project now in its third year in Springfield Schools, where it has received funding for staff workshops and inservice intended to foster the Guide Program concept.

The primary purpose of the Guide Program is to insure that each secondary student has at least one staff person who knows him well and takes a personal interest in his development and progress, providing sound guidance while he attends the school.

The following pages show the nature of the Guide Program at this point in time in Springfield's two high schools.

	Springfield Senior High	Thurston Senior High
1) Years including 1975-76 that school has had a Guide Program:	3	3
2) Did school phase into program one grade at a time:	yes	yes
3) Grades now involved in Guide Program:	10, 11, 12	10 & some 11th
4) Number of staff members having Guidees assigned to them:	all	all
5) Which have Guidees assigned to them:		
Administrators	all (4)	all except asst. principal
Counselors	all (5)	all (5)
Non-certificated personnel	0	0
6) Counselors responsible for assisting other staff as Guides:	yes	yes
7) Guide groups assigned made up of:		
a) one grade only		X
b) multiple grades	X	
8) Students assigned to Guide Teachers by:		
a) student choice		
b) random selection	X	X
c) other		
9) Guide Teachers meet with Guidees as a group:		
a) on a regular basis	3/semester	5/yr for 45 min.
b) when need arises		X
10) Contact person	Mr. O'Neal, Principal Mr. Semon, Counselor	Mr. DeVos, Principal Mr. Stewart, Counselor

Responsibilities of Guide Teachers

	Springfield	Thurston
A. Meeting with total group.	x	x
B. Meeting individually with students.	x	x
C. Assisting students with academic planning	x	x
D. Approving student schedules . . .	x	
E. Assisting students to identify a tentative career choice.	x	x
F. Interpreting standardized test results to students.		x
G. Attendance of guidees		x
H. Contacting parents.	x	x
I. Home visits	x	x
J. Monitoring graduation requirements.	x	x
K. Discipline of guidees		
L. Approving of schedule changes . .	x	x
M. Assisting with schedule changes	x	
N. Talk to students about low or failing grades.	x	x

APPENDIX B

CAREER MATURITY INVENTORY

ATTITUDE SCALE

CAREER MATURITY INVENTORY

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

Read the statements and mark your answers in the section marked ATTITUDE SCALE on the separate Answer Sheet. If you agree or mostly agree with the statement, use your pencil to blacken the space marked with a T. If you disagree or mostly disagree with the statement, blacken the space marked with an F. Be sure that your marks are heavy and black and that they completely fill the spaces. Erase completely any answer you wish to change. Do not make any stray pencil marks on the Answer Sheet.

1. Once you choose a job, you can't choose another one.
2. In order to choose a job, you need to know what kind of person you are.
3. I plan to follow the line of work my parents suggest.
4. I guess everybody has to go to work sooner or later, but I don't look forward to it.
5. A person can do any kind of work he wants as long as he tries hard.
6. I'm not going to worry about choosing an occupation until I'm out of school.
7. Your job is important because it determines how much you can earn.
8. Work is worthwhile mainly because it lets you buy the things you want.
9. The greatest appeal of a job to me is the opportunity it provides for getting ahead.
10. I often daydream about what I want to be, but I really haven't chosen a line of work yet.
11. Knowing what you are good at is more important than knowing what you like in choosing an occupation.
12. Your parents probably know better than anybody else which occupations you should enter.

13. If I can just help others in my work, I'll be happy.
14. Work is dull and unpleasant.
15. Everyone seems to tell me something different; as a result I don't know which kind of work to choose.
16. I don't know how to go about getting into the kind of work I want to do.
17. There is no point deciding on a job when the future is so uncertain.
18. I spend a lot of time wishing I could do work I know I can never do.
19. I don't know what courses I should take in school.
20. It's probably just as easy to be successful in one occupation as it is in another.
21. By the time you are 15, you should have your mind pretty well made up about the occupation you intend to enter.
22. There are so many things to consider in choosing an occupation, it is hard to make a decision.
23. I seldom think about the job I want to enter.
24. It doesn't matter which job you choose as long as it pays well.
25. You can't go very far wrong by following your parents' advice about which job to choose.
26. Working is much like going to school.
27. I am having difficulty in preparing myself for the work I want to do.
28. I know very little about the requirements of jobs.
29. The job I choose has to give me plenty of freedom to do what I want.
30. The best thing to do is to try out several jobs, and then choose the one you like best.
31. There is only one occupation for each person.
32. Whether you are interested in a particular kind of work is not as important as whether you can do it.

33. I can't understand how some people can be so certain about what they want to do.
34. As long as I can remember, I've known what kind of work I want to do.
35. I want to really accomplish something in my work--to make a great discovery or earn a lot of money or help a great number of people.
36. You get into an occupation mostly by chance.
37. It's who you know, not what you know, that's important in a job.
38. When it comes to choosing a job, I'll make up my own mind.
39. You should choose an occupation which gives you a chance to help others.
40. When I am trying to study, I often find myself daydreaming about what it will be like when I start working.
41. I have little or no idea of what working will be like.
42. You should choose an occupation, then plan how to enter it.
43. I really can't find any work that has much appeal to me.
44. You should choose a job in which you can someday become famous.
45. If you have some doubts about what you want to do, ask your parents or friends for advice and suggestions.
46. You should choose a job which allows you to do what you believe in.
47. The most important part of work is the pleasure which comes from doing it.
48. I keep changing my occupational choice.
49. As far as choosing an occupation is concerned, something will come along sooner or later.
50. I am not going to worry about choosing a job since you don't have anything to say about it anyway.

* * * * *

ANSWER KEY

All responses false with the exception of questions:

2, 22, 38, 42, 45, 46, 47.

APPENDIX C
COMPUTATION OF LEAST SIGNIFICANT
DIFFERENCE VALUES

Least Significant Difference Test

The unequal cell formula for L.S.D. is:

$$\text{L.S.D.} = t_{\alpha/2} \sqrt{(1/n_1 + 1/n_2 + 1/n_3) s^2}$$

$$\text{L.S.D.} = 1.96 \sqrt{(1/183 + 1/224 + 1/84) 50.939}$$

$$\text{L.S.D.} = 1.96 \sqrt{(0.0218333) (50.939)}$$

$$\text{L.S.D.} = 1.96 \sqrt{1.1121664}$$

$$\text{L.S.D.} = 1.96 (1.054593)$$

$$\text{L.S.D.} = 2.067$$

Where $t_{\alpha/2} = 1.96$

With $df = 400$

APPENDIX D

CMI-ATTITUDE SCALE FREQUENCY TALLIES
FOR SPRINGFIELD SCHOOL DISTRICT

FREQUENCY TALLIES FOR CMI-Att,
GRADE 12, EXPERIMENTAL GROUP, 1975-76

VALUE	SPRINGFIELD		THURSTON	
	Pre-Test	Post-Test	Pre-Test	Post-Test
15	1	1	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	1	1	-	-
21	-	-	-	-
22	2	2	1	1
23	-	1	-	-
24	1	2	1	1
25	2	1	1	1
26	1	-	1	4
27	-	3	1	5
28	5	3	4	2
29	6	1	4	2
30	7	4	2	5
31	10	6	9	7
32	11	7	4	3
33	11	9	7	6
34	15	8	8	9
35	13	7	11	12
36	14	9	19	15
37	27	12	21	11
38	15	13	9	21
39	11	18	14	10
40	8	15	17	20
41	7	15	11	12
42	7	21	11	9
43	9	12	12	14
44	3	3	12	5
45	2	7	2	3
46	-	5	1	4
47	1	4	-	-
48	-	-	-	1
TOTALS	190	190	183	183
Range	15-47	15-47	22-46	22-48
Mean	35.537	37.658	37.317	37.186

APPENDIX E

CMI-ATTITUDE SCALE FREQUENCY TALLIES
FOR GRANT COUNTY SCHOOLS

FREQUENCY TALLIES FOR CMI-Att,
GRADE 12, CONTROL GROUP, 1975-76

VALUE	DAYVILLE		MONUMENT		PRAIRIE CITY		LONG CREEK		MT. VERNON		JOHN DAY	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
22	-	-	-	-	-	-	-	1	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	1
24	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	1	-	-	-	-	1
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	1	-	-
28	-	-	-	-	3	-	-	-	-	-	-	-
29	1	-	-	-	1	-	-	-	-	-	1	-
30	-	-	-	-	1	-	-	1	-	-	2	1
31	-	-	-	-	1	1	-	-	-	-	-	-
32	-	-	-	-	1	-	-	-	-	-	1	2
33	-	2	-	-	-	3	-	-	-	-	1	1
34	1	-	-	-	3	5	1	-	1	-	1	-
35	-	-	2	-	1	3	1	-	1	-	2	-
36	-	-	1	1	4	2	-	-	-	-	3	1
37	-	-	-	1	1	3	-	-	-	-	3	5
38	1	-	-	1	2	2	-	-	-	1	5	2
39	-	-	-	-	2	-	-	-	-	-	1	6
40	-	-	-	-	2	4	-	1	-	-	3	3
41	-	1	2	2	2	1	1	1	1	2	2	3
42	3	1	1	2	-	-	-	-	1	-	3	2
43	1	1	-	-	-	-	1	-	1	2	3	2
44	-	1	2	-	-	-	-	-	-	-	1	3
45	-	1	-	-	1	-	-	-	1	-	-	1
46	-	-	-	-	-	1	-	1	-	-	1	-
47	-	-	-	1	-	-	1	1	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	1	-

(continued to next page)

Appendix E. (Continued)

	DAYVILLE		MONUMENT		PRAIRIE CITY		LONG CREEK		MT. VERNON		JOHN DAY	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
TOTALS	7	7	8	8	25	25	6	6	6	6	35	35
Range	29-43	33-45	35-44	36-47	28-45	31-46	25-47	22-47	34-45	27-43	29-48-	23-45
Mean	38.57	40.14	39.75	40.50	35.40	36.44	37.50	37.66	40.00	38.83	38.03	37.03