

THE EFFECTIVENESS OF THE COMPONENTS OF A CAREER  
EXPLORATION PROGRAM FOR COLLEGE FRESHMEN

by

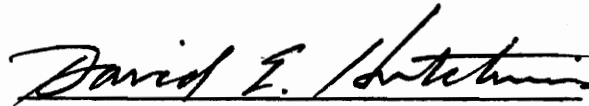
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DOCTOR OF EDUCATION

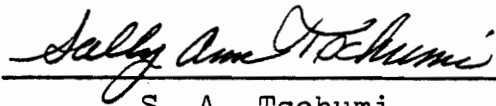
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Career Counseling and Student Personnel

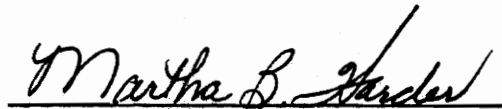
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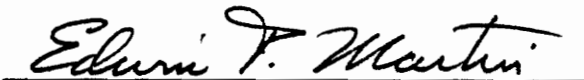
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## Chapter 1

### INTRODUCTION

Many college students who engage in formal educational preparation for careers do not have clearly defined career goals since they lack the experience to determine what careers they like or dislike. Students should possess a knowledge and understanding of personal values, needs, and attitudes as these relate to career interests in order to establish goals and make accurate decisions concerning future careers. Acquisition of knowledge about careers and about self is central to the thesis of this investigation.

In the following introductory paragraphs, consideration is given to evidence demonstrating the need for career exploration opportunities for college students. Among the more important areas included in this overview are: (1) the inadequacy of career information supplied by counselors and other college personnel; (2) alternative sources and methods for obtaining career information; (3) integration of knowledge of self with career information; (4) problems in choosing a college major; and (5) the appropriateness of examining career decidedness in terms of specific stages.

Former United States Commissioner of Education Sidney Marland (1974) held that occupational development, as a responsibility of our schools and colleges, was of equal value with academic development. According to Marland,

For many years now, most noticeably in the post-Sputnik period, educators, parents, industry, and government have been obsessed with the notion that a college education is a young person's only ticket to social worth, economic success, and emotional and intellectual wholeness. Yet I believe that fully fifty percent of these young people now in college have no real goals toward which to aim, and they have little information or professional help for establishing their goals or pursuing them systematically...many students persevere in classrooms, secure for the moment, but ill-equipped to leave (p. 78).

Career education and career counseling programs have been established at many colleges and universities in response to a growing concern over the need for appropriate decisions in regard to career orientation early in the college experience. Students need to acquire adaptability skills that will allow them to change with changes in the occupational society (Hoyt, 1976a). These skills include career decision-making skills, job-seeking skills, job-getting skills, and job-holding skills. Hoyt views "education as preparation for work" as one of the multiple goals of higher education. Institutions must actively seek ways of involving the physical and personnel resources of business, labor, and industry to enhance and expand the substantive content of courses being taught. This would, of necessity, include the use of resource persons from the community to help bridge the gap between the academic community and the world of work.

Most students in traditional institutions of higher education are forced to make career choices without adequate information or experience (Katz, 1975). Occupational choices

are made at a time when the student is still remote from the world of work (Caplow, 1954). According to Madison (1969, 1971), occupational choices are made in the classroom, under the impersonal pressure of the curriculum, and remote from many of the realities of the working situation. More often than not, college curricula contribute little to students' knowledge about how well they like particular careers. Further, he observed that faculty members serve as poor role models for most students. Kroll, Dinklage, Lee, Morley, and Wilson (1970) reported that students seek contact with mature persons who can express to students personal values concerning careers.

Ginzberg (1960) stressed the need for counselors to ensure the availability of career-related information for those individuals who need it. It is doubtful that counselors can acquire enough knowledge of the rapidly changing economy and society to become experts about different facets; however, they can assist and cooperate with those individuals who do have specialized competence and information to offer. Information about occupations and careers should serve to enlarge and enrich the individual's images about the world of work and himself as an integral part of it (Hollis and Hollis, 1969). Experiences must come from either primary experience of first-hand involvement with work, or from secondary experiences such as publications, interviews, audio-visual aids, simulated occupational



environments, and other means. According to Hollis and Hollis, involving an individual with other persons who can supply occupational information will enable the individual to obtain "structured information" according to the perception of those persons. Further, the individual needs assistance in developing the ability to analyze information and its implications. It is desirable, from a counseling standpoint, to help students have a greater variety of experiences and to connect these experiences to realities of the working situation.

In college, career counseling and guidance is generally marginal at best (Sweet, 1977). The individual has a tendency to "lean too much on someone else's advice when he should merely learn to use advice in the process of making his own decisions" (p. x). The individual is the only one who really knows his desires, ambitions, strengths, weaknesses, and motivations, seldom revealing these to others. Career counselors should recognize that all students do not enter college having engaged in adequate career exploration (Myers, 1972). Counselors should concern themselves with each student's level of vocational development and with the amount of exploratory behavior in which they engage. A knowledge of the kinds of student characteristics which indicate a particular degree of vocational maturity should be an important ingredient in career counseling strategies.

Too often, individuals make choices based on "authority" in the form of significant people or scientific information, such as psychometric instruments (Hall and Tarrrier, 1976). Individuals need help in examining occupational choice in terms of psychological needs, work values, beliefs, abilities, and interests felt to be important by them. Hall and Tarrrier recommended a systematic program of assessing personal needs and values as part of the career decision-making process.

As individuals gain in life experiences, they become increasingly aware of their abilities, interests, and values while also learning occupational information through a broadening exposure to the world of work (Gelatt, 1962). Information about the individual's self concept and occupational information begins to integrate early in life through observations of the work patterns of significant others (Super, 1957). During adolescence, information the individual is exposed to increases in relevance, accuracy, and specificity. Failure to make a vocational choice during late adolescence or making an unrealistic choice may be attributable to a lack of information, the usage of inaccurate information, or a developmental skill deficiency.

In his composite theory, Hoppock (1967) emphasized that information about occupations affects occupational choice in helping an individual to discover occupations that may meet personal needs and be personally satisfying. Hoppock added

that information about self also affects occupational choice by helping an individual to recognize needs. Knowledge and acceptance of aptitudes, abilities, needs, limitations, interests, values, feelings, fears, likes, and dislikes are essential components of knowledge of self. According to Hoppock, the choice of an occupation is complete only when one possesses knowledge of occupations and knowledge of self.

Current career development theory suggests that career development is a lifelong process, yet an individual cannot make an optimum career choice without optimum self-knowledge (Hoerner, 1977). Good career decision-making must be based on usable and meaningful information. Hoyt (1976b) stressed the need to increase the use of community resources in implementing a career education effort. Business, labor, and industry are rich resources for use in helping students understand and capitalize on changing relationships between education and work. Hoyt advocated the use of personnel from the community to serve as resource persons for field trips, work experience, career exploration, work-study, and similar activities to increase student understanding and to offer alternatives to the teaching/learning process. "These community resources provide a rich background of knowledge, experience, and practical examples which can be used to supplement the personnel and physical resources of the education system itself" (p. 31).

Workers, according to Marland (1974), are the most valid sources of information concerning occupational life-styles. Employed workers who are successful in their jobs can communicate what an occupation is actually like and serve as effective models for young people. Buskirk (1977) suggested that working with or talking to individuals in the world of work was the best alternative for exploring career interests.

An ideal source of occupational information for college students is the college alumnus, according to Hoppock (1977). College alumni have a natural appeal to students because the alumni earned degrees at the same institution as the students and applied the educational experience to productive careers. Katz (1975) advocated providing students with the option of off-campus visits with alumni to bridge the discontinuity of experience in and exposure to the world of work that college imposes on its students. The Report on Higher Education (Newman, 1971) recommended the expansion of off-campus experiences in the world of work in order to reduce the isolation of students from the outside world.

Hollis and Hollis (1969) identified several uses of occupational information in assisting students. These included using information: to eliminate vague anxieties over the unknown; to provide a backdrop for considering one's own values, feelings, and attitudes; to build competencies by knowing information and identifying means of obtaining necessary skills or resources; to serve as stimuli for an

individual's creative, cognitive, and affective processes; to provide a base for making a choice or decision; and to enable feedback between subjective self-concepts and the objective data of the occupational world of reality.

Problems in choosing a college major and career are among the most common confronting college freshmen (Sanford, 1967). Wood (1974) and Myers (1972) emphasized that the current restricted labor market and increasing college costs have added pressure to the student's already difficult task of choosing a major and career. Employment prospects for college graduates have become less certain and the need for career planning during the college years has become apparent.

Students frequently shift majors during their undergraduate careers (Carnegie Commission on Higher Education, 1973). A study of a sample of 1961 entering freshmen who were included in a follow-up survey in 1965 revealed that well over one-half had shifted career choices during their college careers. "Colleges and universities must respond to changing student choices of careers and fields with all due deliberation" (p. 166). Moreover, these institutions should take immediate steps to strengthen occupational counseling programs available to their students. Greater emphasis should be placed on occupational counseling in view of the pronounced changes currently happening in the job market for college students. If students are to be sensitive in their career choices to occupational shifts, students should be

provided the best possible occupational information. Students need to develop realistic expectations about jobs.

Ginzberg, Ginsburg, Axelrad, and Herma (1951), Super (1953, 1957), Tiedeman (1961), Tiedeman and O'Hara (1963), and Ginzberg (1972) described decision-making concerned with career selection as a continuous and linear progression through stages according to chronological age. Early stages along the decision-making continuum include exploration, crystallization, choice, and clarification. Research supporting the existence of these stages and further amplifying the decision-making process has been conducted by Harren (1965, 1966, 1975, 1976b), Miller and Tiedeman (1972), and Tiedeman and Miller-Tiedeman (1975).

Osipow (1973) observed that evidence is mixed with respect to what the stages are and in which order they occur. Wolfe (1963) found discontinuity in career patterns over developmental spans. Crites (1969) concluded that choices become stabilized after mid-adolescence; the narrowing and ultimate selection of a career by eliminating alternatives is continuous through adolescence and early adulthood. However, Crites questioned whether the process is continuous and proceeds without interruption.

There is considerable evidence in the literature to support the need for formal programs of career exploration. One such program was conducted as part of this study.

### The Career Exploration Program: An Overview

The Career Exploration Program was designed by the writer in order to provide a systematic experience in career exploration for freshmen in a four-year private liberal arts college. The program had two primary objectives: (1) to facilitate the assessment of personal needs and values affecting career decisions; and (2) to facilitate the acquisition of meaningful career information from college alumni in the world of work.

The program consisted of two components designed to achieve the objectives. A standardized self-appraisal inventory, the Hall Occupational Orientation Inventory (HALL), was selected for administration to student participants in the program as a component to facilitate the first objective. A ninety-minute orientation to decision-making theory, specifically pertaining to career choice, was presented as preparation for the inventory administration.

Limited staff and financial resources at the college had precluded the establishment of a comprehensive career counseling program for students. Therefore, alumni of the college were recruited as volunteer resources for career information. As the second component of the program, these alumni volunteers were scheduled to meet with student participants. Students were invited to select one or more careers or occupations about which they wanted more

information. Meetings were scheduled for students with alumni in occupations corresponding to the students' stated career interests. In several instances, students visited an alumnus in pairs or groups of three. Visits ranged from one to two hours in length.

Students completing the HALL and participating in alumni visits were encouraged to correlate information about themselves with career information obtained from interviews with alumni. An Interpretive Folder was provided to assist each student in interpreting the results of the inventory. A pre-interview briefing was conducted to familiarize each student with the kinds of information to seek that might be beneficial. An Interview Guide was distributed at the briefing to emphasize specific items from the inventory interpretive publication on which students should focus in seeking career information.

Alumni were provided interview preparation literature, which paralleled the student Interview Guides, to acquaint alumni with the kinds of information that would be beneficial to the students. Alumni were encouraged to answer questions and share any additional information with students pertinent to specific occupations. Correlation of HALL inventory items with the interview guides distributed to students and alumni was intended to provide a framework within which students would derive meaningful career information.



### Statement of the Problem

The thesis of this investigation was that a systematic program of career exploration for college freshmen can improve their career decidedness. Components of the Career Exploration Program were designed to facilitate self-appraisal and career information-seeking. The problem was to assess the ability of these components to effect change in the students' career decidedness. Career decidedness was measured along the continuum of four decision-making stages--exploration, crystallization, choice, and clarification--set forth by David V. Tiedeman (1961).

According to Harren (1976a), the Tiedeman paradigm depicts individuals as essentially responsible for their own behavior, capable of making decisions through purposeful action. Discontinuities of experience, imposed by physical and social environments, confront individuals throughout their lives. College, for example, constitutes a new social environment which can produce such discontinuities. In this new environment, there is a societal expectation that the specific decision-making task of choosing a career be resolved.

As individuals seek a resolution to the problem of choosing a career, they engage four planning stages: exploration, crystallization, choice, and clarification. Each stage represents one phase along a continuum of career

decidedness. Greater decidedness increases individuals' control over their behavior and environment. Movement through the four planning stages leads to further purposeful action in pursuing a career.

### Hypotheses

The null hypothesis assumes there to be no differences among students resulting from their participation in the Career Exploration Program. To determine whether the program components effected change in career decidedness, the following alternative hypotheses were tested against the null.

#### Hypothesis 1:

Students receiving the orientation to career decision-making theory and completing the HALL will exhibit significantly greater career decidedness than students not participating in the Career Exploration Program.

#### Hypothesis 2:

Students conducting interviews of college alumni to discuss specific careers will exhibit significantly greater career decidedness than students not participating in the Career Exploration Program.

#### Hypothesis 3:

Students receiving the orientation to career decision-making theory, completing the HALL, and conducting interviews of college alumni to discuss specific careers will exhibit significantly greater career decidedness than

students not participating in the Career Exploration Program.

### Assumptions

The pursuit of this investigation was based upon the following assumptions:

(1) Self-assessment of needs and values, as they pertain to choice of a career, can be a valuable tool in facilitating decision-making behavior.

(2) Personal contact with individuals in occupations corresponding to students' interests can be a valuable career exploratory experience to facilitate progress toward a career choice.

### Definition of Terms

In order to clarify some of the terms in the investigation, these constitutive definitions are provided:

A career is the sequence of occupations in which one engages throughout a lifetime. These occupations may be very similar or quite different.

Career decision-making is a process of identifying and adopting personal career preferences, based upon a systematic process in which various data are utilized and analyzed. Decision-making combines both affective and cognitive domains in terms of career choices.

Career decidedness is movement in either direction along a continuum of the Tiedeman (1961) decision-making

stages--exploration, crystallization, choice, and clarification. Movement is measured by the Assessment of Career Decision Making-Form B (Harren, 1976b).

Career exploration is a period of seeking information about occupations, while also attempting to achieve a better understanding of oneself. Ideally information about self and about occupations is assimilated in career decision-making.

Career information is data about occupations, including the characteristics involved in successful fulfillment of the tasks unique to individual occupations. Career information generally includes the educational requirements, skills, and personal attributes germane to individual occupations.

Career Volunteers are alumni of Roanoke College working within the region who volunteered to serve as resources providing career information to Roanoke College freshmen when visited for scheduled interviews.

An occupation is a definable work activity or combination of related tasks that can occur in many different settings.

The world of work refers to a non-college environment in which individuals are actively engaged in occupations and careers.

### Study Limitations

(1) Data for this study were obtained from only one liberal arts college, and generalizations should be made carefully.

(2) The data concerning the control group and the experimental groups were examined statistically in terms of group effects.

(3) The assessment of career decidedness of students in the investigation was limited to the standardized instrument developed by Harren (1976b), Assessment of Career Decision Making-Form B.

(4) Treatment effects were limited to the ability of the Hall Occupational Orientation Inventory to identify students' needs and attitudes concerning careers, and to the ability of volunteer alumni to communicate effectively career information to students.

(5) In interviews of alumni by students, the quality and quantity of information obtained varied in proportion to the individual differences of the alumni and students who participated.

### Summary and Overview

In chapter 1 the introduction emphasized the fact that many proponents of career education in higher education are concerned with the availability of first-hand career

information to facilitate career decision-making. Programs of this nature are particularly appropriate early in the college experience to crystallize knowledge of self and knowledge of career alternatives beyond college. An overview of the Career Exploration Program was presented. Major components of the program were: (1) the orientation to career decision-making theory, followed by completion of the HALL self-appraisal inventory; and (2) interviews with alumni to discuss careers. The problem was to assess the ability of the components to effect change in career decidedness. Three hypotheses for investigation were stated. Relevant terms appearing in the study were defined and basic assumptions underlying the study were delineated. Study limitations were stated.

Chapter 2 is a review of literature related to the study.

In chapter 3, the methodology used in implementing the investigation is presented. The research population and sample are described. Procedures for gathering data are outlined. The instrument used in the experimental treatments and the instrument used to measure the effects of the treatments are discussed. Procedures for analyzing data are presented.

Results of the investigation are reported in chapter 4.

A summary of the investigation, a discussion of findings, and recommendations are included in chapter 5.

## Chapter 2

### REVIEW OF THE LITERATURE

Integral to the investigation is an examination of the literature concerning career development theories, assessment of individual needs and values, career information-seeking, and systematic programs of career exploration in higher education. Each of these dimensions is examined in this chapter. An overview of career development theories traces the evolution of theories held by leading authors. One theory in particular, espoused by David V. Tiedeman, provides a basis for the evaluation of the Career Exploration Program, and therefore is reviewed in detail. A review of the literature pertaining to needs/values assessment and career information-seeking relates specifically to the major components of the program. These are discussed in some length. Finally, evidence of various systematic programs of career exploration is reported. This evidence provides a framework within which the Career Exploration Program may be viewed.

#### Overview of Career Development Theory

Several decision-making theories concerned with an individual's choice of a career have been published by leading researchers during this century. As an introduction to the concept of career decision-making, the chronological appearance of these theories in the literature and their

classifications are presented in an overview fashion.

The process of career decision-making was viewed and often researched in terms of when and under what conditions occupational choices were made (Hollis and Hollis, 1969). Developmental psychological concepts were applied by theorists during the 1940's. Stages, patterns, levels, and developmental processes were considered as part of the life-long process of decision-making. "More changes have occurred in the understanding of man in the world of work in the past twenty years than probably in the total preceding twenty centuries" (p. 173). Under the developmental processes approach, the individual by necessity must make decisions, each one of which could be made with more security if he had and understood information pertinent to the decision as it applies to him personally.

Hollis and Hollis (1969, p. 175) compiled a representative listing of researchers and theorists in career development. The individuals are listed chronologically by years of the introduction of their major works from 1910 to 1967.

circa 1910	Parsons, Harper, and Witner
circa 1920	Keller and Viteles
1931	Harold F. Clark
1943	Edward S. Bordin
1949	Abraham A. Brill
1949	F. M. Carp
1951	Eli Ginzberg, et al.
1951	D. C. Miller and W. H. Forum
1952	Harry Beilin
1953	Joseph Samler
1953	Donald E. Super
1954	Theodore Caplow
1955	William L. Warner and James C. Abegglen



1955 Leona Tyler  
 1956 Peter M. Blau, et al.  
 1956 Anne Roe  
 1957 Donald E. Super  
 1957 Robert Hoppock  
 1958 Sidney A. Fine  
 1959 John L. Holland  
 1959 Robert L. Thorndike and Elizabeth Hagen  
 1959 Robert P. O'Hara and David V. Tiedeman  
 1960 Donald E. Super, et al.  
 1961 John O. Crites  
 1964 Warren D. Gribbons, et al.  
 1965 David V. Tiedeman  
 1965 Kenneth B. Hoyt  
 1966 John L. Holland  
 1966 Dale Tillery  
 1967 Glen Pierson, et al.

Tolbert (1974) classified career development theories into six categories similar to the classifications of Herr and Cramer (1972) and Crites (1969). "Developmental" theories focus on developmental stages, tasks, or phases in which the individual has some measure of control and freedom of choice. Proponents of this theory included Ginzberg, Super, Tiedeman, Beilin, Crites, Gribbons, and Samler. "Needs" theories, emphasized by Roe, Holland, and Hoppock, focus on psychological needs as primary determinants of behavior. Bordin and Segal were most noted for their "psychoanalytical" theories dealing with personality dynamics in the psychological system.

"Sociological" theories are represented by Miller, Forum, and Blau who held that sociological factors such as home, school, and community have a significant impact on career development. Gelatt, Hilton, Hershenson, and Roth set forth "decision-making" theories focusing on the way the individual

utilizes career information, self knowledge, and perceptions of rewards resulting from career choices. "Existential" theories, represented by Simon and Standley, have their roots in existential psychology as it relates to choice and fulfillment of potentialities.

Ginzberg (1951), Tiedeman (1961), Super (1963), Hershenson (1968), and Ivey and Morrill (1968) sufficiently established the fact that career choice is a continual process that proceeds throughout an individual's life. Dole (1963), Miller and Thomas (1966), and Harren (1966) differentiated between educational development, focusing on helping the individual choose an appropriate area of training, and career development, focusing on assistance in choosing an appropriate occupation.

Crites (1969) suggested viewing career choice as a developmental response variable. Morrill and Forrest (1970) held that the career decision-making process involves a series of tentative choices continually being made as individuals engage in the learning process. Through career counseling, individuals should be stimulated to use their own strengths in achieving self-determined goals.

Many career development theorists have attempted to view career development and decision-making as an on-going lifelong process, yet their theories were concentrated in discrete events in the lives of individuals entering certain occupations (Katz, 1975). Few theorists concerned themselves

with the evolutionary process of choosing career paths. Their theories often identified stages of career development within which students might be placed. "However, what they [theorists] did not consider was that students had to gain experience in, exposure to, and knowledge about particular careers at appropriate times during their career development in order ultimately to make effective career decisions" (p. 11).

Super was instrumental in leading vocational psychologists into the investigation of personality and career during the decade of the 1950's (Tiedeman and O'Hara, 1963). Tiedeman and O'Hara observed that Super and others (including Bachrach, Overstreet, Roe, and Ginzberg) did not portray in their writings the relationship of personality and career as it relates to the process of choosing. The goal of the individual should be formulation of an ego identity for work. "Ego identity is a psycho-social phenomenon...the crystallizing premise of existence which forges both where one can and where one may in order to establish one's self in the world" (p. 4). Career guidance should be the catalytic agent in fusing the unique world of the individual and the unique world of work.

#### Career Development Theory Related to the Topic

The theoretical framework within which the Career Exploration Program was developed and evaluated is rooted in

"developmental" theory. Specifically, the work of David V. Tiedeman and his coworkers provided the theoretical basis for this investigation. The fundamental precepts of Tiedeman's work and subsequent contributions by Vincent Harren are summarized below.

Tiedeman and O'Hara (1963) defined career development as a process of building a vocational identity through "differentiation" and "integration." During career decision-making, the individual will discriminate alternately among stimuli patterns and cognitively integrate information with vocational choice. Differentiation becomes a condition of problem-solving as an aspect of career development. Closure results when differentiated parts are integrated properly.

Tiedeman and O'Hara's process of differentiation and integration is comprised of a series of steps. Decision-making commences when a problem is encountered, or a need is experienced, resulting in the realization that a decision must be made. An individual may be at different stages of decision-making in dealing with different problems. The problems of deciding may be divided into two "aspects": (1) an aspect of anticipation or preoccupation, and (2) an aspect of implementation and adjustment. Four stages make up the anticipation aspect:

(1) Exploration is a period of considering various goals. The individual may review past experiences, consider abilities, weigh the desirability of goals, predict the

results of his actions, and try out roles in his imagination, differentiating courses of actions and estimating their desirability.

(2) Crystallization is the consideration of values, goals and possible rewards and preparation to move in a specific direction. Thoughts are stabilized and the individual prepares to make the choice that seems most desirable.

(3) Choice enables the individual to state what he wants to do or be. Goals may range from very tentative to quite firm.

(4) Clarification involves further analysis of choice, enabling the individual to complete his self-concept. There is an opportunity to review and resolve doubts and uncertainties during this final phase of differentiation (Tolbert, 1974).

Tiedeman and O'Hara (1963) described the aspect of implementation and adjustment as one in which the choice may be implemented. Stages in this phase are induction, reformation, and integration. During induction, the individual seeks approval and recognition and is receptive to the demands of the new situation. Reformation is a period of asserting individual convictions, having an impact on the group and also being influenced by the group. During integration a new concept of self develops in relation to a group. The demands of the group and the needs of the individual achieve an equilibrium. If the balance changes, the process of differentiation and

integration may be repeated.

Tolbert (1974) observed that studies by O'Hara and Tiedeman support hypotheses that changes occur in vocational self-concept with increasing age and that clarification of self-concept and increased self-knowledge results. Also, experience and the analysis of experience is as important in vocational decision-making as are lectures about experience (Tiedeman, 1965). "Relevant experience is vitally necessary in order to create a context in which students can relate the conceptions of the alleged disciplines to the requirements of action in a social context" (p. 6). Vocational maturity may be defined in terms of an ideal which is presented to the individual as information; the individual may then respond to the information in a mature or immature fashion.

Harren (1966) asserted that at any given time an individual is in one of the seven stages of decision-making-- exploration, crystallization, choice, clarification, induction, reformation, or integration. The college student is engaged in a process of implementing the decision to attend college. He is at some stage of planning concerned with decisions about major and occupation. Those decisions completed previously or in the process of implementation affect decisions in the first four (planning) stages. Although the career decision-making process is presumed to be progressive in the order stated, there is a possibility that regression or recycling through the stages will occur (Harren, 1976a).

Assuming that college students were within the anticipation aspect, Harren (1966) expanded the definitions of Tiedeman and O'Hara's four stages:

Exploration. This stage is marked by random, exploratory considerations. It is characterized by generalized, vague concern with little or no apparent progress toward choice. Knowledge of self and the occupational world is a felt need, but the individual has developed no strategy or plan of action for satisfying this need. There is an absence or near absence of definite negative choices (exclusions from the range of possibilities). This is accompanied by vague anxieties and doubts about the future.

Crystallization. This stage represents progress toward, but not attainment of choice. The individual recognizes alternative possible choices and at least some of the consequences of these alternatives. Conflicts are recognized; advantages and disadvantages are weighed; the bases for a decision are being developed at least implicitly. The process of narrowing down the range of possibilities through negative possibilities is operating. False steps and inappropriate earlier decisions are recognized and used as bases for further decision.

Choice. This stage represents a definite commitment with some degree of certainty to a particular goal. It is accompanied by expressions of satisfaction and relief for having made the commitment. The individual may focus on aspects or characteristics of self which are evidence to him that he has made an appropriate decision. This stage further represents a swing from the pessimism characteristic of the exploratory stage to a kind of naive optimism about the future. The individual usually expresses a singleness of purpose and an unswerving attitude of goal direction as well as an eagerness and impatience to reach the goal. Focus upon the consequences of the decision and further planning are not yet in evidence.

Clarification. This stage represents a process of closure in which the individual is involved in clarification and elaboration of the consequences

of his commitment, as well as in planning the details and next steps to be taken to follow through on the commitment. (Some of these consequences of commitment may well have been considered prior to commitment in the crystallization stage; yet, in this stage these considerations are more imminent and personally relevant, whereas earlier they were more distant and hypothetical.) In addition, the individual is usually engaged in a process of elaboration and perfection of his self-image and his image of the future. Although planning the overt action to carry out the commitment is characteristic of this stage, the overt action itself may be delayed until the environmental conditions are appropriate for action (p. 272).

Harren (1965, 1966) developed a Vocational Decision Making Checklist (VDC) using a Q-sort to investigate the four stages of anticipation identified by Tiedeman and O'Hara (1963). The Harren study was designed to examine the concept of vocational choice within an individual. Male college students responded to Q-sort items according to their relevance to self on a forced distribution scale. Without prior knowledge of the theory, respondents tended to sort items according to hypothesized a priori categories. Highest factor loadings of items on stages placed factors in one of the stages. Factor analysis and analysis of variance demonstrated that the stages were factorially discrete.

Expanding and revising the VDC, Harren developed the Assessment of Career Decision Making-Form B (ACDM-B). The VDC had been extended to assess the implementation aspect and its three stages--induction, reformation, and integration. Form B of the instrument was designed to incorporate assessment of



decision-making styles--planning, intuitive, and dependent. Part of the ACDM-B was adopted for use in this study and, therefore, will be discussed in more length in the following chapter.

The Relevance of Needs/Values Assessment and  
Career Information in Career Decision-Making

One major component of the Career Exploration Program involved needs and values assessment. The other component was concerned with the acquisition of meaningful career information. Theoretical and research evidence pertaining to these aspects is reviewed to amplify its relevance to the career decision-making process.

Hall and Tarrrier (1976) observed that the concept of an individual choosing his formal education and occupation has not long been practiced in the United States. However, scientific and technological advances during the past seventy years have produced a world of work in which an individual's abilities and interests, rather than social class and ethnic origin, influence career choice. Historically, occupational counseling has been viewed as the process of helping an individual appraise abilities and interests, and then select an occupation consistent with these characteristics. This "matching" process has employed psychological tests, occupational information and individual demographic data. If matchings were skillfully performed, it was assumed that the

individual would enjoy the economic reward and personal satisfaction resulting from the occupation selected. Further, it was assumed that inappropriate matchings resulted in problems--dissatisfied workers, absenteeism, and alienation.

The matching model of vocational counseling, which has prevailed for the past fifty years, can be attributed to rationale provided by trait-factor personality theorists and mental measurement psychologists. Although this model dominates current counseling strategies, more humanistic models are emerging. "Through an 'exploration' model there is promise of relating the individual to work in a psychologically fulfilling dimension, one which increases the power for independent decision-making and expands rather than narrows the vocational alternatives" (Hall and Tarrrier, 1976, p. 7).

The Hall career development model is an expression of the emerging humanistic model (Hall and Tarrrier, 1976). It is an explorative approach to decision-making which focuses on personal considerations that are operative, yet seldom made explicit. The HALL inventory assists "the young person develop self-examination skills with which to further explore needs, values, beliefs, attitudes, and interests, and make decisions that will allow him or her to experience, express, and utilize those dimensions of a unique personality" (p. 7). The goal of the model is to facilitate movement from lower levels of choice dependency to higher levels of choice independency among students. The HALL attempts to "maximize

personal control over career destiny" (p. 6).

The Hall model is a developmental process from external control of the individual toward internal control (Hall and Tarrrier, 1976). Choices made at the first level of the model, pretraditional level, are characterized by the domination of authority exerted by significant people, such as parents and teachers. Stages in the first level are marked by compliance or non-compliance with the external authority. At the second, traditional level, influence over the individual's choice is in the form of subjective comparisons of mental, physical, and social abilities, as well as scientific information such as psychometric tests. Hall and Tarrrier contended that most individuals enter this level in adolescence or young adulthood and remain there.

The posttraditional level (level three) is "a needs-meeting stage in which the individual makes choices on the basis of an awareness of inner needs, values, beliefs, abilities, interests" (p. 10). An occupation is chosen on the basis of its ability to meet needs. A second stage at this level, shaping, is the expansion or narrowing of certain aspects of the individual's life enabling him to better express and experience needs, values, and interests that are important. "The goals of formal education should include systematic programs of planned intervention to help increase the number of those who develop to the highest (posttraditional) level" (p. 10).

Decision-making operates along a continuum ranging from analytic to intuitive (Baumgardner and Rappoport, 1973). The continuum emphasizes a distinction between logical and rational conclusions based on explicit rule-following processes on one hand, and more implicit organization of perceptual, global, and effective information and experiences on the other. Decisions are based on both facts and feelings. Current vocational research and theory has tended to emphasize personality dynamics and social influences, as well as cognitive processes and cognitive-developmental changes. This "rational model" of career theory has been inadequate according to Baumgardner and Rappoport (1973).

Taylor (1962) characterized the confusion and frustrations over career decisions in the early college years as "sophomore slump." Beardslee and O'Dowd (1962) observed that freshmen appear to have stable images of career options. However, Madison (1968) contended that strong external influences, from parents and counselors, for example, give students the appearance of having definite career choices. This initial characteristic is eroded through college experiences as students attach greater weight to their feelings and values. Students come to realize that there are no objectively correct career choices. The individual must determine what is the correct choice, and not merely rely on test scores or advice from others.

College freshmen enter higher education at varying

degrees of maturity, and some are more certain of their career preferences than others (Appel and Witzke, 1972). The Career Decision Readiness Inventory was developed by Appel and Witzke to determine factors associated with decision and indecision regarding collegiate major and career choice. Factors found to be determinants of decision-making were: (1) goal orientation or a propensity toward direct concern with attainment of a career objective; (2) self-orientation, or a propensity to give importance to attaining increased self-awareness and personal growth; and (3) indecisiveness orientation, or a propensity to find all types of important decisions difficult to make.

Thompson (1976) observed that students often want to discover the one career they were "cut out for." They often have high expectations of the ability of psychometric instruments to unravel this mystery. Holland (1973) held that the goal of vocational psychological assessment continues to be the matching of persons and jobs. However, Warnath (1975) doubted that counselors using such instruments can claim that their matches have resulted in placing people in jobs that are "fulfilling."

Thompson further stated, "the most ingrained problem with client misconceptions about tests revolves around the issue of responsibility in decision-making" (p.32). Students who depend heavily on test results are usually looking for a scapegoat on which to shift the responsibility of a career

decision. These students seldom come to grips with issues of self-confidence, personal commitment, and individual responsibility. Tests should be used as vehicles for collecting and organizing information about oneself. Moreover, students frequently have misconceptions regarding the existence of a relationship between interest and ability. There appears to be a relationship, but not a strong one (Super and Crites, 1962). Any misconceptions and inaccuracies concerning test information pertaining to interests and abilities should be dealt with before test results are interpreted.

In a report reviewing published and unpublished data pertaining to career planning and related topics, Van Mondfrans, Kay, and Windle (1971) summarized the variables affecting the choice of a career. Personal characteristics affecting choice include personality, attitude and interest, and biographical variables. Needs and self-concept seem to be consistent with the characteristics of the career chosen. External factors, such as socio-economic status, the expectations and models of significant other persons, and the characteristics of careers, affect career choice. Intrinsic characteristics of careers, such as the type of work, opportunities for self-development and recognition, appear to be more important than salary, fringe benefits, and social relations (extrinsic factors). Foreman (1968) found that students seeking career counseling are generally quite accurate in estimating their measured needs and interests.

Yankelovich and Clark (1974) reported results of four studies of youth values among college and non-college youth, ages sixteen to twenty-five. Student interest has shifted from social reform, observed in the first study in 1967, to a focus on self, including career planning and personal fulfillment. "Even as college students are attempting to consolidate their private values and synthesize them with career goals, they can see some evidence that a marriage between the desire for personal self-fulfillment and a successful career is not necessarily impossible" (p. 46). Emphasis among college students is "self-directed-self-expression, creativity, self-development, physical well-being, self-fulfillment both on and off the job" (p. 46). Job criteria which students emphasized as being important to them include challenging work, the ability to express oneself, free time for outside interests, financial compensation, security, and the chance to get ahead. College students interviewed in the studies appeared enthusiastic about the possibility of participating in a "career-planning year" for the purpose of exploring different fields and job opportunities.

According to Buskirk (1977) college students lack experience to determine what they like or dislike. Many students have not held meaningful jobs; some have never had any type of employment. The best solution is for those individuals to obtain some experience by working or by making a special effort to talk to individuals in various occupations.

Students should determine what is involved in specific careers and for what reasons people like or dislike their jobs. Experience is something the student must aggressively seek out. Such considerations as financial rewards, job characteristics, type of work environment, and security needs should be carefully examined in the career exploration process.

Experiential education is an educational device which can have an impact on both traditional goals and the way the larger institutions of work, leisure, and service are shaped in the future (Sexton and Ungerer, 1975). In the broad definition of the term, experiential education is direct exposure to the world of work. Sexton and Ungerer pointed out that there is support for the concept of increasing emphasis on exposing students to career options so that their choices will be more fruitful.

Opportunities to learn about the projected availability of jobs must be part of career information obtained by students through contact with individuals in the labor force (Sexton and Ungerer, 1975). Projections by the U. S. Department of Health, Education, and Welfare indicated that the number of bachelor's degree graduates will increase to 1,005,000 by 1980-81, nearly three times the number in 1960-61. The proportion of students concentrating in the humanities, social sciences, and related liberal arts is projected to increase to 58 percent by 1980-81. "At the root of the



problem [of locating employment] is supply versus demand" (p. 35).

"Liberal arts majors do not know what to expect of the future, so they respond to the buzz words of the present: 'public relations,' 'management trainee,' or 'historic preservation'" (Gatlin, 1976, p. 63). Students lack experience and, consequently, information. Information is confined to primarily that imparted by parents, teachers, medical personnel, and public employees. Students are conditioned by the media, and they are inexperienced or ignorant about economic processes. It is understandable that they depend on the influence of significant others in lieu of seeking information to help them in their career exploration.

Thompson (1976) stated that it is productive to consider and evaluate career alternatives in the career exploration process, eliminating alternatives that are impractical or not feasible. A comparative approach in which relative advantages and disadvantages of various alternatives are explored can be extremely productive. Individuals should be encouraged to pursue and experiment with several alternative careers.

College years, according to Titley, Titley, and Wolff (1975), may produce a discontinuity of experience for some students. Based on rather limited occupational information and an undifferentiated environment with respect to what careers are available within fields, freshmen may be better able to specify what careers they have chosen than seniors.

However, as students proceed through the educational process, more differentiations among careers become evident, and specifications become more difficult. In their study, the investigators observed that, although alternative career choices appeared to increase, the ability to specify choices clearly decreased. "The college years may well be a period of discontinuity for many students and an age-related linear progression in the process of career selection for all people in all environments should not be assumed" (p. 8). Their study offers implications for modifying career exploration experiences and related career counseling approaches.

Evidence of a Trend Toward Structured Career  
Exploration Programs in Higher Education

The need for and development of structured programs of career exploration in higher education institutions has been reported in the literature of recent years. The findings reported by various researchers, discussed below, have implications for the evaluation of the Career Exploration Program. Highlights of the results of certain studies are presented in the following summary.

<u>Date</u>	<u>Author</u>	<u>Finding(s)</u>
1969	Goodson	-Students can be assisted in career development over short treatment periods.
1969	Wedemeyer	-Field experience complements classroom learning.

- 1971 Myers -Counselors can influence better decision-making.
- 1972 Stoddard -Evaluation of career counseling revealed greater decidedness.
- 1972 Shepherd  
1972 Stoddard -Small group procedures enhance career information-seeking.
- 1973 Aiken and Johnston  
1974 Gordon, Carney, and Archibald
- 1973 Fadale and Fadale -College students are concerned with values, cognition, decision-making, and career choice.
- 1973 Reardon, Domkowski, Burkhardt, Minor, and Smith -Self-directed career development program included self-assessment, career information, and referral resources.
- 1974 Figler -Best career counseling strategies include values clarification, testing, determining self-impressions, referrals to workers, and supplying job-market supply and demand information.
- 1974 Fulton and Morrison -The "Shared Experience Program" introduced students to members of the business community.
- 1974 Johnson -Students change majors and prolong formal education; students need exploration; one-to-one career counseling is uneconomical.
- 1974 Kuehn -Structured group counseling and values examination facilitated career choices.
- 1974 Luther and Smith -Proposed model of orientation, self-assessment, exploration, setting objectives, contact with the world of work.
- 1974 Reifsteck -The "World of Work" program promoted greater insight into the career options of students' majors.

- 1975 Barak, Carney, and Archibald -Career information-seeking stimulated career decision-making.
- 1975 Elkins -Identification of career counseling needs provides basis for productive counseling.
- 1975 Katz -The "Swarthmore Extern Program" improved students' decision-making strategies and understanding of the world of work.
- 1976 Comas and Day -Career exploration course integrated self-awareness with career information from workers.
- 1976 Davidshofer, Thomas, and Preble -Counseling model included interest inventories and career information-seeking.
- 1976 Hollis and Hollis -Devised textbook-workbook covering self, world of work, gaining skills, considering alternatives, and decision-making.
- 1976 Kaufman -The "Career Advisory Program" provided opportunities for student visits with college alumni.
- 1976 Paradise -"Acquiring Vocational Direction" program integrated self with work environment.

In a report evaluating a model for assessment of needs and resources for career guidance on a college campus, Bergeson, Roost, and Phillips (1975) found that academic departments supplied limited resources for aid in career choice. McLean and Loree (1973) reported that students at the University of Alabama felt a need for career information and development, yet most did not know where to seek assistance. The need for better career counseling in colleges can be met by placing more emphasis on the career program early in the

academic program and providing information on current employment trends to students (Lindsey, 1974). A study by Harvard University (1970) revealed that students preferred more interaction with professionals in fields other than higher education during the undergraduate years to gather information related to careers.

Katz (1975), originator of the "Swarthmore Extern Program," evaluated student pairings with alumni to expose students to various careers. After the experience of visiting with alumni, students exhibited better criteria for evaluating their career goals, sounder strategies for making career decisions, and a better understanding of the world of work. Katz emphasized the need to devise assessment techniques for carefully evaluating the role of off-campus experiences to promote vocational development.

Myers (1971) reported that counselors can influence certain instrumental activities leading to better decision-making, especially activities concerned with seeking relevant information about imminent choices. Studies by Shepherd (1972), Stoddard (1972), Aiken and Johnston (1973), and Gordon et al. (1974) also have shown that vocational information-seeking behavior can be significantly increased among college age students using small group procedures.

Several factors have emerged in recent years which have affected administrative philosophy regarding career development among college students (Johnson, 1974). These are:

- (1) Students who achieve a premature closure of career plans often extend their schooling time as a result of several changes in major.
- (2) Many life career decisions have been made in the light of very incomplete and often inaccurate information. Those who are adamantly decided on a major are often those who have the least knowledge of the course of action they wish to pursue.
- (3) Career educating and development are processes--not products. Thus a student must be allowed time for exploration, consultation and evaluation.
- (4) One-to-one counseling is too time consuming and uneconomical in reaching all students at various stages of career development.
- (5) Counseling services and functions must be adapted so that they are complementary rather than competitive or overlapping.
- (6) Every person has creative abilities that can be applied and developed to enrich all aspects of life (p. 3).

Fadale and Fadale (1973) asserted that all too often colleges' concern for career development has been limited to placement. Lately, colleges have begun to perceive their necessary role in the career development of college students. College students are in a state of growth and development in terms of values, cognition, personality, decision-making, and career choice. The problem confronting the college community becomes how to best meet the needs of students concerned with career development and choice.

At colleges where some focus has been given to career development programs, responsibility for programs was assigned to the counseling service or placement office. This has frequently resulted in piecemeal efforts and fragmented programs which failed to reach the majority of students (Luther and Smith, 1974). There is a definite need for an

integrated and systematic approach to career development. Luther and Smith proposed a model, various sequential levels of which are designed to facilitate career decision-making. These levels included: orientation and awareness; assessment of self; and contact with individuals in the world of work.

When faced with students who are undecided about careers, many counselors opt for one or several strategies to assist their clients (Figler, 1974). These strategies include: (1) employing testing methods to narrow the range of alternatives; (2) determining students' self-impressions of the kind of work for which they are best suited; (3) referring students to people in the working world immediately, to increase the scope of their experience; or (4) calling upon job-market supply and demand information to help students become better informed concerning areas to be avoided because of diminishing opportunities. However Figler noted, "Before students can make decisions about their life's work, they must go through a vital incubation period, in which they consider why they are planning to invest themselves in a particular career direction" (p. 34). Strategies summarized above fail to encourage an examination of "why," and make it easier for students to avoid the incubation period. "If you only have an hour to get some students started in the career decision process, the best that you can do is to open them up to their own values--those deep-seated motivators which

will influence any work choices that an individual may make" (p. 34).

Figler proposed a systematic career exploration program consisting of a brief values clarification session to help students identify values which lead students to prefer certain kinds of work. The session was designed to demonstrate that work values are not specific to occupations and that work values can be merged creatively to satisfy several different values within a single working role. Following the session, students were to be able to identify two or three kinds of work they wanted to explore. Additionally, they were to know why they value certain aspects of work more than others, and be able to recognize that their strongest values governed future decisions. Through this process, the students' attitude toward counseling was to be reversed from passive to active involvement. Values-type approaches to counseling serve "to urge the students toward more satisfying goals, rather than allowing them to settle for what they perceive as being available" (p. 40).

Career education programs have received increasing emphasis throughout the country, yet liberal arts students comprise a group who have received the least attention in this area (Paradise, 1976). A vocational counseling program for liberal arts students at the University of Virginia was developed by Paradise. The purpose of the "Acquiring Vocational Direction" program was to integrate self with the



environment for occupational direction. Four group counseling sessions focused respectively on exploring individual needs, skills, abilities, and personality traits; developing occupational awareness; exploring the occupational environment; and integrating self with occupational environment. Paradise concluded the program provided useful and meaningful strategies for counseling liberal arts students.

A group approach to vocational counseling was conducted at Colorado State University by Davidshofer et al. (1976). Structured experiences were designed to involve students in occupational information-seeking behavior through exposure to campus and community resources. During three sessions, students completed and interpreted several vocational interest inventories, and gathered information concerning vocational interests identified by the instruments. The investigators concluded that the group experience produced some changes in career maturity, using the Vocational Development Inventory (VDI) developed by Crites (1971).

Comas and Day (1976) reported the results of a course in career exploration conducted for undergraduate students at the University of Alabama. Course objectives were to provide students opportunities to become more aware of themselves in the process of career selection and to develop students' decision-making skills using personal and environmental information in educational and occupational choice. Interaction with academic and business representatives,

individuals in the labor force, career planning and placement specialists, and other students were utilized to facilitate appropriate career choice. End-of-course evaluations revealed that participants agreed that the course helped them make career decisions or provided the skills to assist them in making a decision at a later date. The participants indicated that self exploration activities were among the most positive and significant contributions of the course.

The choice of occupation, according to Kuehn (1974), is rooted in the individual's value system, and therefore students must be encouraged to examine their values as part of the decision-making process. Kuehn observed the effects of a structured group counseling experience on seventeen college freshmen who were undecided about a career choice. Results indicated that group counseling for undecided students should focus on examining values, decision-making, and getting information about the world of work.

A study by Elkins (1975) attempted to identify major factors held by college freshmen to be the most important to consider in their personal career planning. Pre- and post-questionnaires were obtained from student volunteers attending a workshop to discuss various factors to be considered. Factors listed by more than ten percent of the respondents included (in order of frequency) interests, opportunity, earnings, satisfaction, abilities, location, goals, and personality. Although students were undecided in terms

of career direction, Elkins concluded that they were able to identify factors they felt would play an important role in career planning. These factors could serve as the basis for productive career counseling.

A study by Barak et al. (1975) explored the relationship between vocational information-seeking behavior and educational-vocational decidedness. Two groups of "undecided" freshmen participated in a career development module consisting of a values-clarification exercise, discussion of sex-role socialization on career selection, and Holland's Self-Directed Search. Additionally, one of the groups participated in a three-hour "Life Planning Workshop" oriented toward career decision-making. Correlations between the measured vocational information behavior in pre- and post-measures for educational and vocational decidedness were low, but significant. The authors concluded that engaging in information-seeking stimulated career decision-making and also the making of educational and vocational decisions prompted further information-seeking. The findings suggested a careful "review of commonly held assumptions about the casual impact of occupational information-seeking on career decision-making" (p. 156) is appropriate.

A ten-week seminar in career counseling was conducted by Stoddard (1972) to evaluate a career education experience among college students. Pre- and posttest scores on the Vocational Development Inventory, the Career Activities

Survey, and the Career Assessment Form revealed significant differences. However, scores were not compared to a control group. Stoddard suggested that movement in the direction of less decided on the Career Assessment Form also may represent "growth" among the participants.

The Curricular-Career Information Service was developed at Florida State University (Reardon et al., 1973). The self-directed program offered students information about career decision-making, a self-assessment experience, exposure to curricular and career information, and information about campus and community referral resources. As a result of their participation in the program students were significantly better able to identify and use career development resources. Also, students learned more about the career decision-making process than the control population.

Goodson (1969) reported results of treatments concerned with occupational and educational information and with self-appraisal information administered to three groups of college students. The Crites Vocational Decision Making Inventory and the Harren Q-sort Instrument were used to compare treatment groups with a control group. Goodson concluded that students can be assisted in their career development over a short treatment period. Students were aided in developing more mature vocational attitudes and in moving to higher stages of career decision-making.

Hollis and Hollis (1976) devised a combination textbook-workbook to provide a sequence of experiences to help college students learn the process of career and life planning through a learning-teaching model. Units in the publication covered: self; world of work; gaining knowledge and skills; considering alternatives; and making, implementing, and revising decisions. Units were subdivided into topics for study with a summary of each topic including background content, preparation sheet, and recommended classroom activities.

A short exposure to work experiences can be quite educational (Wedemeyer, 1969). The benefits of experiential education are too often overlooked; field experience is needed to complement the present classroom approach to learning. Most importantly, it can enhance development of self-concept in students. Elmhurst College offered junior and senior level students opportunities for field experience related to their college major, often leading to academic credit.

"[An] unwallled, off-campus, and non-academic activity should become an integral part of the educational process. Students believe that such unique experiences make campus life more meaningful" (Fulton and Morrison, 1974, p. 48). The "Shared Experience Program" was developed in 1969 in the Boston area to pair students with sponsors in the business community to help students better understand the expectations

and behavior of people in the professional world. The basic objective of the program was to provide a learning experience for students through visits to the sponsors' business locations.

Programs designed to expose college students to the world of work have been introduced on many campuses across the country. Alumni of their respective colleges often have been recruited to serve as resources for career information in these programs. Contact time between students and alumni generally has ranged from several hours to as long as one week. The term "extern program" has been used to describe programs having longer contact time. Activities employed in such programs have included interviewing alumni, shadowing, and actual work participation. Literature describing various programs was obtained from the University of Virginia, Swarthmore College, Goucher College, Iowa State University, Brown University, and Hood College. Katz (1975), originator of the "Swarthmore Extern Program," reported the existence of similar programs at thirty-four colleges and universities in the United States, exclusive of those mentioned above.

At La Salle College, sophomores in the school of arts and sciences were encouraged to participate in the "World of Work" program which involved spending a full day or more with a La Salle alumnus in a career the student was considering (Reifsteck, 1974). Students appeared to gain greater insight into the career options of their majors. Alumni

enjoyed the contact with students in addition to the opportunity to be of service to the college.

A "Career Advisory Program" was developed at the Boston University School of Management to pair students and alumni, providing an opportunity for students to seek firsthand career information (Kaufman, 1976). Students visited alumni individually and in small groups. Visits lasted from one to two hours in length. Follow-up questionnaires from students revealed that all obtained career information from the visits. Nearly one-half of the students also received advice on academic preparation. Several students commented that their confidence and skills in interviewing were enhanced appreciably by participating in the program.

### Summary

Of the six general categories of career development theories, one category was concerned with life stages or phases in which the individual has some measure of control and freedom of choice. "Developmental" theorists viewed decision-making as a lifelong process. Classic developmental theory began with Ginzberg et al. (1951). Tiedeman and O'Hara (1963) identified developmental stages characteristic of the decision-making process at various age levels. Harren (1966) added behavioral dimensions to these stages and demonstrated that college students were somewhere within the anticipation phases of exploration, crystallization, choice,

or clarification with respect to decisions affecting career choice. Hall and Tarrrier (1976) proposed a humanistic model of career development to facilitate movement from choice dependency to choice independency. Strategies employing psychometric instruments with few other opportunities for self-appraisal and career information-seeking were viewed as incomplete and inappropriate to the ultimate achievement of independent decision-making. In an effort to broaden the opportunities for career exploration for their students, many colleges have developed systematic programs concerned with expanding students' knowledge of themselves and of the world of work. Approaches to programs have differed widely. However, most were found to have a positive effect on students' progress in career decision-making. Several of the programs have incorporated opportunities for students to visit with college alumni and other members of the business community for the specific purpose of broadening students' knowledge of specific careers.



## Chapter 3

### METHODOLOGY OF INVESTIGATION

This study was conducted to identify any significant differences in the career decidedness of college freshmen in a control and three treatment groups established for the investigation. Data were obtained on pretest, posttest, and post-posttest measures for individuals in each group.

#### Population and Sample

The research population consisted of college freshmen enrolled in the 1977 fall semester and 1978 interterm at Roanoke College. One hundred sixty freshmen were selected at random by the Dean of Students to participate in the research sample. This number was approximately one-half of the freshman enrollment at the college.

Roanoke College, located in Salem, Virginia, is a private, protestant church-related, four-year college founded in 1852. At the time of the investigation, the enrollment was 1060 students. Seventy-eight percent of the students enrolled resided in residence halls on the campus. The college's sixty-five faculty instructed courses in twenty-three majors under programs leading to the Bachelor of Arts, Bachelor of Science, Bachelor of Business Administration, and Bachelor of Liberal Arts degrees. No programs were offered beyond the baccalaureate level.

The college was selected as the research population because no systematic program of career exploration had been implemented there. Limited fiscal resources had placed constraints on the number of student personnel counselors available to assist students in career-related concerns. Faculty members served as academic counselors, offering assistance in making course selections and choosing a major. Declaration of major was not required in the freshman year. The administration of the college was committed to improving and expanding its counseling services, particularly programs in the area of career counseling.

A profile of the freshman class, developed from the Cooperative Institutional Research Program of the American Council on Education (1977), is summarized in Appendix A. Freshmen at Roanoke College differed somewhat from 1977 national norms. A slightly higher percentage of freshmen at Roanoke College were Caucasian. More of these students estimated parental income to be from \$25,000 to \$50,000 (or more), indicating them to be from a higher socio-economic level. A slightly higher percentage of freshmen completed college preparatory training at the high school level. A slightly lower percentage of freshmen indicated that Roanoke College was their "first choice" college. In responding to "probable career occupation," 25.6 percent were undecided, compared to a national norm of 10.9 percent.

### Study Design and Procedures for Data Collection

The Career Exploration Program was conceived to provide two principal components:

(1) an orientation to career decision-making followed by an opportunity for students to engage in the self-appraisal of personal needs and values; and

(2) an opportunity for students to explore careers through visits with college alumni to obtain career information.

Each student in the research sample was assigned randomly to one of four groups, with forty students in each group. The design of the study is illustrated in Figure 1.

The first group (Group 1) served as a control group. Group 2 received an orientation to career decision-making theory and completed the HALL--component (1). Group 3 visited and interviewed alumni in careers corresponding to the students' expressed areas of career interest--component (2). Group 4 received a combination of components (1) and (2)--an orientation to career decision-making theory followed by completion of the HALL, and participation in interviews with alumni to discuss career interests.

The research design conforms to the True Experimental Design, using the pretest/posttest control group model, described by Campbell and Stanley (1968). Internal validity is the minimum without which any investigation is

Group	n	HALL		Alumni		Posttest	Post-posttest
		Pretest	Inventory	Interviews	Posttest		
1	40	0			0	0	0
2	40	0	X		0	0	0
3	40	0		X	0	0	0
4	40	0	X	X	0	0	0

Timetable: 5th week<sup>a</sup> 6th week 7th, 8th, 9th weeks 11th week Interterm<sup>b</sup>

Note. Experimental observation = 0; Experimental treatment = X.

<sup>a</sup>Week during the fall semester.

<sup>b</sup>Six weeks after posttest.

Figure 1

Design of the Study

uninterpretable. The pretest/posttest design controls for all internal sources of invalidity, which are history, maturation, testing, instrumentation, regression, selection, mortality, and interaction between pairs of the aforementioned sources. Control of these factors enables a valid test of whether the experimental treatments make a difference in the experiment.

Pretest and posttest data were collected during the 1977 fall semester. Early in the semester, freshmen participated in small-group general orientation activities, conducted by faculty members. The content of orientation sessions was not concerned with career counseling activities. The investigation commenced during the fifth week of the semester after freshmen had experienced some opportunity to become oriented to the college environment. All four groups were administered the Assessment of Career Decision Making-Form B (ACDM-B) as a pretest (Appendix B). Faculty orientation group leaders administered the pretest to their groups after providing oral and written instructions.

During the sixth week of the semester, Groups 2 and 4 were presented an orientation to career decision-making theory by Dr. Lacy G. Hall, author of the HALL. In a ninety-minute presentation, Dr. Hall reviewed the theoretical base for his instrument, including the pretraditional, traditional, and posttraditional levels of decision-making discussed in chapter 2. He administered an abbreviated

version of the HALL (Appendix C) to demonstrate its use and the method of interpretation. At the conclusion of the sessions students received copies of the HALL question booklet, answer sheet, and Interpretive Folder. They were instructed to complete and score the instrument in the following two days, using the Interpretive Folder to analyze their scores. The two sessions with Dr. Hall were video-taped for use in training Roanoke College faculty members who would administer the HALL in the future.

During the months preceding the study, alumni of the college residing in the city of Roanoke and Roanoke County were recruited to participate in the program as Career Volunteers. A brochure outlining the objectives of the program (Appendix D) was mailed by the Alumni Activities Office of the college. Alumni who returned the brochure questionnaire and volunteered to participate were grouped according to the thirteen occupational clusters appearing in the Occupational Outlook Handbook, 1976-1977 Edition. The careers represented by volunteer alumni are summarized in Appendix E. Each volunteer was mailed a more detailed description of the Career Volunteers Program (Appendix F). Items on which to focus during interviews with students were included in the description. These items corresponded to the twenty-one HALL scoring dimensions which were defined in the HALL Interpretive Folder.

During the seventh week of the semester, Groups 3 and 4 attended a pre-interview orientation conducted by the Dean of Students and the writer. During the orientation session, the goals and procedures of the alumni interview program were presented. Group members completed an Interview Request Form (Appendix G) indicating their primary and, in some instances, secondary career interests. Also, each student identified days and times during the subsequent two weeks when he or she would be able to visit an alumnus. An Interview Guide (Appendix H) was distributed to each student, with instructions to focus during the interview on as many of the items in the guide as appropriate. These items paralleled the items included in the description sent to alumni.

Alumni, in careers corresponding to the students' interests stated on the Interview Request Form, were matched with students. Interview appointments with these alumni were scheduled for the group members by the Dean of Students and his staff during the seventh week. Interviews were conducted by students during the eighth and ninth weeks of the semester. Students in both groups visited many of the same alumni. In some instances, members of Groups 3 and 4 visited an alumnus together.

During the eleventh week of the semester, all students were requested to visit the Office of the Dean of Students and complete the ACDM-B (posttest). Additionally, students in Groups 3 and 4 were supplied an Interview Evaluation Form

(Appendix I) and invited to offer written comments concerning their reactions to interviews with alumni. No other career exploration activities were scheduled for the members of the four groups during the weeks following the posttest.

Following the Christmas holiday recess, the college resumed classes for a month-long interterm. The ACDM-B was mailed then to all students who had completed the posttest. Students were requested to return the completed instruments to the writer. This post-posttest was conducted in January, 1978, six weeks following the posttest and twelve weeks following the pretest.

### Instrumentation

Two standardized instruments were selected for use in the investigation. The Hall Occupational Orientation Inventory (HALL) and accompanying Interpretive Folder (Hall and TARRIER, 1976) were selected for administration to students as vehicles for self-appraisal. The Assessment of Career Decision Making-Form B, referred to by author Vincent Harren as ACDM-B, was selected to assess movement by students through four stages of decision-making originally identified by Tiedeman (1961).

#### Hall Occupational Orientation Inventory (HALL)

There has been increasing dissatisfaction with normative occupational inventories in recent years and the



predictive use that counselors have made of them (Goldman, 1972a). Counselors would do better to place less emphasis on tests that stress number scores and comparisons with norm groups. Instead, counselors should emphasize those few tests, like the HALL, designed to stimulate self-exploration and group discussions about values, goals, and alternative courses of action concerning careers (TARRIER, 1971). Goldman (1972a) pointed out that

authors and publishers of interest inventories are going to have to face up to the strange findings that scales with identical or similar names on different interest measures don't correlate very highly or at all with each other.... Our present tests are much too concerned with placing people in pigeonholes rather than suggesting ways that these people might best develop their potentialities (p. 218).

The HALL appeared to have much more to offer than the traditional inventories that emphasize quantitative and normative comparisons and predictions (Goldman, 1972b).

The HALL, initially developed in 1964, with subsequent editions in 1968, 1971, and 1976, introduced several innovations in the content, construction, and application of an occupational counseling inventory (Hall and TARRIER, 1976). These innovations included: (1) use of the inventory to instruct rather than measure; (2) interpretation of scores idiographically rather than normatively or predictively; (3) approaching occupational information through the individual's inner psychological self rather than the external "economic man"; (4) attempting to broaden the individual's

occupational considerations rather than delimiting them; (5) stimulating the individual to recognize personal values and psychological needs; and (6) providing the individual with maximum control over personal needs and values assessment through a self-scoring "open" inventory.

The HALL was developed by its author to assist individuals, primarily students, in identifying personal needs and values. On the inventory, a series of statements are rated according to the individual's perceptions of his needs and values, and how these relate to the world of work. Theoretical foundations of the inventory were traced to three sources: (1) Abraham Maslow's need theory adapted to a theory of occupational choice by Anne Roe; (2) worker traits identified and researched by the United States Department of Labor; and (3) job-content characteristics identified by the United States Department of Labor.

The HALL employs twenty-one scoring dimensions within the three source categories described above. The "values and needs" segment includes creativity/independence, risk, information/knowledge, belongingness, security, aspiration, esteem, self-actualization, personal satisfaction, and routine/dependence. The "job characteristics" segment includes data orientation, things orientation, and people orientation. The "worker-traits" segment includes location concern, aptitude concern, monetary concern, physical abilities concern, environment concern, co-worker concern, time

concern, and qualifications concern. A "defensiveness" dimension serves as a verification scale to indicate defensive response sets and tendencies to make insincere responses. Scoring dimensions in the values/needs and job characteristics segments are "directional" scoring scales. Scores are intended to indicate the examinee's expressed orientation toward or away from each of the thirteen dimensions. The worker-traits segment is a "degree" scale intended to survey the intensity of the examinee's concerns about the worker-traits and job characteristics described in the inventory.

The HALL is designed to be self-scored by the examinee, thereby making the inventory results immediately available to the examinee and counselor/teacher. An Interpretive Folder accompanies the HALL to introduce the goals and content of the inventory and to explain the scoring dimensions and the meanings of various scores on each. Also included in the folder are a Profile Sheet on which to record raw scores, space for listing occupational preferences with reasons for each, and space to record items to which the examinee responds "most desirable" and "very undesirable."

Hall and Tarrier (1976) asserted that the items and scoring dimensions were designed to aid the examinee in assimilating life, leisure time, and occupational information typically absorbed from the media, interaction with others, and direct participation. Roe's (1956) theory of occupational choice suggested that occupational information should

start with recognition of the individual's needs, feelings, and work motivation to enable ultimate receptiveness to rational/economic occupational information. Hall and Tarrrier held that their career development model was consistent with Roe's concerns.

Zytowski (1972) reported in the Buros Mental Measurements Yearbook that the HALL was congruent with a trend in occupational behavior theories to use need or value constructs as determinants. Data reflecting the reliability and validity were minimal for the first edition. The HALL Counselor's Manual (Hall and Tarrrier, 1976) offers additional data to support the validity of the inventory. Data from 2,200 subjects were categorized under "responsiveness, comprehensiveness, acceptance, relevance, developmental potency, occupational differences, and validity in use." In terms of reliability data, reliability coefficients obtained on 425 students were reported by the authors to range between .74 and .91. However, the authors noted that the HALL was designed to sample changing, dynamic personality variables and, therefore, traditional predictive tests for reliability were not appropriate evaluative measures.

#### Assessment of Career Decision Making-Form B (ACDM-B)

In an attempt to evaluate the effectiveness of Career Exploration Program strategies for self-appraisal and career information-seeking, the Harren ACDM-B was administered in a

pretest/posttest/post-posttest situation. The ACDM-B went through several developmental stages prior to the 1976 edition adopted for use in this study.

In recent years, vocational theorists have advanced models of career decision-making which employed psychological decision theory and developmental psychology concepts (Jepsen and Dilley, 1974). However, these theories lack sufficient specification of variables concerned with the population of decision situations, the types of decisions, and the characteristics of the decision-maker. Harren (1965, 1966, 1976a) designed and developed an instrument, the Assessment of Career Decision Making (ACDM), which focused on the concerns expressed by Jepsen and Dilley. The ACDM was designed to assess the college student's degree of progress in making and implementing related career decisions --decision to go to college, choice of major, and choice of occupation. The instrument also was designed to measure the planning, intuitive, and dependent decision-making styles.

Tiedeman and O'Hara (1963) proposed a decision-making paradigm, on which the ACDM is based. Modifications in decision-making styles proposed by Miller and Tiedeman (1972) and Tiedeman and Miller-Tiedeman (1975) are included in the ACDM.

The Q-sort instrument developed by Harren (1965) served as forerunner of the ACDM-A and ACDM-B. The original format consisted of fifty-six items, each corresponding to one of

four decision-making stages--exploration, crystallization, choice, and clarification. Difficulties which subjects had in using the Q-sort construction prompted Harren to modify the instrument to a simple checklist, the Vocational Decision Making Checklist (VDC). Further developmental research was conducted by its author to design an instrument to serve as an assessment tool to aid in individual and group counseling.

The ACDM-A was developed by Harren to generate sixty-four additional items. Sixteen items, eight referring to major and eight to occupation, were developed for each of the four stages. The VDC was later extended to include thirty items to assess the implementation aspect of decision-making. Additionally, twenty-four items were incorporated to assess planning, intuitive, and dependent styles.

The ACDM-A was tested at two four-year colleges and one community college. Items were purged if not endorsed by seventy-five percent of the sample or if correlations were equal to or higher than correlations with another scale. Items found to be negatively correlated by decision-making stage and style were combined with the fifty-six original VDC items. The resulting instrument was entitled ACDM-B containing 141 items: seven items for each of the decision-making styles; eight items for each of the three implementation stages; twelve items for each of the four anticipation stages for choice of major; and twelve items for each of the four anticipation stages for choice of occupation.

Scales of the ACDM-B were: (1) Decision Making Style; (2) Decision Making Task: Major; and (3) Decision Making Task: Occupation. Each scale is scored and interpreted independently. The nature of this investigation was concerned primarily with decision-making involving career choice. Therefore, the third scale, Decision Making Task: Occupation (DMT-0), was selected for use in the investigation. This scale essentially corresponded to the occupation dimension of the earlier VDC.

Of the 141 statements on the instrument, forty-eight are devoted to the occupation section. Choices for each item are "agree" or "disagree." Only items marked "agree" are tabulated. Raw scores are obtained on each of four stages or subscales within the scale--exploration, crystallization, choice, and clarification. Individual ACDM-B statements corresponding to the four subscales are identified in the Scoring Key found in Appendix B. Harren's definitions of these subscales, discussed in chapter 2, added behavioral dimensions to the stages of anticipation identified by Tiedeman (1961). Based upon his work with college males in 1966, Harren asserted that most college students clearly were somewhere within the anticipation level of decision-making with regard to career choice.

In addition to raw scores on the four subscales of decision-making, weighted scores are computed for the scale. Weighting controls for acquiescent response set and is

achieved by dividing the total weighted score by the unweighted (summed raw) score. This results in a single value for the scale, representing how far along the continuum of decision-making the student has progressed with regard to the decision-making task of career choice. The rationale for assigned weights is based on the sequence of stages in the decision-making process (Harren, 1976b).

Results of an early administration of the Q-sort instrument by Goodson (1969) were compared by Harren to his own study conducted in 1965. Goodson's study involved freshmen subjects; Harren's 1965 study involved juniors and seniors. Harren (1976b) concluded that freshmen scored highest in exploration with decreasing scores through choice; whereas, juniors and seniors scored highest in choice, with decreasing scores through exploration. There were no significant differences between scores for men and women. The four stages were uncorrelated or moderately negatively correlated. Corresponding stages for tasks, major, and occupation were moderately positively correlated.

Validity and reliability for the VDC were established and reported by Harren (1966, 1972). Additional use of the instrument was reported by Smith and Evans (1973). Effects of three treatment procedures on vocational development were investigated by Smith and Evans in a study of sixty-six freshman and sophomore liberal arts students. The VDC was used as a pretest/posttest to measure any movement along a



continuum of decision-making within each of three groups--students participating in a five-week vocational guidance program, students receiving traditional individual counseling, and students receiving no treatment. The five-week experimental treatment was found to be more effective in increasing vocational development. Statistical significance (.01) was reported on the occupational subscale in favor of the treatment group over the counseling and control groups. The authors recommended that "a goal for many counseling centers should be planning and implementation of vocational development programs to aid masses of undergraduates in learning to reach...career related decisions" (p. 207).

A study by Wachowiak (1972) incorporated the VDC in a pre-posttest situation to compare the effects of model-reinforcement counseling regarding choice of major versus traditional counseling. Scores increased significantly for liberal arts undergraduates participating in the model reinforcement counseling. Similar results were reported by Schneider (1971) observing that the posttest scores for the model-reinforcement and traditional groups were significantly higher than for the control group.

A study using the VDC as a pretest/posttest on a sample of women returning to college (mean age 36) was reported by Gelso (1975). After three groups received various counseling treatments, all groups were found to improve significantly on the occupation scale. Hoffman (1973) reported findings

quite similar to the Gelso study.

Van Atta (1974) was the first investigator to administer the VDC to self-referred clients in a typical counseling center. Previous studies involved either solicited subjects or students in career planning courses. After counseling, posttest scores were found to be significantly higher. No significant differences were found between men and women in the population.

Katz (1975) used the VDC in a pre- and post-situation to examine changes, if any, in the career externship experiences of students in their sophomore, junior, and senior years. No significant differences were found. However, there was evidence of advancement through the decision-making stages from pretest to posttest VDC scores.

The VDC has been used primarily as a dependent variable to measure the effectiveness of various forms of vocational counseling and career exploration programs (Harren, 1976b). On the basis of the previously discussed studies and several unpublished studies, it may be concluded that: (1) experimental group scores increased significantly from pre- to posttesting; (2) scores of control groups remained stable over similar time intervals; and (3) experimental group posttest scores were significantly higher than control group posttest scores.

Data concerning validity and reliability for the ACDM-B were collected at six major universities in the United States

and reported by Harren (1976b). The population size was 285 students. Internal reliability coefficients for the Occupation scale were .78 for exploration, .63 for crystallization, .82 for choice, and .50 for clarification. The unattenuated intercorrelation for exploration and crystallization was .95, and for choice and clarification, .55. However, the two pairs were negatively correlated as expected. For students to have similar raw scores on exploration/crystallization subscales and choice/clarification was theoretically consistent. Analysis of data was performed on the basis of distribution by sex. Although some differences were noted, they appeared to be minor and assumed by Harren to be a function of small sample sizes in some of the cells.

A factor analysis of the data by Harren (1976b) offered further construct validity and added support to the Tiedeman paradigm. The ACDM-B appeared to serve as an appropriate measure to amplify the theory of decision-making stages.

#### Procedures for Data Analysis

An "agree/disagree" scale on the ACDM-B was used to score a respondent's rating of each statement. The forty-eight items on the Decision Making Task: Occupation scale of the instrument corresponded to one of four subscales of decision-making--exploration, crystallization, choice, or clarification. "Agree" responses for statements were summed for each of these four subscales. Subscale totals were

summed to produce a "Total Score" for each individual.

Subscale "agree" totals were weighted according to procedures established by Harren (1966). Weighted scores were derived by multiplying the exploration subscale score by 1, the crystallization score by 2, the choice subscale by 3, and the clarification subscale by 4. The four weighted subscale scores were summed to produce a "Total Weighted Score" for individuals in the control and treatment groups. Therefore, responses to items for the advanced stages of decisionness contributed more to the total score than items for earlier stages.

The "Total Weighted Score" was divided by the "Total Unweighted Score" to calculate a "Decision Making Task: Occupation" score, or DMT-0. This procedure helped control for acquiescent response set, for example, the tendency to agree.

The ACDM-B was administered to the control group and three treatment groups as a pretest, posttest, and post-posttest. Data were compiled and corresponding subscale totals and DMT-0 scores for each respondent were segregated according to control and treatment groups.

An analysis of covariance was applied to the data to adjust posttest effects for the pretest or uncontrolled variable. The pretest subscale and DMT-0 scores were used as covariates to adjust for differences in the initial pretest level and permit the making of direct comparisons among

control and treatment groups. Computer program MANOVA (Multivariate Analysis of Variance) was used to calculate F ratios for group, sex, and interaction effects in the analysis of covariance (Clyde, 1969). This procedure was used to determine whether adjusted posttest scores revealed a significant effect of the treatments (or lack thereof in the control group) on groups of students participating in the investigation.

Given a significant F ratio for the analysis of covariance, a multiple comparisons analysis was applied a posteriori. The Tukey procedure for multiple comparisons was used to examine all possible pairs of groups (Winer, 1962). F ratios were calculated for each of the six possible pairs.

A multivariate analysis of covariance, again using the pretest subscale and DMT-0 scores as covariates, was applied to examine possible differences between the treatment and control groups using weighted subscale scores as multiple criteria. The simultaneous confidence intervals procedure was used to identify specific significant differences for each possible pair of comparisons (Morrison, 1967).

A two-factor analysis of variance with repeated measures on one factor was applied to pretest, posttest, and post-posttest subscale and DMT-0 scores to test for interaction across time (Winer, 1962). Computer program SAS (Statistical Analysis System) was used to calculate group means and F ratios for subscale and DMT-0 scores (Barr,

Goodnight, Sall, and Hellwig, 1976).

The Tukey procedure for multiple comparisons was used to compare posttest and post-posttest means on subscale and DMT-0 scores (Winer, 1962).  $F$  ratios were calculated for each group on each subscale and DMT-0 scores to examine changes from posttest to post-posttest.

The .05 level of significance was used to test all comparisons made in the investigation.

### Summary

The purpose of this chapter was to delineate specific procedures followed in implementing the investigation. The research sample and population were defined and demographic information about the participating institution was presented. The research design and procedures for gathering data were discussed. Instruments used in the Career Exploration Program and in the pretest/posttest/post-posttest were discussed in conjunction with corresponding validity and reliability data. Procedures for analyzing data were summarized. Results of the investigation are reported in chapter 4.

## Chapter 4

### ANALYSIS OF DATA

The data obtained in this investigation were subscale and overall (DMT-0) scores on the ACDM-B Decision Making Task: Occupation scale. A copy of the instrument is available in Appendix B. The ACDM-B was administered as a pretest, a posttest, and a post-posttest at six week intervals. Respondents were members of one of four experimental groups. Group 1 served as a control group. Group 2 received an orientation to career decision-making by Dr. Hall, author of the HALL, and then completed the HALL inventory. Group 3 participated in interviews with college alumni to discuss individual career interests. Group 4 received the same orientation to career decision-making as Group 2, completed the HALL, and participated in interviews with college alumni to discuss career interests.

Responding to the pretest were 160 of the randomly selected students; responding voluntarily to the posttest were 85.6 percent of the pretest respondents (137/160); responding voluntarily to the post-posttest were 73 percent of the posttest respondents (100/137).

A multivariate analysis of covariance was performed using the pretest ACDM-B subscales (exploration, crystallization, choice, and clarification) and overall DMT-0 scores as covariates. Computer program MANOVA (Multivariate

Analysis of Variance) was used to test homogeneity of regression, within cells regression, multivariate analysis of covariance, and univariate analysis of covariance. Pretest and posttest means for groups according to sex are reported in Table 1. Pretest and posttest group mean differences are reported in Table 2. Adjusted posttest group means are reported in Table 3.

Tests for Homogeneity and Within Cells  
Regression on Posttest Variables

A multivariate test of homogeneity of regression in all cells, using the Wilk's Lambda criterion comparing groups, revealed no significance ( $F = 1.032, p > .05$ ). Examination of the  $F$  ratios for univariate tests on the subscales also revealed no significance. A univariate test for all cells on the DMT-0 scores was not significant ( $F = 1.879, p > .05$ ). Non-significant regression indicated that the analysis of covariance was an appropriate procedure for use in the analysis.

A multivariate test of within cells regression, again using the Wilk's Lambda criterion comparing the groups, revealed significance ( $F = 28.962, p < .001$ ). Examination of the  $F$  ratios for univariate tests on the subscales revealed significance on each dependent variable.

Exploration ( $F = 61.313, p < .001$ )

Crystallization ( $F = 38.654, p < .001$ )



Table 1

## Pretest and Posttest Group Means

Group	n	Subscales											
		<u>Exploration</u>		<u>Crystallization</u>		<u>Choice</u>		<u>Clarification</u>		<u>DMT-0</u>			
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post		
1 Male	16	4.938	5.625	6.250	6.625	7.938	7.938	7.250	6.750	2.644	2.584		
1 Female	20	5.600	6.200	6.950	6.750	8.750	7.700	7.500	7.050	2.626	2.562		
2 Male	16	7.313	6.750	7.438	7.188	7.750	7.500	8.563	9.063	2.572	2.589		
2 Female	20	7.600	7.400	7.100	7.350	6.000	6.600	7.350	8.100	2.470	2.526		
3 Male	18	7.722	7.722	6.500	6.556	6.333	7.667	7.278	8.056	2.444	2.534		
3 Female	13	8.000	8.231	7.923	7.769	6.000	6.385	7.692	7.846	2.433	2.445		
4 Male	16	6.188	4.750	7.063	7.063	7.500	9.250	6.563	7.688	2.536	2.706		
4 Female	18	6.722	6.611	6.500	6.278	7.278	8.000	7.500	8.111	2.552	2.612		

Table 2  
Pretest and Posttest Group Mean Differences

Group	n	Subscales					DMT-0
		Exploration	Crystallization	Choice	Clarification		
1 Male	16	.687	.375	.000	-.500		-.060
1 Female	20	.600	-.200	-1.050	-.450		-.064
2 Male	16	-.563	-.250	-.250	.500		.017
2 Female	20	-.200	.250	.600	.750		.056
3 Male	18	.000	.056	1.334	.778		.090
3 Female	13	.231	-.154	.385	.154		.012
4 Male	16	-1.438	.000	1.750	1.125		.170
4 Female	18	-.111	-.222	.722	.611		.060

Table 3  
Adjusted Posttest Group Means

Group	n	Subscales					DMT-0
		Exploration	Crystallization	Choice	Clarification		
1 Male	16	7.157	7.390	7.064	6.972	2.501	
1 Female	20	7.113	6.952	6.536	6.949	2.494	
2 Male	16	6.245	6.746	7.176	8.301	2.562	
2 Female	20	6.675	7.091	7.544	8.217	2.577	
3 Male	18	7.005	6.634	8.407	8.174	2.606	
3 Female	13	7.062	6.929	7.438	7.711	2.525	
4 Male	16	5.147	7.108	9.129	8.209	2.707	
4 Female	18	6.697	6.541	7.914	8.088	2.600	

Choice	( $F = 55.063$ , $p < .001$ )
Clarification	( $F = 18.148$ , $p < .001$ )

A univariate test on the DMT-0 scores also was significant ( $F = 181.288$ ,  $p < .001$ ). Based on these findings, a significant correlation existed between the pretest subscales (covariates) and posttest subscales, with a significant adjustment on posttest scores for all variables.

#### Analysis of Adjusted Posttest Subscale Scores

A summary of the multivariate analysis of covariance is given in Table 4. The analysis revealed a significant group effect ( $F = 3.359$ ,  $p < .001$ ) on the linear combination of the four dependent variables. There was no significant difference attributable to the sex effect or to the group-sex interaction effect.

The univariate  $F$  ratios for the subscales revealed significance on three of the variables.

Exploration	( $F = 3.553$ , $p = .016$ )
Choice	( $F = 6.734$ , $p < .001$ )
Clarification	( $F = 4.428$ , $p = .005$ )

Inspection of the univariate tests indicated that the differences among groups were attributable to subscales for exploration, choice, and clarification.

The simultaneous confidence intervals procedure was used to determine which groups differed and which subscales contributed to the differences. When the simultaneous confidence interval did not span the point zero, the

Table 4  
Summary of the Multivariate Analysis of Covariance

Source	<u>df</u> <sub>Hypothesis</sub>	<u>df</u> <sub>Error</sub>	<u>F</u>	<u>p</u>
Group	12.0	323.073	3.359	.001
Sex	4.0	122.000	1.933	.109
Group-Sex Interaction	12.0	323.073	1.313	.209
Regression	16.0	373.354	28.962	.001

difference between the respective groups was statistically significant ( $p < .05$ ). When the difference did span zero, the difference was not significant.

Posttest adjusted mean differences and simultaneous confidence intervals are reported in Table 5 for each possible pair of group comparisons on the four subscales. Groups 1 and 4 differed significantly ( $p < .05$ ) on the subscale choice. Groups 1 and 2 differed significantly ( $p < .05$ ) on the subscale clarification.

#### Analysis of Adjusted Posttest DMT-0 Scores

A univariate analysis of covariance was performed on the DMT-0 scores by the MANOVA computer program. The analysis is summarized in Table 6. As in the multivariate analysis, there was a significant group effect ( $F = 5.810$ ,  $p < .001$ ), but no significant sex or group-sex interaction effects.

A multiple comparisons analysis of adjusted posttest DMT-0 scores was performed on each possible pair of groups using the Tukey procedure. Adjusted mean differences and  $Q$  values are reported in Table 7. The analysis revealed that groups 1 and 4 differed significantly on DMT-0 scores ( $Q = 5.8046$ ,  $p < .05$ ).

Table 5

Posttest Simultaneous Confidence Intervals  
on Subscales

Groups	Adjusted Mean Difference	Interval
Exploration		
1 vs. 2	.649	( -.6179, 1.9159)
1 vs. 3	.104	( -1.2129, 1.4209)
1 vs. 4	1.166	( -.1192, 2.4512)
2 vs. 3	.545	( -.7719, 1.8619)
2 vs. 4	.517	( -.2726, 1.8022)
3 vs. 4	1.062	( -.2726, 2.3966)
Crystallization		
1 vs. 2	.164	( -.9855, 1.3135)
1 vs. 3	.389	( -.8058, 1.5838)
1 vs. 4	.339	( -.8270, 1.5050)
2 vs. 3	.180	( -1.0148, 1.3748)
2 vs. 4	.130	( -1.1069, 1.2960)
3 vs. 4	.050	( -1.1609, 1.2609)
Choice		
1 vs. 2	.610	( -.6534, 1.8734)
1 vs. 3	1.229	( -.0843, 2.5423)
1 vs. 4	1.715	( .4333, 2.9967)*
2 vs. 3	.619	( -.6943, 1.9323)
2 vs. 4	1.105	( -.1767, 2.3867)
3 vs. 4	.486	( -.8450, 1.8170)
Clarification		
1 vs. 2	1.295	( .0508, 2.5392)*
1 vs. 3	1.021	( -.2723, 2.3143)
1 vs. 4	1.186	( -.0762, 2.4482)
2 vs. 3	.274	( -1.0193, 1.5673)
2 vs. 4	.109	( -1.1532, 1.3712)
3 vs. 4	.165	( -1.1457, 1.4757)

\* $p < .05$

Table 6  
Summary of the Univariate Analysis of Covariance

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Group	3	.403	.134	5.810	.001
Sex	1	.063	.063	2.701	.103
Group-Sex Interaction	3	.086	.029	1.245	.296
Regression	1	4.196	4.196	181.288	.001
Within Cells	128	2.962	.023		



Table 7

Multiple Comparisons of Groups on Adjusted Posttest DMT-0 Scores Using the Tukey Procedure

Groups	Adjusted Mean Difference	<u>Q</u>
1 vs. 2	.073	2.8077
1 vs. 3	.075	2.8846
1 vs. 4	.153	5.8046*
2 vs. 3	.002	.0769
2 vs. 4	.080	3.0000
3 vs. 4	.078	3.0000

\*Critical value = 3.69,  $p < .05$

Analysis of Pretest, Posttest, and Post-posttest  
Subscale and DMT-0 Scores

A two-factor analysis of variance with repeated measures on one factor was performed on the subscale and DMT-0 scores. This was done to determine if groups differed in trends over time. Group means for the pretest, posttest, and post-posttest respondents are reported in Table 8. Means for subscale exploration are plotted in Figure 2. The interaction among the groups on subscale exploration was significant ( $F = 8.40, p < .0001$ ) over the three tests.

Group means for subscale crystallization on each test are plotted in Figure 2. The interaction among the groups was not found to be significant.

Group means for subscale choice on each test are plotted in Figure 2. The interaction among groups was significant ( $F = 4.71, p = .0002$ ).

Group means for subscale clarification on each test are plotted in Figure 2. The interaction among groups was significant ( $F = 2.95, p = .0088$ ).

Group means for the DMT-0 scores on each test are plotted in Figure 3. The interaction among groups was significant ( $F = 7.33, p < .0001$ ).

Comparisons of Posttest and Post-posttest Scores

The Tukey multiple comparisons procedure was applied to the posttest and post-posttest means for each subscale and

Table 8

Group Means for the Pretest, Posttest,  
and Post-posttest

Subscales and DMT-0	Group			
	1 <u>n</u> = 24	2 <u>n</u> = 23	3 <u>n</u> = 26	4 <u>n</u> = 27
Pretest				
Exploration	6.2917	7.0000	7.8462	6.6296
Crystallization	7.3333	7.0000	7.3462	6.7407
Choice	7.9583	7.2609	6.0000	7.2963
Clarification	7.4583	8.3913	7.2308	7.1111
DMT-0	2.5654	2.5773	2.4227	2.5330
Posttest				
Exploration	7.2500	6.7391	7.7692	5.5926
Crystallization	7.4583	7.2173	7.1923	6.6667
Choice	7.1250	7.4783	7.0000	8.5185
Clarification	7.0833	8.9565	7.7308	8.0741
DMT-0	2.4729	2.6165	2.4873	2.6722
Post-posttest				
Exploration	7.3333	6.6957	6.1154	5.7778
Crystallization	7.0833	7.1739	7.9231	6.6667
Choice	7.5000	7.1739	6.3077	8.5926
Clarification	6.6667	8.8696	7.1923	7.8149
DMT-0	2.4588	2.6083	2.5104	2.6474

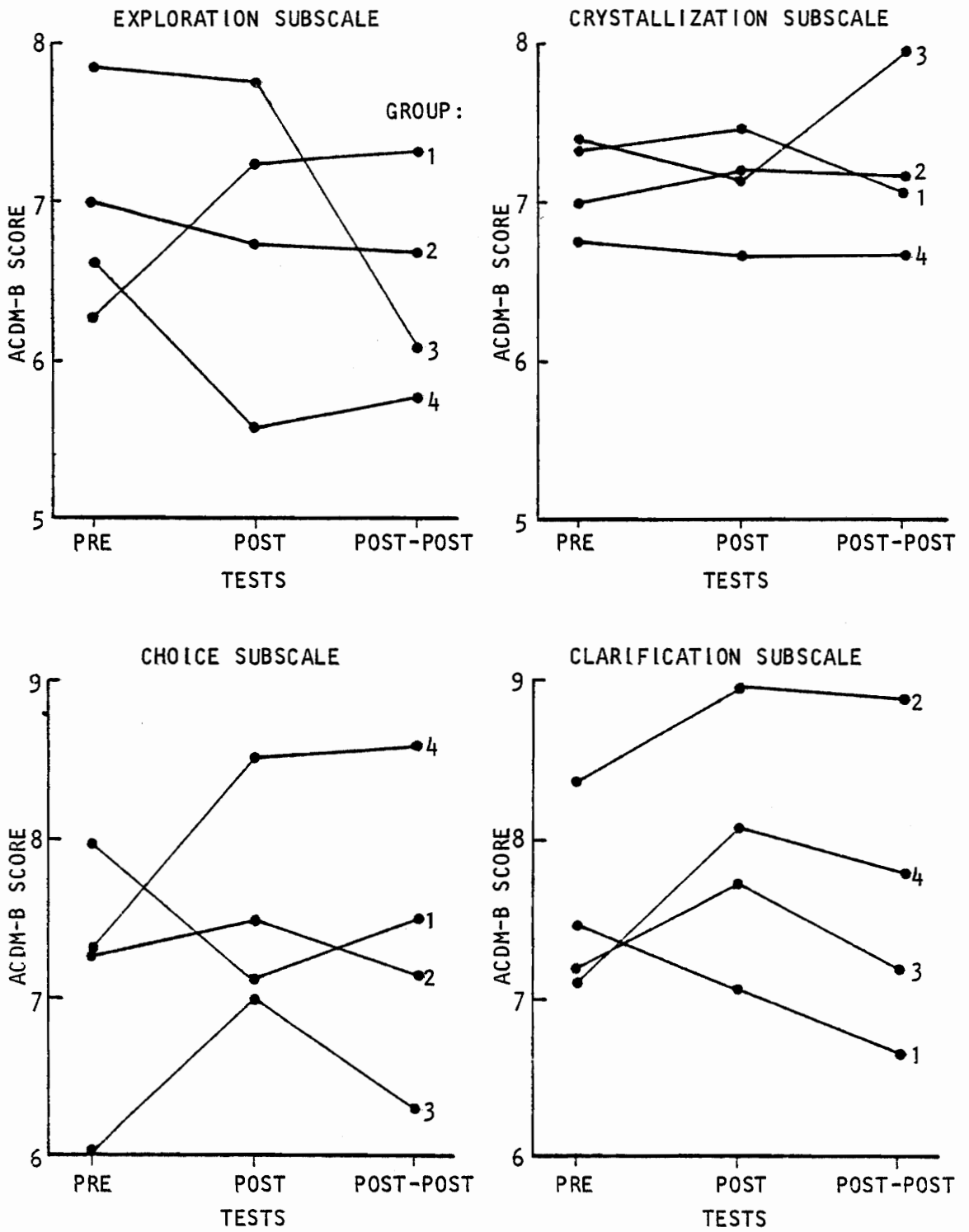


Figure 2

Plotted Group Means for Subscales on the Pretest, Posttest, and Post-posttest

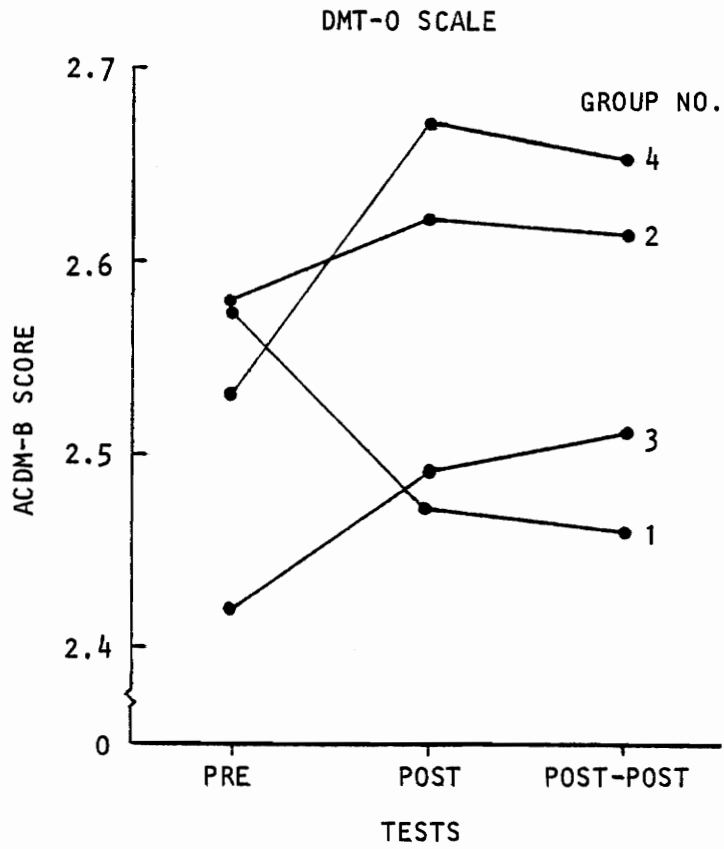


Figure 3

Plotted Group Means for the DMT-0 on the  
Pretest, Posttest, and Post-posttest

the DMT-0 scores to determine if any group exhibited significant change. Group 3 was found to decrease significantly from the posttest to the post-posttest on subscale exploration ( $Q = 5.0440$ ,  $p < .05$ ). No other groups increased or decreased significantly on the subscale or DMT-0 scores.

#### Subjective Student Evaluation of Interviews with Alumni

Students in Groups 3 and 4 were each provided an open-ended evaluation form (Appendix I) on which to offer comments concerning their participation in interviews with alumni. Twenty-eight evaluation forms were submitted voluntarily to the Office of the Dean of Students. All forms contained only favorable comments with regard to the interview experience. Several such comments have been excerpted and listed below.

"This meeting with the personnel manager renewed my interest in personnel. I am seriously considering an occupation in personnel."

"He [medical technologist] didn't try to tell us that medical technology was the best field, but instead he told us the advantages and disadvantages of the career....I think that it was worth the time and that this program is very good and should be continued."

"The interview was very enlightening and informative.... I was allowed to make rounds with him [physician], sit in on examinations of his patients, and allowed to actually go

into the OR and watch him perform with other surgeons."

"[The broadcaster said] if we were almost sure this was the field we wanted to go into, we could get an internship there [television station]....It was a good interview and I'm grateful for the chance I've been given."

"This idea of interviewing people in your job interest area is extremely helpful. I think many people can benefit from this experience."

"Mr. X was well prepared, answered all questions very openly, and brought forth some very important aspects of management. It would have been extremely difficult for anyone to have been more helpful."

"I learned a lot from both of the men [hospital administrators]. They were very pleasant and patient."

"I really enjoyed the experience."

"The interview was concluded with a complete tour of the laboratory facilities at Community Hospital and explanations of many procedures and technical equipment used in the lab. I enjoyed myself immensely and my interest in medical technology is even greater."

### Summary

Analyses of group data for the ACDM-B pretest, posttest, and post-posttest were reported in this chapter. Pretest and posttest means were reported in Table 1. Pretest and posttest group mean differences were reported for subscale

and DMT-0 scores in Table 2. Posttest adjusted group means were reported in Table 3. The multivariate analysis of covariance for subscale scores, summarized in Table 4, revealed a significant group effect (.001). The simultaneous confidence intervals procedure for subscale posttest scores, summarized in Table 5, revealed significant differences (.05) between Groups 1 and 4 on subscale choice and between Groups 1 and 2 on subscale clarification.

The univariate analysis of covariance for adjusted DMT-0 posttest scores, summarized in Table 6, revealed a significant group effect (.001). The multiple comparisons procedure performed on group adjusted DMT-0 posttest scores, summarized in Table 7, revealed a significant difference (.05) between Groups 1 and 4. A two-factor analysis of variance with repeated measures on one factor for subscale and DMT-0 scores in all tests revealed significant group differences in trends over time for subscales exploration (.0001), choice (.0002), and clarification (.0088) and for DMT-0 scores (.0001). A multiple comparisons procedure applied to posttest and post-posttest group means for subscale and DMT-0 scores revealed a significant decrease (.05) for Group 3 on subscale exploration. Group means for subscales on the pretest, posttest, and post-posttest were plotted in Figure 2. Group means for DMT-0 scores were plotted in Figure 3.

Results of a subjective evaluation of the alumni interviews in which Groups 3 and 4 participated also were



reported in this chapter. A summary of the investigation, a discussion of the findings, and recommendations are reported in chapter 5.

## Chapter 5

### SUMMARY, DISCUSSION, AND RECOMMENDATIONS

#### Summary

The thesis of this investigation was that a systematic program of career exploration can improve the decidedness of college freshmen with regard to career choice. The three treatments employed in the program were:

- (a) an orientation to decision-making theory, followed by the self-appraisal of needs and values;
- (b) interviews with alumni of the college; and
- (c) a combination of treatments (a) and (b).

The investigation was conducted to provide empirical evidence regarding the value of these strategies for students new to the college environment.

The population selected for the investigation were freshmen enrolled at Roanoke College in Salem, Virginia, during the fall of 1977. One hundred-sixty students in the freshman class were selected randomly and assigned to one of four equal size experimental groups ( $n = 40$ ). The first group (Group 1) served as a control group. Group 2 received an orientation to career decision-making theory and completed the HALL. Students in Group 3 each identified a general or specific career interest and interviewed an alumnus of Roanoke College employed in a corresponding career area.

Students in Group 4 received the orientation to career decision-making theory, completed the HALL, and interviewed Roanoke College alumni to obtain more information about specific careers. The orientation to career decision-making theory was presented to Groups 2 and 4 by Dr. Lacy Hall, author of the HALL inventory. Alumni, visited by students in Groups 3 and 4, previously had volunteered to meet with students and provide an overview of job responsibilities and characteristics.

Empirical data were obtained to evaluate the participation by Groups 2, 3, and 4 in the components of the Career Exploration Program, comparing them to the control group. The Decision Making Task: Occupation portion of the ACDM-B was used in a pretest/posttest/post-posttest design to detect changes in the career decidedness of students in each group. The instrument was scored on four subsequently weighted subscales: exploration, x<sup>1</sup>; crystallization, x<sup>2</sup>; choice, x<sup>3</sup>; and clarification, x<sup>4</sup>. From these were derived overall DMT-0 scores.

The pretest was administered during the fifth week of the semester. Two sessions were held during the sixth week at which Dr. Hall presented an orientation to career decision-making theory and administered the HALL to Groups 2 and 4. Interviews with alumni of Roanoke College were conducted by students in Groups 3 and 4 during the seventh through the ninth weeks. The posttest was administered during the

eleventh week of the semester. The instrument was administered as a post-posttest six weeks later at the beginning of the interterm which followed the Christmas holiday recess.

After the completed pretests ( $n = 160$ ) and posttests ( $n = 137$ ) were scored, an analysis of covariance was applied. The pretest subscale and DMT-0 scores were used as covariates for the adjustment of posttest scores.

Multivariate and univariate tests of homogeneity of regression revealed no significance in the posttest analysis. This indicated that the analysis of covariance was an appropriate analytical procedure for the investigation. Multivariate and univariate tests of within cells regression were significant, indicating a significant relationship between pretest and posttest scores, and, thus, the appropriateness of the analyses of variance and covariance.

In the multivariate analysis of covariance, group, sex, and group-sex interaction effects were tested. A significant group effect ( $p < .001$ ) on the linear combination of four dependent variables was found. No significant differences were attributable to sex or group-sex interaction.

Univariate  $F$  ratios derived in the multivariate analysis of covariance revealed significance on three of the subscales: exploration ( $p = .016$ ); choice ( $p < .001$ ); and clarification ( $p = .005$ ). The simultaneous confidence intervals procedure was used to determine which subscales contributed to specific group differences. Groups 1 and 2

differed significantly ( $p < .05$ ) on the subscale clarification. Groups 1 and 4 differed significantly ( $p < .05$ ) on the subscale choice.

A univariate analysis of covariance using the DMT-0 scores revealed a significant group effect ( $p < .001$ ). A multiple comparisons analysis using the Tukey procedure was performed on each possible pair of groups. Groups 1 and 4 were found to differ significantly ( $p < .05$ ).

A two-factor analysis of variance with repeated measures on one factor was performed on subscale and DMT-0 scores for pretest, posttest, and post-posttest results. The interaction of group effects across time was significant for three of the subscales: exploration ( $p < .0001$ ); choice ( $p = .0002$ ); and clarification ( $p = .0088$ ). The interaction of groups across time for the DMT-0 scores also was found to be significant ( $p < .0001$ ). Thus, these data indicated significant differences among groups in trends over time.

A multiple comparisons analysis, using the Tukey procedure, revealed a significant decrease ( $p < .05$ ) on subscale exploration in Group 3 from posttest to post-posttest. No other groups were found to have increased or decreased significantly from the posttest to post-posttest.

The univariate and multivariate analyses of covariance, the simultaneous confidence intervals procedure, and the Tukey multiple comparisons procedure were used to identify group differences applicable to the specific hypotheses

stated in chapter 1. The findings of the study are summarized below.

Hypothesis 1: Students receiving the orientation to career decision-making theory and completing the HALL will exhibit significantly greater career decidedness than students not participating in the Career Exploration Program. Adjusted posttest means for Group 2 were found to be significantly higher ( $p < .05$ ) than control group (Group 1) means on subscale clarification of the ACDM-B. Therefore, the students in Group 2 exhibited significantly greater career decidedness than students not participating in the Career Exploration Program. The null hypothesis was rejected and Hypothesis 1 was accepted.

Hypothesis 2: Students conducting interviews of college alumni to discuss specific careers will exhibit significantly greater career decidedness than students not participating in the Career Exploration Program. Adjusted posttest means for Group 3 were not found to differ significantly from control group (Group 1) means on subscale or DMT-0 comparisons. Consequently, the null hypothesis was accepted and Hypothesis 2 could not be proved. <sup>?</sup>

Hypothesis 3: Students receiving the orientation to career decision-making theory, completing the HALL, and conducting interviews of college alumni to discuss specific careers will exhibit significantly greater career decidedness than students not participating in the Career Exploration Program.

Adjusted posttest means for Group 4 were found to be significantly higher ( $p < .05$ ) than control group (Group 1) means. Differences occurred on subscale choice and DMT-0 comparisons of the ACDM-B. Therefore, the students in Group 4 exhibited significantly greater career decidedness than students not participating in the Career Exploration Program. The null hypothesis was rejected and Hypothesis 3 was accepted.

Analysis of the post-posttest responses revealed a significant interaction among groups in trends over the twelve-week period of the investigation. No group, however, was found to improve significantly from the posttest to the post-posttest.

### Discussion

The primary objective of the Career Exploration Program was to bring about and measure attitudinal changes in freshmen with regard to decidedness in career decision-making. The hypothesized direction for changes was toward greater decidedness. The four-group design of the study enabled the writer to look at the effects of the components of the program in an individual as well as collective manner. A control group provided a population equal in size to the treatment groups for the purpose of making direct comparisons to test the hypotheses. The use of the ACDM-B in a pretest/posttest/post-posttest design provided subscale scores and overall weighted scores for more in-depth analyses. The

variety of statistical analyses applied in the investigation revealed several interesting findings among groups on subscale and DMT-0 means.

The three treatment groups (Groups 2, 3, and 4) each exhibited movement in the hypothesized direction as revealed by inspection of the pretest to posttest means (Table 1) and mean differences (Table 2). As would be expected from the theory supporting the thesis of the investigation, the greatest change in career decidedness was exhibited by Group 4 which had the benefit of personal examination of attitudes, needs, and values, in addition to visits with alumni to discuss career interests. Groups 2, 3, and 4 exhibited mean differences toward greater decidedness through the four subscales. Conversely, Group 1 (control) exhibited the least career decidedness, with higher scores on exploration and progressively lower scores on crystallization, choice, and clarification.

A trend also was evident in examination of the posttest adjusted means (Table 3). Adjusted means for Group 1 were about the same across the four subscales. DMT-0 adjusted means for Group 1 were the lowest of the four groups. Groups 2, 3, and 4 each exhibited a rise across the subscales. Group 4 exhibited the greatest increase from exploration to the higher subscales. Additionally, Group 4 means were significantly higher than Group 1 means as demonstrated by the multiple comparisons analysis (Table 7).



The inclusion of sex as an independent variable in the analysis was done to determine if a factor, other than the treatments, influenced the results significantly. Sex differences in each group were not significant, nor was interaction among groups and sex. These findings paralleled the previous findings of Harren (1976b) in his work with the ACDM-B.

The multivariate and univariate analyses for the four subscales revealed a significant adjustment on posttest scores. Therefore, there was a relationship between pretest and posttest scores. However, the posttest results, adjusted for pretest differences, indicated that Groups 2, 3, and 4 experienced attitudinal changes toward greater career decidedness. Students in these three groups agreed with more statements corresponding to subscale choice and clarification. According to Tiedeman and O'Hara (1963), choice enables individuals to state what they want to do, even though specific goals may range from tentative to quite firm. Clarification involves further analysis of choice, providing an opportunity for individuals to review and resolve doubts and uncertainties about career choices.

Group 1, the control, failed to increase in career decidedness on pretest and posttest responses to the ACDM-B. Group 2, having the self-appraisal experience, exhibited a significant increase in decidedness over Group 1 from the pretest to posttest on subscale clarification. A similar

difference, however, was not indicated by the analysis of Groups 1 and 2 using the overall DMT-0 scores. Yet, the finding on one subscale was sufficient to attribute group change to the orientation in career decision-making and completion of the HALL.

A decisive difference was observed between Groups 1 and 4. This difference occurred on subscale choice and on the multiple comparisons analysis of DMT-0 scores. Higher group means for Group 4 were attributed to the orientation in career decision-making and completion of the HALL, followed by participation in interviews with alumni to discuss specific careers.

Group 3, which participated in the alumni interviews only, demonstrated change toward greater decidedness, yet not at a statistically significant level over Group 1. Students in both Groups 3 and 4 were provided Interview Guides, the content of which corresponded to the interpretive scales of the HALL. However, Group 3 did not experience the decision-making orientation or participate in a self-appraisal experience by completing the HALL, scoring it, and interpreting the results using the accompanying Interpretive Folder. This interpretive publication provided an explanation of each scoring dimension and the meaningfulness of the respondents' scores. Not only were students in Group 4 more familiar with the terms in the Interview Guide and Interpretive Folder, they should have better understood their needs and values as

a result of the inventory experience. The significant increase exhibited by Group 4 suggests that the self-appraisal experience and familiarity with the HALL scoring dimensions served as catalysts to structure the interviews with alumni so that the information obtained was more meaningful. Thus, it may be concluded that understanding personal needs, values, attitudes, and interests as preparation for career information-seeking results in greater career decidedness.

The adjusted posttest mean differences for groups were reported in conjunction with the simultaneous confidence intervals analysis (Table 5). Greater adjusted mean differences were observed for Groups 1 vs. 4 and 3 vs. 4 on exploration; 1 vs. 3, 1 vs. 4, and 2 vs. 4 on choice; and 1 vs. 2, 1 vs. 3, and 1 vs. 4 on clarification. As might be expected, means for Groups 1 and 3 were considerably higher on subscale exploration than for Groups 2 and 4. Conversely, on subscales choice and clarification, means for Groups 2 and 4 tended to be higher than for Groups 1 and 3. The results for unadjusted posttest means, plotted in Figure 2, illustrate these conclusions.

In the test of repeated measures, the groups differed significantly in trends over time on three of four subscales and the DMT-0 scores. It is particularly interesting to note subscale changes from the posttest to post-posttest in Figure 2 and the resulting intersecting lines between plotted means. On subscale exploration, Groups 1, 2, and 4 essentially were

unchanged, while Group 3 decreased significantly, resulting in movement toward greater decidedness. The interaction on subscale crystallization was not significant; however, Group 3 increased sharply over the other groups. On subscale choice, Groups 1 and 4 increased slightly and Groups 2 and 3 decreased; again, interaction was significant. On subscale clarification all four groups decreased.

Although Group 1 increased somewhat from posttest to post-posttest on two subscales, the increase was offset by decreases on two other subscales. The fact that Groups 2 and 3 declined on practically every subscale indicates that there was less tendency to agree with ACDM-B statements by those groups. The decline by Group 2 on the four subscales of the post-posttest was very slight, indicating probable retention of the orientation to decision-making and self-appraisal experiences.

Group 4 was the only group that increased on three of the four subscales. However, more responses by Group 4 to exploration statements and less to clarification statements on the post-posttest resulted in a slight decrease in decidedness over the six weeks following the posttest. Declines such as those by Groups 2 and 4 normally might be expected to occur in similar situations involving limited treatments in a brief time span. This fact suggests the appropriateness of continued work in the area of realistic self-appraisal of attitudes, needs, and values, along with accurate assessment

of interests in various careers.

Inspection of the plotted means for the DMT-0 scores on the three tests (Figure 3) also revealed several interesting findings. Students in Group 4 experienced the highest increase over the other groups on the posttest. This increase essentially was maintained on the post-posttest, administered during the interterm. Groups 2 and 3 experienced similar increases from pretest to posttest with Group 3 gaining slightly more than Group 2. Group 2 maintained approximately the same level from posttest to post-posttest, while Group 3 clearly increased. The steeper gain by Group 3 over Group 2 on the posttest, followed by further increase on the post-posttest, indicates that the interviews alone were beneficial to the students. However, without the structured experience in self-appraisal, apparently a longer interval of time was needed by Group 3 to internalize information obtained in interviews and relate it to personal needs and values. This is evidence of a delayed effect of treatment.

Group 1, not experiencing the components of the Career Exploration Program, actually declined in overall career decidedness during the twelve weeks following the pretest. This finding suggests that students in a new college environment may be confronted with greater opportunities for exploration and self-appraisal than afforded by previous environments. Frequently these students experience increasing uncertainty with regard to choice of major and ultimately

choice of a career. Contrasting the results for Group 1 with results for the other three groups points to the appropriateness of providing some structured experiences for new students, enabling them to focus on career decision-making concerns early in college.

The findings for the three groups which participated in the Career Exploration Program provide evidence of the positive benefits of this type of structured experience. The systematic process of self-appraisal and exploration of career interests in a non-campus setting serves to reduce uncertainty about career choice. As a result of this experience, students are better equipped to integrate information about self with increased knowledge about careers and then move closer to, arrive at, or confirm a career decision.

The empirical evidence from this investigation supported the continuation of both components of the Roanoke College Career Exploration Program. The combination of decision-making orientation, self-appraisal of needs and values, and alumni interviews proved to be mutually beneficial strategies. Alumni of the college who participated as Career Volunteers appeared to be excellent resources for career information, more so than conventional counseling approaches and materials used previously by the college.

Too often, institutions of higher education provide little, if any, assistance to students in the area of relating personal needs and values to information about careers.

Instead, attention is devoted to having students assess career interests based upon their often limited knowledge of careers. Most college freshmen are able to identify accurately their career interests, however tentative the interests might be. Indeed, colleges and universities should concern themselves to a greater extent with assisting students to explore, rather than simply to identify, career interests. Appraisal of self further serves to amplify personal needs, values, and attitudes that pertain to career interests.

There are implications from this investigation for systematic intervention in the process of career decision-making early in the college career to enhance the level of students' decidedness. Accurate self-exploration and accurate information regarding the career activities of individuals in the world of work can serve as catalysts for further exploration activities. Intervention in the freshman year may result in increased realism in viewing one's potential development. Students should be stimulated to continue exploration activities--through associations with others to learn more about careers, through part-time or summer employment related to career interests, or through college course selections and related campus activities. Exploration ultimately should extend beyond the college years. Individuals should continue to appraise needs and interests, constantly evaluating their occupational activities and the personal satisfaction derived from those activities.

### Recommendations

1. While the results of this investigation are specific to Roanoke College with its primarily liberal arts orientation, there are philosophical implications for applying these same strategies at other institutions, perhaps completely different in mission and character. A Career Exploration Program might be implemented at a large public comprehensive university and the results compared to the findings of the Roanoke College program.

2. Further research should be pursued to investigate the longevity of the effect of treatment after one year.

3. The Career Exploration Program should be expanded to include students of all undergraduate classes who wish to participate. A study of the career decidedness of students in each class should be the subject of investigation.

4. Other instruments, such as the Career Maturity Inventory, should be used in a pretest/posttest design in the Career Exploration Program for comparison to the ACDM-B.

5. The Career Exploration Program might be altered to include the option of having alumni visit the campus to meet with students. The posttest results of students visiting alumni at work locations should be compared with results of students meeting with alumni on the campus.

6. The feasibility of incorporating the components of the Career Exploration Program in the standard orientation



program for all freshmen should be investigated. Such a study might involve greater utilization of faculty advisors in the career decision-making orientation and HALL inventory portions of the program.

7. The feasibility of expanding the program to include alumni in other geographic areas should be studied. This potentially would enable students to visit alumni in or near the students' home areas.

8. The feasibility of expanding the alumni visits to several-day externships should be investigated. The impact of more contact time with alumni on the career decidedness of students might be compared to the results of those students who experience shorter visits of several hours.

9. The feasibility of integrating the components of the Career Exploration Program into the college curriculum in the form of classes, short courses, seminars, independent study, or discussion groups should be investigated.

10. The accuracy of career decision-making resulting from self-appraisal and career information-seeking in the freshman year should be investigated. Through a follow-up study, a comparison might be made between students' career choices after participating in the Career Exploration Program and career choices at the point of job entry after college.

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APPENDIX A

REPORT OF THE COOPERATIVE INSTITUTIONAL RESEARCH  
PROGRAM OF THE AMERICAN COUNCIL ON  
EDUCATION FOR ROANOKE COLLEGE

## UNIVERSITY OF CALIFORNIA, LOS ANGELES

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

COOPERATIVE INSTITUTIONAL RESEARCH PROGRAM  
OF THE AMERICAN COUNCIL ON EDUCATION AND THE  
UNIVERSITY OF CALIFORNIA AT LOS ANGELES

GRADUATE SCHOOL OF EDUCATION  
LOS ANGELES, CALIFORNIA 90024

December 16, 1977

Dear President:

Enclosed is a copy of the summary of data provided by your fall 1977 entering freshmen for the ACE/UCLA Cooperative Institutional Research Program. One duplicate copy of this report is being sent to your institutional representative. The report shows weighted normative data based on all students entering comparable types of institutions. Your data are shown in the first three columns of percentages on each page, and the norms are shown in the last three columns.

Please note that the first report is based only on those students who indicated that they were first-time, full-time freshmen. If any part-time and transfer students filled out the questionnaire, separate reports are provided for both these groups. The part-time freshman data and the transfer data are on the same pages--the part-time data are the first three columns and the transfer data are the last three columns. There is no national normative data for the part-time and transfer students. If both part-time freshmen and transfer students filled out the questionnaire the two reports are on the same pages. If you requested separate reports on subgroupings of your freshmen, additional reports are also enclosed. If optional items available on the form were used, each report will be 17 pages in length; otherwise, they will be 15 pages long.

A total of 548 institutions participated in the survey. Since we have reason to believe that the results from 174 of these institutions are not representative of their entire freshman class because of the particular method used to collect the data, the weighted national norms are based only on the data from 374 institutions (77 two-year colleges, 250 four-year colleges and 47 universities).

In a few weeks you will be receiving a copy of the 1977 edition of The American Freshman, which will contain normative data for 38 different groupings of institutions. Information about the national norms will be made available to education writers for A.M. release Sunday, January 22. If you wish to prepare press information from the data for your institution, your cooperation is requested in observing the January 22 release time.

We should, of course, be very much interested in any observations or comments you care to make about this report.

Sincerely yours,

A handwritten signature in cursive script that reads "Alexander W. Astin".

Alexander W. Astin  
Professor and Director

Enclosure

**Cooperative Institutional Research Program**

conducted jointly by the  
American Council on Education and the University of California, Los Angeles  
**SUMMARY OF DATA ON ENTERING FRESHMEN FOR FALL ( 1977 )**

Page 1 of 15

**BOHMONY COLLEGE**

Description	Number of Respondents		BOHMONY COLLEGE		4-18 Colleges Natl. Norms		
	Male	Female	Male	Female	Male	Female	
	(Percentages)						Total
<b>Number of Students (*)</b>	40.9	59.1	100.0		49.1	50.9	100.0
<b>Year Graduated from High School</b>							
1977	99.0	99.3	99.2		93.8	95.6	94.7
1976	0.0	0.7	0.4		3.1	2.0	2.5
1975	0.0	0.0	0.0		0.7	0.5	0.6
1974 or earlier	1.0	0.0	0.4		1.3	1.0	1.2
U.S. equivalency (G.E.D. test)	0.0	0.0	0.0		0.7	0.5	0.6
never completed high school	0.0	0.0	0.0		6.3	0.4	0.4
<b>Age by December 31, 1977</b>							
16 or younger	0.0	0.7	0.4		0.2	0.2	0.2
17	4.1	4.9	4.6		2.3	4.1	3.2
18	71.4	82.4	77.9		72.5	70.7	75.7
19	23.5	12.0	16.7		20.3	14.0	17.1
20	0.0	0.0	0.0		2.3	1.2	1.7
21	0.0	0.0	0.0		0.7	0.4	0.5
22	0.0	0.0	0.0		0.4	0.3	0.3
23-25	1.0	0.0	0.4		0.6	0.4	0.5
26-29	0.0	0.0	0.0		0.3	0.3	0.3
30 or older	0.0	0.0	0.0		0.3	0.4	0.3
<b>Racial Background (1)</b>							
White/Caucasian	96.9	97.9	97.5		83.7	81.7	82.7
Black/Negro/Afro-American	2.0	0.7	1.2		11.6	13.6	12.6
American Indian	0.0	0.0	0.0		0.8	0.7	0.7
Oriental	1.0	0.7	0.8		1.2	1.1	1.2
Hispanic-American/Chicano	0.0	0.0	0.0		1.0	1.0	1.0
Puerto Rican-American	0.0	0.0	0.0		1.4	1.6	1.5
Other	0.0	0.7	0.4		2.0	1.8	1.9
<b>Political Orientation</b>							
far left	2.1	0.0	0.9		2.2	1.7	1.9
liberal	22.1	20.1	20.9		25.6	24.4	25.0
middle-of-the-road	53.7	66.2	61.1		51.5	59.1	55.3
conservative	20.0	12.9	15.8		19.7	14.3	16.9
far right	2.1	0.7	1.3		1.1	0.6	0.8
<b>Average Grade in High School</b>							
A or bt	4.1	3.5	3.7		7.9	11.4	9.7
A-	5.1	8.5	7.1		10.2	15.0	12.6
B+	18.4	19.7	19.2		18.4	24.8	21.7
B	13.3	37.3	27.5		25.7	27.5	26.6
B-	19.4	12.7	15.4		15.8	10.3	13.0
C+	18.4	12.7	15.0		13.5	7.1	10.2
C	21.4	4.9	11.7		8.1	3.8	6.0
0	0.0	0.7	0.4		0.4	0.1	0.3
<b>Standardized Tests Taken</b>							
S.A.T.	99.0	98.6	98.7		76.5	74.8	75.6
A.C.T.	177.	49.3	45.2		54.4	54.6	54.5
P.S.A.T. (11th grade)	228.	93.4	89.8		75.5	78.8	77.2
other state-wide test	151.	42.6	46.7		39.3	35.0	37.1

FOAMORE COLLEGE		FOAMORE COLLEGE		4-YR Colleges Natl Norms	
It's		Number of			
Description	Respondents	Male	Female	Male	Female
		Total		(Percentages)	
-----					
Estimated Parental Income	215.				
less than \$3,000		0.0	1.6	0.9	4.2
\$3,000 - \$3,999		0.0	0.0	0.0	2.7
\$4,000 - \$5,999		0.0	2.4	1.4	4.9
\$6,000 - \$7,999		2.2	0.8	1.4	5.3
\$8,000 - \$9,999		2.2	5.6	4.2	5.9
\$10,000 - \$12,499		6.6	8.1	7.4	10.3
\$12,500 - \$14,999		8.8	6.5	7.4	10.2
\$15,000 - \$19,999		5.5	5.6	5.6	10.5
\$20,000 - \$24,999		8.8	16.1	13.0	15.8
\$25,000 - \$29,999		11.0	8.1	9.3	13.8
\$30,000 - \$34,999		14.3	9.7	11.6	7.9
\$35,000 - \$39,999		8.8	6.5	7.4	6.0
\$40,000 - \$49,999		12.1	12.9	12.6	3.9
\$50,000 or more		19.8	16.1	17.7	3.6
-----					
Number of Older Brothers	182.				
none		42.7	41.9	41.4	44.4
one		38.7	32.7	35.2	34.4
two		12.0	15.0	13.7	35.6
three or more		6.7	8.4	7.7	35.1
-----					
Number of Older Sisters	173.				
none		39.4	35.3	37.0	44.4
one		39.4	40.2	39.9	34.8
two		14.1	18.6	16.8	34.6
three or more		7.0	5.9	6.4	34.4
-----					
Number of Younger Brothers	164.				
none		50.8	41.6	45.1	40.2
one		33.3	43.6	39.6	39.1
two		12.7	9.9	11.0	38.5
three or more		3.2	5.0	4.3	14.5
-----					
Number of Younger Sisters	164.				
none		42.6	47.9	45.7	41.1
one		36.8	32.3	34.1	42.3
two		16.2	17.7	17.1	38.7
three or more		4.4	2.1	3.0	37.6
-----					
Twin Status	236.				
no		99.0	97.1	97.9	98.3
yes, identical		0.0	0.0	0.0	0.6
yes, fraternal		1.0	2.9	2.1	1.1
-----					
Miles from Home to College	242.				
5 or less		7.1	3.5	5.0	8.9
6-10		12.1	9.8	10.7	10.2
11-50		4.0	6.3	5.4	9.5
51-100		2.0	4.9	3.7	21.5
101-500		54.5	52.4	53.3	15.0
more than 500		20.2	23.1	21.9	16.9
					30.0
					30.7
					11.7

ROCKHOMBE COLLEGE		ROCKHOMBE COLLEGE		4-yr Colleges Natl Horrs	
Item	Number of Respondents	Male	Female	Male	Female
Description		Total (Percentages)		Total (Percentages)	
High School Program	240.	100.0	97.2	98.3	88.8
College preparatory		0.0	2.8	1.7	11.2
Other					
High School Program Prepared	240.	28.6	29.6	29.2	26.7
Student Very Well in					
mathematical skills	240.	30.6	32.4	31.7	29.8
reading and composition	240.	9.4	13.6	11.9	39.8
foreign languages	236.	26.0	27.5	26.9	20.0
science	238.	43.9	34.0	38.1	31.8
history, social sciences	239.	4.5	5.2	4.9	40.4
vocational skills	223.	17.6	25.0	22.1	18.6
musical and artistic skills	231.	19.4	14.8	16.7	28.3
study habits	240.	15.2	11.9	13.2	22.0
Need Remedial Work in					
English	242.	15.2	11.9	13.2	15.4
reading	242.	6.1	2.8	4.1	11.2
mathematics	242.	27.3	31.5	29.8	8.0
social studies	242.	0.0	2.1	1.2	7.5
science	242.	9.1	14.7	12.4	30.7
foreign language	242.	13.1	13.3	13.2	2.1
Can Presently Do This Well					
type 40 words per minute	237.	10.6	42.7	30.0	27.6
speak a second language	238.	5.2	11.3	8.8	17.3
water ski	235.	52.1	31.2	39.6	23.0
ski on snow	236.	37.2	26.8	30.9	20.0
eight-read piano music	233.	8.4	27.3	19.7	22.4
read music (singing)	237.	13.8	30.1	23.6	10.6
reference sporting events	234.	27.1	12.3	18.4	28.1
use a sewing machine	239.	7.3	60.1	38.9	34.2
use Robert's Rules of Order	224.	6.7	10.4	8.9	62.8
score a tennis match	233.	72.0	45.0	55.8	8.8
identify classical music	236.	6.4	13.4	10.6	39.5
program a computer	236.	5.3	3.5	4.2	8.5
use a slide rule	235.	17.0	15.6	16.2	9.0
swim a mile without stopping	236.	48.9	25.4	34.7	3.5
name the animal phyla	230.	7.9	9.2	8.7	15.7
differentiate stocks and bonds	237.	24.2	12.0	16.9	19.5
take a cake from scratch	237.	20.2	28.3	25.3	7.1
know freedoms in bill of rights	234.	29.7	32.9	31.6	23.0
do at least 15 push-ups	238.	92.7	40.1	61.3	76.5
					31.9
					66.7



Description	Number of Respondents		Percentage	
	Male	Female	Male	Female
<b>BOBROKE COLLEGE</b>				
<b>It is</b>				
<b>BOBROKE COLLEGE</b>				
<b>4-YR Colleges: Natl Norms</b>				
			Male	Female
			Total	
			(percentages)	
Reasons noted as very important in deciding to go to college	240.	27.3	30.4	29.0
Parents wanted me to go	237.	4.2	0.7	5.8
Could not find a job	237.	15.6	12.8	9.0
Wanted to get away from home	236.	74.0	69.5	74.9
Able to get a better job	239.	77.3	83.8	68.1
Gain general education	237.	52.6	44.4	43.0
Improve reading-study skills	238.	1.0	0.7	2.7
Nothing better to do	238.	84.2	46.6	36.4
Become a more cultured person	234.	59.1	43.3	65.0
To make more money	238.	84.2	86.7	75.2
Learn more about things	238.	70.5	74.1	88.9
Meet new and interesting people	238.	70.5	74.1	70.1
Prepare for graduate school	238.	50.5	43.4	54.9
			46.2	47.1
<b>This College is Student's</b>				
241.	66.3	66.4	66.4	73.8
first choice	21.4	28.5	23.2	19.5
second choice	8.2	7.7	7.9	4.5
third choice	4.1	1.4	2.5	3.9
less than third choice				2.2
				1.6
				1.9
<b>Reasons Noted as Very Important in Selecting this College</b>				
239.	3.2	7.2	5.6	6.4
relatives wanted me to come here	229.	2.1	3.0	4.5
teacher advised me	236.	45.8	47.1	48.7
has a good academic reputation	225.	21.5	17.4	20.8
offered financial assistance	224.	5.4	3.8	2.7
not accepted anywhere else	230.	18.1	13.2	16.3
advice of someone who attended	230.	10.5	18.5	15.2
offers special educ programs	229.	3.2	2.2	2.6
has low tuition	232.	10.6	9.4	7.8
advice of guidance counselor	228.	5.3	2.2	3.5
wanted to live at home	228.	12.8	3.7	8.7
friend suggested attending	228.	15.8	0.8	8.6
coll representative recruited me				9.0
				5.1
				7.1
<b>Number of Other Colleges Applied to for Admission this Year</b>				
236.	20.8	17.9	19.1	33.2
none	12.5	21.4	17.8	36.1
one	17.7	20.0	19.1	18.0
two	25.0	17.1	20.3	18.3
three	15.6	11.4	13.1	14.9
four	6.3	6.4	6.4	7.4
five	2.1	5.7	4.2	6.2
six or more				4.1
				3.8
				4.0
				3.8
				3.8
<b>Number of Other College Acceptances this Year</b>				
200.	18.3	13.6	15.5	20.1
none	28.0	34.7	32.0	33.7
one	22.0	21.2	21.5	24.3
two	22.0	16.9	19.0	24.6
three	7.3	5.1	6.0	14.6
four	1.2	4.2	3.0	6.1
five	1.2	4.2	3.0	2.5
six or more				2.3
				2.2
				1.6
				1.9

BONHORE COLLEGE		BONHORE COLLEGE		4-YR Colleges MATI HOURS	
Item Description	Number of Respondents	Male	Female	Male	Female
		[Percentages]			
<b>Residence Planned</b>					
During Fall Term					
with parents or relatives	231.	16.0	9.5	12.1	30.3
other private home or apartment		0.0	0.0	0.0	29.4
college dormitory		78.7	89.8	85.3	3.5
fraternity or sorority house		5.3	0.0	2.2	58.8
other campus housing		0.0	0.7	0.4	0.1
other		0.0	0.0	0.0	1.2
				1.0	0.4
				0.7	0.7
<b>Residence Preferred</b>					
During Fall Term					
with parents or relatives	175.	16.9	8.7	12.0	16.9
other private home or apartment		7.0	15.4	12.0	20.2
college dormitory		57.7	64.4	61.7	26.9
fraternity or sorority house		7.0	6.7	6.9	21.8
other campus housing		7.0	3.8	5.1	46.7
other		4.2	1.0	2.3	4.4
				2.9	2.0
				2.4	2.4
<b>Highest Degree Planned Here</b>					
186.					
none		4.9	4.8	4.8	4.9
associate (A.A. or equivalent)		1.2	1.9	1.6	5.0
bachelor's (B.A., B.S.)		84.0	85.7	84.9	4.0
master's (M.A., M.S.)		3.7	4.8	4.3	5.3
Ph.D. or Ed.D.		0.0	0.0	0.0	73.2
B.D., D.O., D.D.S., or D.V.M.		0.0	0.0	0.0	11.6
L.L.B. or J.D. (law)		1.2	0.0	0.5	12.0
B.D. or M.Div. (divinity)		4.9	2.9	3.8	1.2
other					1.2
					0.5
					0.6
					0.3
					0.5
					2.4
					1.9
					2.2
<b>Highest Degree Planned Anywhere</b>					
199.					
none		1.2	0.9	1.0	1.7
associate (A.A. or equivalent)		0.0	0.9	0.5	2.0
bachelor's (B.A., B.S.)		32.1	33.0	32.7	2.1
master's (M.A., M.S.)		36.9	34.8	35.7	2.7
Ph.D. or Ed.D.		6.0	48.3	13.1	2.4
M.F., E.O., D.D.S., or D.V.M.		11.9	3.5	7.0	36.2
L.L.B. or J.D. (law)		8.3	7.0	7.5	34.2
B.D. or M.Div. (divinity)		0.0	0.0	0.0	10.2
other		3.6	1.7	2.5	5.2
					6.4
					4.5
					5.6
					0.9
					0.5
					0.7
					2.7
					2.6
					2.7
<b>Veteran</b>					
235.					
No		99.0	100.0	99.6	97.8
Yes		1.0	0.0	0.4	99.2
					0.8
					1.5
<b>Permission To Use Data</b>					
174.					
No		18.5	11.0	13.8	17.3
Yes		81.5	89.0	86.2	82.7
					15.7
					84.3
					81.5

Description	Number of Respondents		BOYDORR COLLEGE (Percentages)		4-YR Colleges Natl Norms (Percentages)	
	Male	Female	Male	Female	Male	Female
accountant or actuary	4.1	3.7	4.0	6.9	5.0	5.9
actor or entertainer	0.0	0.7	0.4	0.9	1.2	1.1
architect or urban planner	1.1	0.0	0.4	1.6	0.3	0.9
artist	0.0	3.0	1.8	1.6	2.9	2.3
business (clerical)	0.0	0.0	0.0	0.3	2.2	1.3
business executive	24.7	9.0	15.4	11.0	5.7	8.3
business owner or proprietor	8.6	2.2	4.8	3.5	0.5	2.0
business salesperson or buyer	2.2	0.0	0.9	1.0	0.7	0.8
clergy (minister, priest)	0.0	0.0	0.0	1.2	0.1	0.6
clergy (other religious)	0.0	0.0	0.0	0.3	0.2	0.3
clinical psychologist	0.0	3.0	1.8	0.7	1.9	1.3
college teacher	0.0	0.7	0.4	0.5	0.4	0.4
computer programmer or analyst	1.1	0.0	0.4	2.4	1.8	2.1
conservationalist or forester	0.0	0.0	0.0	1.9	0.7	1.3
dentist (including orthodontist)	3.2	0.0	1.3	1.5	0.5	0.9
diplomat or hose economist	0.0	0.0	0.0	12.5	1.2	6.7
engineer	0.0	0.0	0.0	12.5	1.2	6.7
farmer or rancher	0.0	0.0	0.0	1.0	0.1	0.5
foreign service worker	1.1	2.2	1.8	0.4	0.9	0.6
hobbyist (full-time)	0.0	0.7	0.4	0.0	0.3	0.2
interior decorator	0.0	0.7	0.4	0.0	1.0	0.5
interpreter (translator)	0.0	1.5	0.9	0.1	0.5	0.3
lab technician or hygienist	0.0	3.7	2.2	0.7	2.5	1.7
law enforcement officer	1.1	0.0	0.4	3.1	1.2	2.1
lawyer (attorney) or judge	6.5	6.7	6.6	6.7	4.4	5.5
military service (career)	1.1	0.7	0.9	3.5	0.5	2.0
musician (performer, composer)	0.0	0.7	0.4	2.0	0.5	1.9
nurse	0.0	3.7	2.2	0.1	7.0	3.6
optometrist	0.0	0.0	0.0	0.3	0.2	0.2
paracrist	1.1	1.5	1.3	0.7	0.5	0.6
physician	0.6	0.7	4.0	4.5	3.0	3.7
school counselor	0.0	0.0	0.0	0.2	0.6	0.4
school principal or superint.	0.0	0.0	0.0	0.1	0.0	0.0
scientific researcher	3.2	3.0	3.1	3.3	1.7	2.5
social, welfare or rec. worker	0.0	6.7	4.0	0.9	5.1	3.1
statistician	1.1	0.0	0.4	0.1	0.1	0.1
therapist (phys, occupat, etc)	0.0	1.5	0.9	0.5	3.9	2.2
teacher (elementary)	1.1	3.0	2.2	0.9	11.2	6.1
teacher (secondary)	2.2	0.7	1.3	3.6	5.2	4.4
veterinarian	0.0	1.5	0.9	0.7	0.9	0.8
writer or journalist	2.2	1.5	1.8	2.6	2.5	2.0
skilled trades	0.0	0.0	0.0	2.6	0.3	1.4
other	2.2	9.7	6.6	4.8	6.5	5.6
undecided	23.7	26.9	25.6	9.6	12.1	16.9



BOYDORR COLLEGE

Number of Respondents 227.

Item	Number of Respondents		BUSHNOK COLLEGE (Percentages)		4-YR Colleges (Percentages)		Male Female Total	
	Male	Female	Male	Female	Male	Female	Male	Female
Students Estimate Chances Are Very Good That They Will Change major field	235	20.0	15.7	17.4	13.0	14.9	14.0	14.0
fail one or more courses	236	22.1	19.1	20.3	12.0	14.9	13.4	13.4
graduate with honors	236	3.2	2.8	3.0	2.3	1.8	2.1	2.1
be elected to student office	236	10.4	2.8	5.9	13.2	10.2	11.7	11.7
get a job to pay col. expenses	237	2.1	2.8	2.5	3.6	2.7	3.1	3.1
join a social frat or sorority	237	36.8	31.7	33.8	42.1	43.5	42.0	42.0
live in a conductional dorm	237	20.0	23.4	24.5	18.1	22.2	20.2	20.2
be elected to an honor society	238	12.5	7.0	9.2	23.1	20.2	21.6	21.6
make at least a 'B' average	237	6.3	2.1	3.8	7.5	7.1	7.3	7.3
need extra time to complete degre	236	29.2	32.4	31.1	39.6	40.2	39.9	39.9
need tutoring in some courses	236	4.3	4.2	4.2	4.6	5.0	4.8	4.8
work at outside job	236	12.5	16.9	15.1	8.8	10.4	9.7	9.7
seek vocational counseling	237	15.6	13.5	14.3	22.6	24.3	23.5	23.5
seek individual counseling	237	4.2	9.9	7.6	6.9	9.0	8.0	8.0
get a bachelor's degree	236	5.3	3.5	4.2	5.5	4.8	5.1	5.1
drop out temporarily	238	70.8	71.1	71.0	72.5	74.9	73.7	73.7
drop out permanently	237	0.0	2.8	1.7	1.6	1.7	1.6	1.6
transfer to another college	237	1.1	1.4	1.3	1.0	1.0	1.0	1.0
be satisfied with college	238	10.4	12.3	11.5	11.7	13.6	12.7	12.7
find a job in preferred field	237	55.2	66.0	61.6	50.5	59.6	55.1	55.1
marry while in college	236	2.1	4.3	3.4	4.6	6.7	6.3	6.3
marry within a year after col	236	12.8	12.7	12.7	15.1	18.2	16.7	16.7
Objectives Considered to be Essential or Very Important								
achieve in a performing art	238	12.4	14.2	13.4	12.5	17.7	15.2	15.2
be an authority in my field	238	77.1	69.0	72.3	78.4	73.5	75.9	75.9
obtain recog from colleagues	237	50.0	38.3	43.0	52.4	46.1	49.2	49.2
influence political structures	238	15.6	15.5	15.5	20.9	13.7	17.2	17.2
influence social values	238	28.1	32.4	30.7	31.3	35.7	33.5	33.5
raise a family	238	60.4	50.0	54.2	60.1	59.7	59.9	59.9
have admn. responsibility	237	35.4	22.0	27.4	37.9	30.0	33.9	33.9
be very well off financially	238	62.5	45.8	52.5	63.6	48.0	53.6	53.6
help others in difficulty	238	52.1	72.5	64.3	60.6	75.8	68.4	68.4
theoretical contribu to science	236	13.5	13.6	13.6	17.6	10.5	14.0	14.0
write original works	237	10.4	18.4	15.2	12.9	17.8	15.4	15.4
create artistic work	239	9.3	20.4	15.9	12.3	20.0	16.2	16.2
be successful in my own business	237	67.0	37.1	49.4	53.9	37.9	45.7	45.7
be involved in environ. cleanup	239	35.1	31.0	32.6	31.2	29.1	30.2	30.2
develop philosophy of life	238	68.0	54.6	60.1	60.3	64.6	62.5	62.5
participate in community action	238	27.8	34.0	31.5	29.1	35.8	32.5	32.5
freedom racial understanding	238	37.1	36.9	37.0	36.2	43.6	40.0	40.0
keep up with political affairs	237	54.2	41.1	46.4	47.0	38.5	42.6	42.6

(\*) Total number of valid forms received is indicated by the first number in this row.  
 (\*\*) This item is reported for the first time in 1977. Items not indicated with 'new' are repeated or modified questions from one or more of the earlier surveys.  
 (†) Percentages will sum to more than 100 if any students checked more than one category.  
 (‡) Recategorization of this item from a longer list is shown in Appendix C of THE AMERICAN FRESHMAN.

APPENDIX B

ASSESSMENT OF DECISION MAKING-FORM B,  
SCORING KEY, AND CORRESPONDENCE  
FROM ITS AUTHOR

## ASSESSMENT OF CAREER DECISION-MAKING QUESTIONNAIRE

This questionnaire is designed to help assess your degree of progress toward making and carrying out decisions affecting your future career. It is a way of finding out where you are in your career planning, and what your present attitudes, feelings, needs, or concerns are regarding a career choice. This information will help determine what kinds of help you may need in your career exploration and planning activities.

Since the purpose is to assess your level of career decision-making, there are no right or wrong answers. Circle "A" (Agree) or "D" (Disagree) for each statement, depending on whether or not you feel it applies to you--in other words, something you could or would say about yourself. Respond to each statement as candidly as possible.

NOTE. The terms "occupation," "career," and "field" are used interchangeably in various statements in the questionnaire. All three terms refer to your anticipated choice of a type of work beyond the college years.

Name:

---

(Please Print)

## DECISION-MAKING TASK: OCCUPATION

## "Where I am Heading After College"

CIRCLE: A-Agree or D-Disagree

- A D 1. What I used to think I wanted to become doesn't seem practical anymore.
- A D 2. Almost any career seems appealing to me.
- A D 3. I think I'll be happy with the career I have chosen.
- A D 4. I wonder what kind of job I'll be able to get in my field.
- A D 5. My attitudes and outlook are becoming more like the people I know in my field.
- A D 6. I need to plan ahead for the future.
- A D 7. I want a career that will give me the kinds of rewards I need.
- A D 8. I'm trying to decide between two or three possible careers.
- A D 9. My plans for the future are too indefinite.
- A D 10. I'm pretty certain about the occupation I will enter.
- A D 11. The occupation I have chosen will affect the kinds of friends I will have in the future.
- A D 12. I'm tired of waiting to begin work in my field.
- A D 13. I want to know what field of work I'm best suited for.
- A D 14. There are several careers which I have already decided against.
- A D 15. I don't know what I really want out of life.

- A D 16. I hope I can find a job in my field after I graduate.
- A D 17. I'm a lot happier now that my future career is clear to me.
- A D 18. I won't let anything get in the way of my reaching my goal.
- A D 19. I don't have enough experience for a job in my field.
- A D 20. I need information about occupations.
- A D 21. The more I learn about things in my field, the more involved I become.
- A D 22. I need to find out what jobs are available in my field.
- A D 23. I've decided on the field I am going into.
- A D 24. I'm interested in too many fields.
- A D 25. I've become more realistic in my thinking about possible careers.
- A D 26. I've changed my mind about what I wanted to become, now that I've learned more about the field.
- A D 27. I hope the people in my field will accept me.
- A D 28. I'm more certain of the fields I don't want than what I do want.
- A D 29. I need to decide on an occupation.
- A D 30. I know what's important to me, but I don't know what kind of career would meet most of my needs.
- A D 31. It's hard to know what to look for in a career.
- A D 32. I need to start thinking about job interviews.
- A D 33. The career I have chosen fits in with my personality.
- A D 34. I wonder if I will be successful in life.
- A D 35. I need to know more about the training required for some of the occupations I am considering.



- A D 36. I will probably have to move away from home to get a job in my field.
- A D 37. I expect to go a long way in my field.
- A D 38. I don't know if I have the right kind of personality for the work I'm considering.
- A D 39. I don't know how to look for a job in my field.
- A D 40. I feel I can overcome any obstacles in the way of my goal.
- A D 41. I can't decide on a career because my interests keep changing.
- A D 42. The people in my field have certain expectations of me.
- A D 43. I want to be trained for a specific job.
- A D 44. It's unlikely that I will change my mind about my career plans.
- A D 45. I don't know how to go about deciding on a career.
- A D 46. There are not many job opportunities in the field that I really like.
- A D 47. I'm looking forward to getting out of school and getting started in my career.
- A D 48. I think I'm ready to choose a specialty within my chosen field.

## ACDM-B SCORING KEY

Exploration Subscale Statements:

2. 6. 9. 13. 15. 20. 24. 29. 31. 34. 41. 45.

Total Agree: \_\_\_\_\_ X 1 = \_\_\_\_\_ (Weighted Score)

Crystallization Subscale Statements:

1. 7. 8. 14. 25. 26. 28. 30. 35. 38. 43. 46.

Total Agree: \_\_\_\_\_ X 2 = \_\_\_\_\_ (Weighted Score)

Choice Subscale Statements:

3. 10. 12. 17. 18. 21. 23. 33. 37. 40. 44. 47.

Total Agree: \_\_\_\_\_ X 3 = \_\_\_\_\_ (Weighted Score)

Clarification Subscale Statements:

4. 5. 11. 16. 19. 22. 27. 32. 36. 39. 42. 48.

Total Agree: \_\_\_\_\_ X 4 = \_\_\_\_\_ (Weighted Score)

TOTAL (Agree) SCORE = \_\_\_\_\_ TOTAL WEIGHTED SCORE = \_\_\_\_\_

$$\frac{\text{TOTAL WEIGHTED SCORE}}{\text{TOTAL (Agree) SCORE}} = \text{_____ (DMT-O SCORE)}$$



Southern Illinois  
University at Carbondale  
Carbondale, Illinois 62901

Department of Psychology

November 2, 1976

Dr. Thomas C. Tillar, Jr.  
Director of Alumni Services  
The Alumni Association  
Virginia Polytechnic Institute  
and State University  
Blacksburg, Va. 24060

Dear Dr. Tillar:

My apologies for the delay in response to your letter of October 14. We are just now in the process of launching a two-year project on career decision making involving some 2,000 students.

I am pleased that you are interested in the potential of the Assessment of Career Decision Making (ACDM) in your program. I have enclosed the instrument, related materials, and papers. Should you decide to use the ACDM, please return the Request to Use ACDM Form, for my records.

Best wishes in your project. If I can be of any assistance, feel free to call upon me.

Cordially,

A handwritten signature in cursive script that reads "Vincent A. Harren".

Vincent A. Harren  
Professor and Director  
Counseling Psychology Program

Enclosures  
VH/ss



Southern Illinois  
University at Carbondale  
Carbondale, Illinois 62901

Department of Psychology

September 13, 1977

Thomas C. Tillar, Jr.  
Director of Alumni Services  
Virginia Tech Alumni Association  
Blacksburg, VA 24061

Dear Mr. Tillar:

Thank you for the description of your study in which the ACDM will be used. I think you have a good study and a sound design. Let me know if I can be of any assistance. Best wishes for the success of your project.

Cordially,

A handwritten signature in cursive script, appearing to read "Vincent A. Harren".

Vincent A. Harren  
Professor - Director of  
Counseling Program

APPENDIX C

MATERIALS DISTRIBUTED BY DR. LACY G. HALL  
DURING THE ORIENTATION TO  
DECISION-MAKING THEORY

HALL CHOICE MODEL\*

LEVEL I - Pre-Traditional (Subjective "External" Authority)

Stage A - Noncompliance

Stage B - Compliance

LEVEL II - Traditional (Objective "External" Authority)

Stage A - Noncompliance

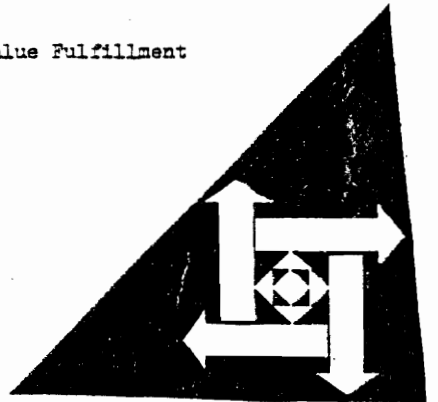
Stage B - Compliance

LEVEL III - Post-Traditional (Internal Subjective Values and Needs)

Stage A -Satisfaction: Need and Value Fulfillment

Stage B - Shaping

GROWTH FROM DEPENDENT BEHAVIOR TOWARD INDEPENDENT SELF-DIRECTEDNESS



\*Source - Counselor's Manual, Hall Occupational Orientation Inventory, pages 7-10, 1976. Copyright, 1976 L. G. Hall. Scholastic Testing Service, 480 Meyer Road, Bensenville, Illinois 60106

Write in below a Level I, II, and III choices that you made recently.  
For each choice write in some brief explanation as to how you saw it as a  
Level I, II or III choice.

LEVEL I - CHOICE:

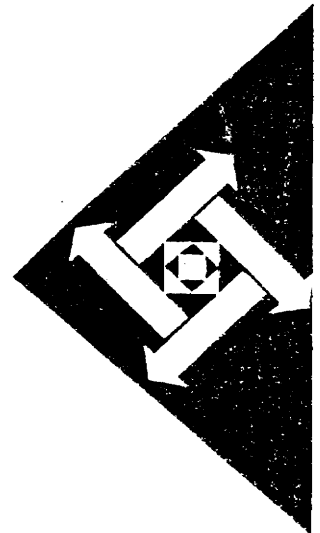
EXPLANATION:

LEVEL II - CHOICE:

EXPLANATION:

LEVEL III - CHOICE:

EXPLANATION:



\*Source - Counselor's Manual, Hall Occupational Orientation Inventory,  
pages 7-10, 1976. Copyright, 1976 L. G. Hall. Scholastic  
Testing Service, 480 Meyer Road, Bensenville, Illinois 60106

SAMPLE OF ITEMS FROM HALL OCCUPATIONAL  
ORIENTATION INVENTORY (HALL)\*  
Copyright 1977 L. G. Hall

M-Most Desirable  
D-Desirable  
N-Not Important  
U-Undesirable  
V-Very Undesirable

|   | <u>Response</u> |
|---|-----------------|
| 1. There is freedom to do the job your way.   | M D N U V       |
| 2. There are frequent times of rush and pressure in the job.  | M D N U V       |
| 3. Increase in salary is based on how well you know your job.   | M D N U V       |
| 4. Through the work you become a member of a group or team.   | M D N U V       |
| 5. The job does not expose you to public criticism.   | M D N U V       |
| 6. Promotions are more available to workers who are willing to change jobs and move from town to town.              | M D N U V       |
| 7. Your work gives you a high position in your community.   | M D N U V       |
| 8. You use a variety of your work talents each day.   | M D N U V       |
| 9. The value of your job is well recognized by your friends.  | M D N U V       |
| 10. After going home, you don't have to think about your work.  | M D N U V       |
| 11. In this job you interpret facts and information to your employer.   | M D N U V       |
| 12. Using tools, you change the appearance of things.   | M D N U V       |
| 13. You give people advice in the job.  | M D N U V       |
| 14. There are good schools in the area where you work.  | M D N U V       |
| 15. Common sense, rather than special knowledge, is required in the job.  | M D N U V       |
| 16. Your starting salary is small, but increases rapidly.   | M D N U V       |
| 17. The job requires that you do quite a bit of climbing.   | M D N U V       |
| 18. You must travel a lot by auto and plane in the job.   | M D N U V       |
| 19. Because of the job, you have to be concerned about what people think of your behavior during non-working hours. | M D N U V       |
| 20. You get to work late at night.  | M D N U V       |
| 21. To get ahead in the job, you must be friendly with persons you don't really like.                               | M D N U V       |

\* Extracted from Hall Young Adult Form, Scholastic Testing Service, 480 Meyer Road, Bensenville, Illinois 60106.



H A L L  
O C C U P A T I O N A L T R A I T S U R V E Y \*



| NAME                       | SCORES |   |   |         |   |   |      |   |   |   |
|----------------------------|--------|---|---|---------|---|---|------|---|---|---|
|                            | Low    |   |   | Average |   |   | High |   |   |   |
|                            | 0      | 1 | 2 | 3       | 4 | 5 | 6    | 7 | 8 | 9 |
| CREATIVITY, INDEPENDENCE   | .      | . | . | .       | . | . | .    | . | . | . |
| RISK                       | .      | . | . | .       | . | . | .    | . | . | . |
| INFORMATION, KNOWLEDGE     | .      | . | . | .       | . | . | .    | . | . | . |
| BELONGINGNESS              | .      | . | . | .       | . | . | .    | . | . | . |
| SECURITY                   | .      | . | . | .       | . | . | .    | . | . | . |
| ASPIRATION                 | .      | . | . | .       | . | . | .    | . | . | . |
| ESTEEM                     | .      | . | . | .       | . | . | .    | . | . | . |
| SELF-ACTUALIZATION         | .      | . | . | .       | . | . | .    | . | . | . |
| PERSONAL SATISFACTION      | .      | . | . | .       | . | . | .    | . | . | . |
| ROUTINE-DEPENDENCE         | .      | . | . | .       | . | . | .    | . | . | . |
| DATA ORIENTATION           | .      | . | . | .       | . | . | .    | . | . | . |
| THINGS ORIENTATION         | .      | . | . | .       | . | . | .    | . | . | . |
| PEOPLE ORIENTATION         | .      | . | . | .       | . | . | .    | . | . | . |
| LOCATION CONCERN           | .      | . | . | .       | . | . | .    | . | . | . |
| APTITUDE CONCERN           | .      | . | . | .       | . | . | .    | . | . | . |
| MONETARY CONCERN           | .      | . | . | .       | . | . | .    | . | . | . |
| PHYSICAL ABILITIES CONCERN | .      | . | . | .       | . | . | .    | . | . | . |
| ENVIRONMENT CONCERN        | .      | . | . | .       | . | . | .    | . | . | . |
| CO-WORKER CONCERN          | .      | . | . | .       | . | . | .    | . | . | . |
| QUALIFICATIONS CONCERN     | .      | . | . | .       | . | . | .    | . | . | . |
| TIME CONCERN               | .      | . | . | .       | . | . | .    | . | . | . |
| DEFENSIVENESS              | .      | . | . | .       | . | . | .    | . | . | . |
|                            | 0      | 1 | 2 | 3       | 4 | 5 | 6    | 7 | 8 | 9 |

\* Source: Counselor,s Manual, Hall Occupational Orientation Inventory, 1976. Copyright, L.G. Hall. Scholastic Testing Sv., 480 Meyer Rd. Bensenville, Ill. 60106

APPENDIX D

ROANOKE COLLEGE CAREER VOLUNTEERS PROGRAM  
BROCHURE AND COVER LETTER

ROANOKE COLLEGE



SALEM, VIRGINIA 24153

DIRECTOR OF ALUMNI ACTIVITIES

February, 1977

Dear Alumnus:

Do you know what is probably the most difficult decision for a college undergraduate to have to make? . . . CHOOSING A CAREER!

It's a decision more critical than which courses or which professors to take. And, it ultimately has a more profound impact on the student's future after college. After all, a degree is an investment in the future and should be used to its fullest advantage.

Roanoke College is acutely aware of its increasing responsibility to assist its students in career decision making and planning. The College wants to do more to expose current undergraduates to various career opportunities in a job market that becomes more competitive each year.

Our Placement Office provides career information and counseling for our students. However, simply reading about careers hardly compares with actually observing the working professional or perhaps participating in a work situation. In an effort to expand the services already available at the College, we hope to enlist the volunteer participation of alumni in the Roanoke Valley and provide a "personal touch" to career planning for our students.

ROANOKE COLLEGE CAREER VOLUNTEERS is what we are calling this new program. Hopefully, through it, interested students will be able to visit you and other alumni at home or at work to discuss various aspects of a profession or career. This kind of exchange will benefit our students to a far greater extent than any informational publication or classroom experience.

Please take a few moments to read the enclosed brochure describing the Career Volunteer program. A short questionnaire is included, which we hope you will complete and return to the Alumni Activities Office. Also keep in mind that spouses are encouraged to participate.

Roanoke College is continually searching for ways to broaden educational opportunities for its students. The Career Volunteer program is one way that you can help to strengthen the College's career development program.

Sincerely,

Thomas S. Turner



## ROANOKE COLLEGE CAREER VOLUNTEERS

### AFTER COLLEGE . . . WHAT THEN?

Many students enter and frequently graduate from college with little insight into what career they wish to enter or are capable of entering. ROANOKE COLLEGE CAREER VOLUNTEERS is a program designed to provide opportunities for undergraduates to interact with alumni in various careers. Hopefully, participating students will receive an overview concerning the types of skills required in certain careers for which they possess some degree of interest. Such experiences should reinforce their motivation to prepare for definite careers or perhaps investigate other career options. The earlier this decision making process occurs during college preparation, the greater the benefit to our students.

### A BRIEF VISIT . . .

Each student interested in participating will have an opportunity to examine his or her career interests in some depth. Primarily Freshmen and Sophomores will be involved in the program. After several sessions with their faculty advisors, students will be referred to one or more alumni in careers aligned with the students' interests. It will be each student's responsibility to contact the alumnus and schedule a visit at a time which is mutually convenient.

Participating alumni are invited to spend part of an hour (or longer if desirable) to meet the student at the home of the alumnus or at a business location, whichever is appropriate. Possibly, an initial visit might lead to a situation in which a student would be able to participate in a one-day work experience or observation. Or, perhaps, a visit might lead to a summer or part-time work experience in the alumnus' organization, where opportunities exist.

### BECOME A ROANOKE COLLEGE CAREER VOLUNTEER . . .

Alumni who agree to participate may receive up to four student referrals. But depending upon the interests of individual students involved, it is likely that each alumnus will receive less than four.

**ROANOKE COLLEGE NEEDS YOUR INVOLVEMENT!** Please complete the attached questionnaire indicating that you will volunteer to participate. Just detach, fold and tape the questionnaire when completed. No postage stamp is necessary for mailing.

### THANK YOU

For additional information or extra copies of the questionnaire, write or call:

**ALUMNI ACTIVITIES OFFICE  
ROANOKE COLLEGE  
SALEM, VA 24153  
Telephone: 703-389-2351 (Ext. 311)**

**ROANOKE COLLEGE CAREER VOLUNTEERS**  
(Please Print)

Name \_\_\_\_\_ If contacted by a Roanoke College student, I would be (✓)  
 \_\_\_\_\_  
 Home Address \_\_\_\_\_  willing to have a student visit me to discuss various aspects of my work.  
 \_\_\_\_\_  willing to have a student participate in a one-day work experience or observation in my organization.  
 Home Phone: \_\_\_\_\_  
 Business Phone: \_\_\_\_\_  
 Class Year: \_\_\_\_\_

Additional degree(s), licenses or certifications received since attending Roanoke College: \_\_\_\_\_  
 \_\_\_\_\_

CURRENT OCCUPATION (AND TITLE) \_\_\_\_\_

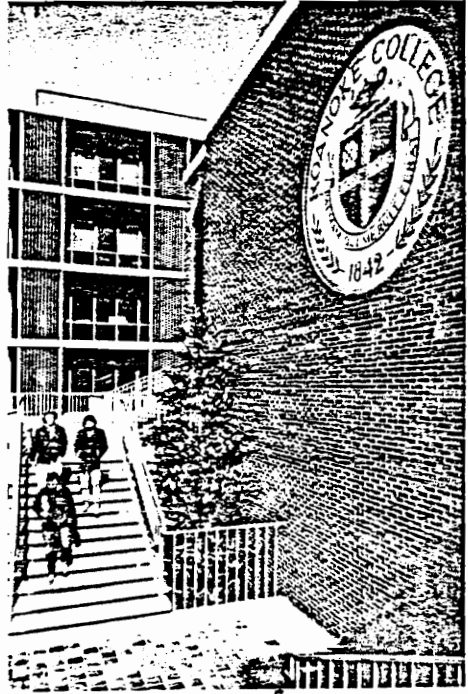
BUSINESS ADDRESS \_\_\_\_\_  
 \_\_\_\_\_

Description of professional responsibilities that could be discussed with or observed by a Roanoke College student:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Previous employment or responsibilities which may be of interest to students:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

My spouse also would like to participate as a Career Volunteer. Please send an additional questionnaire.  
 His/Her name: \_\_\_\_\_

COMMENTS:



Postage  
Will Be Paid  
by  
Addressee

**BUSINESS REPLY CARD**  
FIRST CLASS PERMIT NO. 7, SALEM, VIRGINIA

ROANOKE COLLEGE CAREER VOLUNTEERS  
ALUMNI ACTIVITIES OFFICE  
**ROANOKE COLLEGE**  
SALEM, VIRGINIA 24153



No  
Postage Stamp  
Necessary  
If Mailed in the  
United States

APPENDIX E

CAREER VOLUNTEERS GROUPED BY  
OCCUPATIONAL CLUSTERS

ROANOKE COLLEGE CAREER VOLUNTEERS

OFFICE OCCUPATIONS:

Banker/Finance Officer (6)\*  
Computer Analyst (2)  
Lawyer (10)  
Public Relations Officer (1)

SERVICE OCCUPATIONS:

Public Administration  
Officer (4)

EDUCATION AND RELATED  
OCCUPATIONS:

Kindergarten Teacher (1)  
Elementary Teacher (6)  
High School Teacher (7)  
Post-secondary Teacher (1)  
Special Education Teacher (2)  
School Librarian (1)

SALES OCCUPATIONS:

General Salesperson (1)  
Insurance Salesperson (5)  
Real Estate Salesperson (1)

CONSTRUCTION OCCUPATIONS:

Building Contractor (2)

OCCUPATIONS IN TRANSPORTATION ACTIVITIES:

Transportation Administrator (2)

SCIENTIFIC AND TECHNICAL OCCUPATIONS:

Engineer (4)

HEALTH OCCUPATIONS:

Physician (4)  
Dentist (1)  
Medical Technologist (2)  
Nurse (1)  
Hospital Administrator (2)

SOCIAL SCIENTISTS:

Psychologist (1)

SOCIAL SERVICE OCCUPATIONS:

Counselor (2)  
Social Worker (1)  
Clergy (1)

ART, DESIGN, AND COMMUNICATIONS  
OCCUPATIONS:

Artist (1)  
Broadcast Journalist (2)  
Newspaper Journalist (1)

\*( ) Number of Career Volunteers



APPENDIX F

DETAILED DESCRIPTION OF THE CAREER VOLUNTEERS  
PROGRAM MAILED TO ALUMNI

## ROANOKE COLLEGE



SALEM, VIRGINIA 24153

DIRECTOR OF ALUMNI ACTIVITIES

April 15, 1977

Dear Alumnus:

Your Roanoke College Career Volunteer questionnaire has been received. We are very grateful for your willingness to participate in this new program as a Career Volunteer. Response to the program by alumni has been extremely good, certainly an indication the program is off to a great start.

The initial phase of the program is a "pilot" phase scheduled for this Spring. Only a limited portion of the freshman class will be involved. Because of the small number of students participating, it is not likely that all Career Volunteers will be contacted for a referral in April or early May. However, the program will be continued in the Fall, at which time large numbers of students will be available for referral to you and other Career Volunteers. Depending upon students' interests in various careers, you should receive up to four referrals.

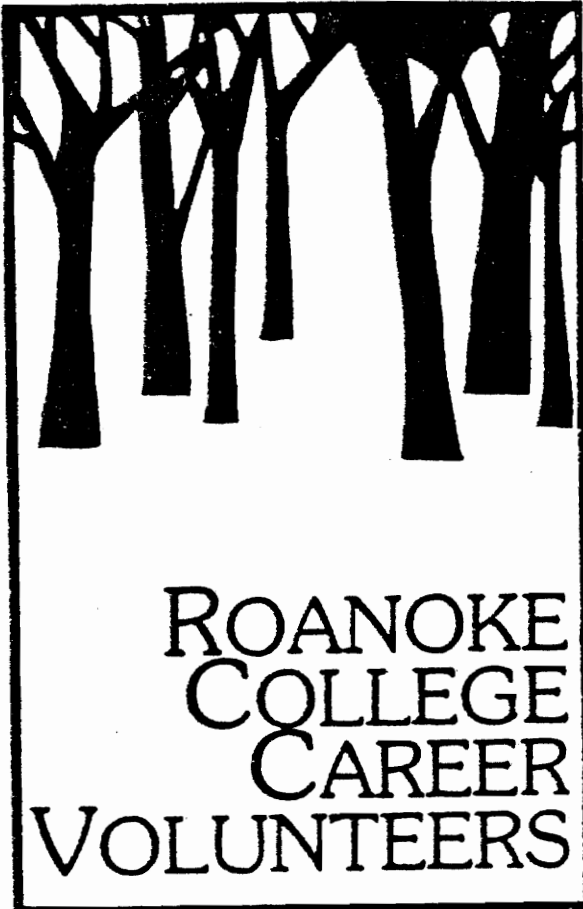
A more detailed description of the Career Volunteer program is enclosed. The program has been designed to provide students information about themselves and about careers. The categorical areas listed on page 2 of the enclosure should be used as a guide when discussing careers with students. If you have any questions about the program, please feel free to contact me at 389-2351, Ext. 311.

Again, thank you for returning the questionnaire. We look forward to your participation as a Roanoke College Career Volunteer.

Sincerely,

*Thomas S. Turner*

Thomas S. Turner



Students, particularly those in their early years of college, need information about careers. This information is essential in making decisions about formal preparation for a career and setting appropriate career goals. However, it is important also for students to have an awareness of their own values, needs, attitudes, and interests. With a knowledge of SELF and information about careers, hopefully students will be able to make decisions which broaden their opportunities for satisfying and rewarding careers.

The primary objectives of the Roanoke College Career Volunteers program are:

1. To assist students in staying "in touch" with their personal needs and values, making career decisions which accurately reflect needs and values; and
2. To assist students in obtaining information about careers in the "world outside themselves."

#### PHASES OF THE PROGRAM

Students who participate in the program will attend a presentation on the theory of career decision-making. Following this orientation, they will complete a self-appraisal inventory, the HALL OCCUPATIONAL ORIENTATION INVENTORY. The inventory is not a test, nor is it an instrument designed to "tell" students which occupations or careers they are best suited for. Its purpose simply is to provide students with

more information about themselves which should help them make better decisions. Through it, students paint a verbal picture of personal needs, values, and interests as they relate to career choices.

The inventory is scored by students immediately upon completion, in order for the information to be of maximum benefit. Students then use an accompanying interpretive publication to analyze the scoring results. An understanding of personal characteristics should make students more receptive to meaningful career information.

For the purpose of learning more about careers, students may continue to the final phase of the program by requesting referrals to Career Volunteers. An appointment will be scheduled with an alumnus in an occupation corresponding to each student's general area of interest. It is anticipated that during a short visit, not exceeding one hour, students will be able to interview the alumnus and receive a general overview of the alumnus' responsibilities.

Information obtained by students from the inventory is categorized under twenty-one general areas. These areas are listed below. It is hoped that Career Volunteers will focus on the category items when responding to questions or in discussing characteristics of an occupation or related occupations. Additionally, students may be interested in specific educational requirements, kinds of summer employment, or alternative careers which are important concerns in planning for a career.

#### CATEGORICAL AREAS FOR DISCUSSION

- \* Creativity and independence afforded by the occupation.
- \* Level of risk associated with the occupation, such as pressure, emergencies or sudden financial loss.
- \* Need to accumulate information and knowledge for salary and promotion.

- \* Importance of belonging to a group or team.
- \* Level of security with freedom from emotional stress and worry.
- \* Potential for upward mobility and increasing responsibility.
- \* Self-esteem afforded by the occupation such as position in the community and feelings of being successful.
- \* Ability to express oneself and develop individual talents.
- \* Level of personal satisfaction and pride afforded by the occupation.
- \* Routineness or dependency in the occupation, with a set plan and few unexpected changes.
- \* Nature of printed materials and data orientation in the occupation.
- \* Nature of the use of physical objects such as tools and machinery.
- \* Degree of contact with people in the occupation.
- \* General location requirements of the occupation such as climate, region, or city.
- \* Monetary rewards to be expected from the occupation.
- \* Physical abilities important in the occupation, such as dexterity, body coordination, or good vision.
- \* Nature of the specific work environment, such as surroundings, nature of travel, or working alone.
- \* Types and training level of co-workers typical in the occupation.
- \* Specific qualifications for the occupation such as previous experience, college or graduate work.
- \* Length and flexibility of working time in the occupation.
- \* Minimum aptitudes or special skills required in the occupation.

APPENDIX G

INTERVIEW REQUEST FORM

## INTERVIEW REQUEST FORM

NAME \_\_\_\_\_

SCHOOL ADDRESS (Box) \_\_\_\_\_ ROOM \_\_\_\_\_

TELEPHONE \_\_\_\_\_ BEST TIME OF DAY TO PHONE \_\_\_\_\_

PRIMARY CAREER INTEREST \_\_\_\_\_

SECONDARY INTEREST \_\_\_\_\_

Several alumni of Roanoke College residing in the Roanoke Valley have volunteered to meet with students who are interested in learning more about specific occupations. A meeting with an alumnus, employed in the area of your career interest, will be arranged for you at a time convenient to your schedule. You will be able to visit the alumnus at his or her place of business for a short visit of approximately one hour.

Please identify several different days during the next two weeks (October 31-November 11) from which a meeting date can be selected for you. You will be notified by the Office of the Dean of Students regarding the date selected and the alumnus' name and address.

| CALENDAR | Oct. | November |   |    |   |   |   |   |    |   |    |    |
|----------|------|----------|---|----|---|---|---|---|----|---|----|----|
|          | 31   | 1        | 2 | 3  | 4 | . | . | 7 | 8  | 9 | 10 | 11 |
|          | M    | Tu       | W | Th | F |   |   | M | Tu | W | Th | F  |

Identify weekdays only and hours that you prefer between 9:00am & 5:00pm.

WEEK OF OCT. 31 - NOV. 4:

Day/Date \_\_\_\_\_ Hours \_\_\_\_\_

Day/Date \_\_\_\_\_ Hours \_\_\_\_\_

Day/Date \_\_\_\_\_ Hours \_\_\_\_\_

WEEK OF NOV. 7 - 11:

Day/Date \_\_\_\_\_ Hours \_\_\_\_\_

Day/Date \_\_\_\_\_ Hours \_\_\_\_\_

Day/Date \_\_\_\_\_ Hours \_\_\_\_\_

APPENDIX H

STUDENT INTERVIEW GUIDE



## INTERVIEW GUIDE

IN YOUR INTERVIEW WITH AN ALUMNUS, YOU SHOULD TAKE ADVANTAGE OF THE OPPORTUNITY TO LEARN AS MUCH AS POSSIBLE ABOUT THE OCCUPATION WHICH REPRESENTS YOUR PRIMARY CAREER INTEREST. THE FOLLOWING QUESTIONS FOCUS ON VARIOUS ASPECTS OF AN OCCUPATION AND MAY BE USED AS A GUIDE IN YOUR INTERVIEW. EACH QUESTION RELATES TO A CHARACTERISTIC OF AN OCCUPATION WHICH MAY OR MAY NOT BE OF PARTICULAR CONCERN TO YOU.

- \* Does the occupation offer the opportunity to use imagination and creativity, with freedom from close supervision?
- \* Are pressure, competition, emergencies, and risk of bodily injury or financial loss characteristics of the occupation?
- \* Would the occupation afford me the opportunity to increase my knowledge on the job by learning from co-workers or through schooling and training?
- \* Is it possible for me to become a welcome member of a group or team in the occupation?
- \* Does the occupation offer financial and job security, promotions, orderly procedures for getting the work done, and freedom from public criticism?
- \* Might I expect to gain fast promotions and success by determination and hard work in the occupation? Is there special training to improve job mobility?
- \* Through the occupation, might I expect to gain position in the community, be able to influence others, and feel that I am successful in my work?
- \* Would I be able to express myself fully and develop personal talent and potential in the occupation?
- \* Does the occupation offer personal satisfaction, a sense of pride, and rewarding relationships with fellow workers?
- \* Is there a set plan to get work done with few unexpected changes? Should I expect to depend on someone's directions about how best to get the job done?

- \* Do you deal with printed information, materials, and data rather than people and machinery in the occupation?
- \* Is work with physical objects, machinery, or other equipment a major component of the occupation?
- \* Might I expect to spend most of my time with people in such activities as advising, supervising, bargaining, teaching, entertaining, controlling, or selling?
- \* Are there general location requirements of the occupation such as climate, region of the country, or specific cities?
- \* Are specific aptitudes, expert skills, special talents, or knowledge required?
- \* What type of compensation might I expect initially and over a period of time in the occupation? What are typical fringe benefits of employment?
- \* Are specific physical abilities necessary such as dexterity, coordination, above average sight or hearing, body size, or strength?
- \* Are there specific characteristics of the work environment such as whether you work alone, means of transportation, or whether surroundings are quiet and pollution-free?
- \* What types of co-workers might I expect--for example, level of education, degree of motivation, sex, race, or ethnic origin?
- \* Are there specific qualifications necessary for the occupation such as level of education, special training, age, union membership, or previous experience?
- \* Are there certain "time" aspects of the occupation such as seasonal peaks, flexibility of time off, required night shifts, or working irregular hours?

APPENDIX I

INTERVIEW EVALUATION FORM AND  
COVER MEMORANDUM

MEMORANDUM

TO:

FROM: Bill Miller  
Dean of Students

SUBJECT: Alumni Interview

An interview with a Roanoke College alumnus has been arranged for you on:

\_\_\_\_\_ at \_\_\_\_\_  
Day Date Time

NAME AND BUSINESS ADDRESS OF ALUMNUS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

OCCUPATIONAL AREA: \_\_\_\_\_

You should arrange to visit the alumnus at the time and place specified. If you need transportation arranged and/or directions to the alumnus' address, please contact my office as soon as possible. Please return the enclosed evaluation form to me after your interview has been completed. Thank you.

## INTERVIEW EVALUATION FORM

The program in which you are participating is the first phase of a campus-wide program in which more students will be participating later. This initial phase of the program is being evaluated in terms of its benefit to students at the college. Therefore, your participation and reaction are very important.

In a few sentences, please comment on your interview with an alumnus of the college. Return this form to Dean Miller in Bittle Hall as soon after your interview as possible.

NAME OF ALUMNUS VISITED \_\_\_\_\_

OCCUPATIONAL AREA \_\_\_\_\_

COMMENTS . . .

SIGNED \_\_\_\_\_

## VITA

Thomas Cato Tillar, Jr. was born in Radford, Virginia, on September 9, 1947. He attended primary and secondary public schools in Emporia, Virginia, graduating from high school in 1965. In September of that year he entered Virginia Polytechnic Institute and State University (VPI&SU) in Blacksburg, Virginia. Majoring in biology, he completed the requirements for the Bachelor of Science degree in June, 1970.

Later in 1970, he accepted employment with Squires Student Center at VPI&SU as Assistant Program Director. After serving in that capacity for two and one-half years, he was appointed Program Director of the Student Center. Concurrent with his employment in the Student Center, he enrolled in a graduate program in Student Personnel at the university, completing requirements for the Master of Arts degree in December, 1972.

In July, 1973, he accepted a position in Student Personnel at VPI&SU, serving as Coordinator of Fraternity/Sorority Affairs. The following July, he resigned the position to begin full-time advanced graduate study in Career Counseling/Student Personnel at the university. During the 1974-75 academic session, he also served as a Graduate Teaching Assistant assigned to the university's Office of Special Academic Programs.

In July, 1975, he was appointed Director of Alumni Services for the Virginia Tech Alumni Association. He continued study for the Doctor of Education degree in conjunction with employment in alumni activities programming and university advancement.

Concurrent with completion of doctoral study requirements, he plans to join the staff of the Office of University Development. He has accepted the position of Assistant Director of Development with the university.

He is married to Darrel Long Tillar, who also is a graduate of VPI&SU and employed by the university. They reside in Blacksburg.

Thomas C. Tillar, Jr.

THE EFFECTIVENESS OF THE COMPONENTS OF A CAREER  
EXPLORATION PROGRAM FOR COLLEGE FRESHMEN

by

Thomas C. Tillar, Jr.

(ABSTRACT)

The thesis of this investigation was that a systematic program of career exploration for college freshmen can improve their career decidedness. A Career Exploration Program was designed by the writer to facilitate two principal objectives of the career exploration process: (a) the understanding of personal needs and values which affect career decisions; and (b) the acquisition of meaningful career information from individuals in the world of work. The program consisted of two components designed to achieve these objectives. In the first component, a standardized self-appraisal inventory, the Hall Occupational Orientation Inventory (HALL), was administered to students following a ninety-minute orientation to decision-making theory. In the second component, college alumni were recruited to meet with students at work locations. Meetings were scheduled with alumni in careers corresponding to the students' stated interests. Students were encouraged to correlate information about themselves derived from the HALL with information obtained in interviews.

The investigation was conducted in 1977-78 at Roanoke College, a small private liberal arts college in Salem,



Virginia. One hundred-sixty freshmen were selected randomly to participate and assigned to one of four equal size groups. Group 1 served as a control. Group 2 received the orientation and completed the HALL. Group 3 interviewed alumni. Group 4 participated in both of these components of the program.

It was hypothesized that participation by Groups 2, 3, and 4 in the components of the program would result in students exhibiting greater career decidedness over the control group. The Assessment of Career Decision Making-Form B (ACDM-B), developed by Vincent A. Harren, was administered to members of each group at six week intervals in a pretest/posttest/post-posttest format. The instrument measured change in career decidedness along a continuum of four decision-making stages identified by David V. Tiedeman--exploration, crystallization, choice, and clarification. A multivariate analysis of covariance was used to test for group, sex, and group-sex interaction. A multiple comparisons analysis was used to compare all possible pairs of groups. A two-factor analysis of variance with repeated measures was performed to identify interaction effects across time.

In tests of the stated hypotheses, it was determined that: (a) students in Group 2 differed significantly (.05) from the control on the clarification stage; (b) students in Group 3 did not differ significantly from any of the groups; and (c) students in Group 4 differed significantly (.05)

from the control on the choice stage and on the ACDM-B weighted score.

It was concluded that the three groups receiving treatments exhibited movement in the hypothesized direction toward greater decidedness. Clearly Group 4, which participated in the combination of components, evidenced the greatest change in career decidedness. Sex was not found to influence career decidedness. The self-appraisal experience alone and the combination of self-appraisal and alumni interviews resulted in significant differences from the pretest to posttest. Significant interaction (.05) was found among group means on the tests. A slight decline was noted on the post-posttest for Groups 2 and 4, which exhibited significant change on the posttest. Conversely, Group 3, participating in only the alumni interviews, increased slightly on post-posttest scores--evidence of a delayed effect of treatment. The findings suggest that the integrated self-appraisal and alumni visitation program had a positive effect on the career decision-making behavior of college freshmen.