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THE EFFECTS OF A CAREER COURSE
ON THE CAREER MATURITY
OF UNDERGRADUATES

by

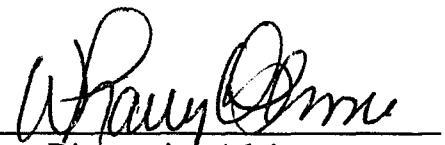
Chester Randall Robinson

A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro

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Approved by


Dissertation Advisor

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APPROVAL PAGE

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ROBINSON, CHESTER RANDALL, Ph.D. The Effects of a Career Course on the Career Maturity of Undergraduates. (1995)
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The purpose of this investigation was to examine the effect of participating in a career course on the career maturity of undergraduate students and to examine the relationship between various personal factors and career maturity. Standard scores from the subscales and composite scales of the Career Development Inventory (CDI) were employed as the primary dependent variables. Standard score differences were calculated by subtracting pretest scores from posttest scores on each scale and also were utilized as dependent measures for some analyses. 107 undergraduate students from the University of North Carolina at Greensboro volunteered to participate in the study. 64 were enrolled in an upper level elective course offered in the Counseling and Educational Development Department. These students were assigned to either a no-treatment control group ($n = 44$) or a computer-assisted career guidance systems (CACGS) treatment group ($n = 20$). The remaining 43 undergraduates were enrolled in a life/career planning class offered through the same department. These students comprised a second treatment group ($n = 43$).

The CDI was administered to each group twice, with an eleven-week time lapse between administrations. Additional data, such as demographic information, participation in career-related activities outside of class, reasons for enrolling in a career course, and critical learnings, were collected via questionnaires and a critical incident log. Depending upon the variable in question, analyses of covariance, analyses of variance, or t-tests were employed to analyze the data.

The main conclusions were that, overall, females demonstrated a greater level of career maturity than males, supporting the contention of the authors of the CDI; students

who participated in a career course tended to change their choice of preferred occupational group; participation in career-related activities outside of class had no effect on the career maturity of those students who did not participate in a career course and participating in a career course positively affected career planning attitudes. Finally career course students' DM and WW standard scores decreased from pretest to posttest suggesting an inverse relationship between participating in a career course and career decision making skills and knowledge of the world-of-work.

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I wish to acknowledge the efforts and commitment of my committee, Dr. W. Larry Osborne, Dr. Grace A. Kissling, Dr. Jeffrey S. Kane, and, in particular, Dr. James M. Benshoff, whose wisdom, humor, scholarship, and, especially, patience has been deeply appreciated. In addition, I wish to recognize my program colleagues, particularly Dr. James O. Fuller, Dr. Henry A. Lewis, and Charles Wood, who continually offered support and encouragement. I also want to express appreciation to my wife, Julia Robinson. Her support and tolerance made this "journey" pleasant. Finally, I express my deepest gratitude to my parents, Betty M. Robinson and the late J. Chester Robinson. Throughout my life, they ensured that I believed that I was capable of accomplishing anything that I truly wanted. I offer a hearty thanks to them all.

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CHAPTER 1

INTRODUCTION

Despite abundant research in the field, there is little substantive proof available marking the effectiveness of career interventions. Much of the documented research lacks several key ingredients: 1) soundness of experimental design; 2) a comparison/ control group; 3) a standardized outcome measure; and/or 4) sufficient sample size. While informative and suggestive of appropriate interventions, these investigations leave the practitioner with inconclusive evidence to support the selection of a career intervention for a particular population. In particular, career specialists at the college and university level are left with a dilemma in terms of choosing appropriate, cost-effective interventions. Consequently, these professionals are searching continually for more effective means of affecting the career maturity of individuals.

A variety of delivery systems for career development has been advocated (e.g., Goldstein, 1974; Gysbers, 1984). Individual and group counseling have been tried and researched (e.g., Davidshofer, Thomas, & Preble, 1976; Evans & Rector, 1978; Healy, 1974; Sherry & Staley, 1984). Computer-assisted career guidance systems (CACGS) have been examined as a viable career intervention (Blakley, 1991; Dungy, 1984; Garis & Harris-Bowlsbey, 1984; Gati, 1992; Lenz, Reardon, & Sampson, 1991). For-credit classes are a relatively recent intervention, having experienced rapid growth during the late seventies (Haney & Howland, 1978). While this approach has been employed for several years, little data exists to support its effectiveness as a career development intervention (Babcock & Kaufman, 1976; Evans & Rector, 1978). Of those investigations that report

effectiveness, few have employed a no-treatment control group (Heppner & Krause, 1979; Touchton, Wertheimer, Comfeld, & Harrison, 1977). Thus, the need for closer examination of the for-credit class as a career intervention was apparent.

Purpose of the Investigation

The purpose of this investigation was twofold:

1. To evaluate the effect of a specific career intervention (i.e., participating in a career course or utilizing CACGS) on the career maturity of undergraduate students.
2. To examine the relationship of various personal factors (i.e., gender, reasons for enrolling a career course, participation in out-of-class career-related activities, choice of preferred occupation) to the career maturity of undergraduate students.

This study was specifically designed to evaluate the effectiveness of completing a structured career course versus utilizing CACGS on undergraduate students' career maturity, as measured by the scales, both individual and composite, of the Career Development Inventory (Super, Thompson, Lindeman, Jordaan, & Myers, 1981).

Need for the Investigation

An examination of existing literature relating to career interventions suggested that past studies have focused on other types of interventions, such as individual career counseling, small group career counseling, short-term structured career interventions, and self-directed career guidance, but not career courses. A void existed in the literature describing investigations of semester- or quarter-long career interventions.

Statement of the Problem

This study investigated the effect that completing a career course versus utilizing CACGS versus no intervention has upon the career maturity of undergraduate students. It also attempted to identify a relationship between career maturity and choice of preferred occupation. Finally, it examined the relationship between change in career maturity and the reason(s) an undergraduate student chooses to enroll in a career course and the relationship between change in career maturity and the critical incidents during a career course which may lead to this change.

The basis for the study was the dearth of existing literature describing the effectiveness of a career course from an investigative, scientific perspective. It was hypothesized that the career maturity, as assessed by a standardized measure, of undergraduates who complete a career course would increase between the time of initial enrollment (first four class meetings) and the ten- to twelve-week point during a semester and that it would increase to a greater degree than the increase in career maturity of undergraduates who utilize CACGS or undergraduates who participated in neither the career course nor CACGS. The investigator also hypothesized that an interaction effect would be demonstrated between the reasons undergraduates choose to enroll in a career course and their change in career maturity during the period of time under consideration.

Research Questions

The primary research question was: Are there any differences in career maturity change between undergraduates who complete a career course, undergraduates who only utilize CACGS as a career intervention, and those who do neither? Based upon preliminary investigations, the investigator hypothesized that differences would exist (i.e., undergraduates who complete the class would exhibit greater participation in career

planning and exploration, have better attitudes toward career planning and exploration, exhibit better career decision-making skills, and have more knowledge about the world of work and their preferred occupation than those undergraduates who utilized CACGS or those undergraduates who neither complete a career course class nor utilized CACGS), but that the relative strength of these differences may be in question.

A group of secondary research questions, developed from this general consideration of career maturity change, included:

1. Do undergraduates who complete a career course change more in their career planning attitudes than those who utilize CACGS or those who do neither?
2. Do undergraduates who complete a career course change more in their career exploration attitudes than those who utilize CACGS or those who do neither?
3. Do undergraduates who complete a career course change more in their skills for decision-making than those who utilize CACGS or those who do neither?
4. Do undergraduates who complete a career course change more in their knowledge about the world of work than those who utilize CACGS or those who do neither?
5. Do undergraduates who complete a career course change more in their career development attitudes than those who utilize CACGS or those who do neither?
6. Do undergraduates who complete a career course change more in their career development knowledge than those who utilize CACGS or those who do neither?
7. Do undergraduates who complete a career course change more in their overall career orientation than those who utilize CACGS or those who do neither?

These questions related to four of the five individual scales (CP, CE, DM, WW) and all of the composite scales (CDA, CDK, COT) of the Career Development Inventory (Super et al., 1981). Based upon preliminary investigations, the investigator hypothesized that differences would exist (i.e., participants would exhibit an increase on all scales over non-participants), but that the relative strength of these differences may be in question.

Another area of research interest to be considered was choice of preferred occupational group. The related research question was: Do more undergraduates who complete a career course change their choice of preferred of occupational group as compared to undergraduates who utilize CACGS or undergraduates who do not complete a career course? The author postulated that undergraduates who choose to complete a career course may, initially, be less focused in their preferred occupational group, having interests in many areas. As these students participate in the various activities required for successful completion of the career course, they become more focused and, perhaps, will develop a stronger interest in one particular preferred occupational group.

A final group of research questions related to demographic factors:

1. Are there any differences in career maturity change between male and female undergraduate students both within and between groups?
2. Are there any differences in career maturity change within the treatment group related to reasons for enrolling in the course?
3. Are there any differences in career maturity change related to participation in career development activities outside of class both within and between groups?

Existing literature suggested that females exhibit a somewhat higher level of career maturity on cognitive measures, though this does not necessarily hold true for career development change (Crites, 1978; Lunneborg, 1978; Nevill & Super, 1988; Super &

Nevill, 1984). Osborne (personal communication, April 6, 1994) observed that students enroll in career courses for many reasons, both career- and non-career-related.

While other demographic factors could be considered, existing literature offered evidence that researchers agree on the relationship of the following factors to career maturity:

1. Whites exhibit a higher level of career maturity on cognitive measures than do nonwhites (Leong, 1991; McNair & Brown, 1983; Karayanni, 1981).
2. Socioeconomic status has no bearing upon career maturity (Luzzo, 1991; Nevill & Super, 1988; Super & Nevill, 1984).
3. Freshmen and sophomores exhibit a greater degree of participation in career exploration while juniors and seniors exhibit a greater degree of participation in career planning, more knowledge about the world of work and their preferred occupations, and greater skill in career decision making (Nevill & Super, 1988).

Consequently, these factors were not examined in this investigation.

Definitions of Terms

Career

Jepsen (1992) defined career as “one person’s experiences at work” (p. 99). For the purpose of this investigation, career was defined as “the externally judged sequence of positions during the course of preoccupational, occupational, and postoccupational life” (Super & Hall, 1978, p. 334). Thus, the term career refers to more than simply work experiences.

Career Maturity/Career Development/Vocational Maturity

Thompson et al. (1984) suggested that career development, career maturity, and even “career adaptability” be used interchangeably in referring to this “multidimensional trait

that is part affective, part cognitive, and increases irregularly with age and experience” (p. 7). They further refined the definition by discussing career maturity as a tripartite construct. First, affective career maturity includes planfulness, an awareness of and willingness to address developmental career tasks, and engagement in exploration, decision-making, planning, and plan implementation. Second, cognitive career maturity includes the acquisition of information, learning about career decision-making, self knowledge, realism in adapting information to self, and consistency of career objectives allowing for modification as experience increases. Third, increases and decreases in career maturity or adaptability, based upon experience with situational variables relating to confronting the need to make career decisions and facilitating coping with career decisions, must be considered.

For this investigation a more concise definition was employed: Career maturity is a theoretical construct representing an individual’s stage of vocational development along a continuum of vocational tasks, attitudes, skills, and behaviors (Crites, 1961, 1965; Super 1955; Super & Overstreet, 1960).

Career Intervention

Career intervention appears in the literature as a very versatile term. Consequently, the best definition of “career intervention” was a succinct one: “Any activity or program designed to facilitate career development” (Fretz, 1981, p. 78).

Career Course

Structured semester- or quarter-long for-credit career interventions at the college and university level are referred to by a variety of names including, career courses (Babcock & Kaufman, 1976; Haney & Howland, 1978), career development seminars (Ganster & Lovell, 1978), career seminar courses (Heppner & Krause, 1979), life planning/career

development courses (Gardner, Beatty, & Bigelow, 1981), and life/career planning classes (Glaize, Culp, & Irwin, 1991). For this investigation, these types of career interventions were referred to by the term “career course,” seemingly the most pervasive in the literature.

Computer-Assisted Career Guidance Systems (CACGS)

Gati (1992) describe CACGS as “an implementation of accumulated knowledge about career guidance which permits better career decisions making” (p. 4). Garis and Harris-Bowlsbey (1984) describe them as the searching of “large data files by combinations of desired characteristics and the retrieval and display of requested information about options identified” (p. 6). CACGS are typically commercially produced and distributed computer software packages designed to supplement or enhance individual career counseling. Popular CACGS include the System of Interactive Guidance and Information (SIGI) (Educational Testing Service, 1984), SIGI Plus (Educational Testing Service, 1990), and DISCOVER (American College Testing Program, (1988).

Career Planning

Career Planning (CP) is one of the individual scales on the Career Development Inventory (CDI). It is primarily a conative or affective attitudinal measure which includes reports of career planning activities in which the subject has engaged (Thompson et al., 1981).

Career Exploration

Career Exploration (CE) is another of the individual scales on the CDI. It, too, is primarily an affective attitudinal measure in which the subject rates sources of career information and the usefulness of the information. Its essence is the comparison of good and poor sources of information (Thompson et al., 1981).

Decision-Making

Decision-Making (DM) is a third individual scale on the CDI. Using brief vignettes, it measures the subject's ability "to apply knowledge and insight to career planning and decision making" (Thompson et al., 1981, p. 2). It is primarily a cognitive measure.

World-of-Work Information

World-of-Work Information (WW) is a fourth of five individual scales on the CDI. Also a cognitive measure, it tests the subject's knowledge of the process of obtaining and maintaining a job (Thompson et al., 1981).

Career Development Attitudes

Career Development Attitudes (CDA) is a composite scale of the CDI combining the CP and CE scales. Combining these scales increases the reliability of the CDI as an attitudinal measure (Thompson et al., 1981).

Career Development Knowledge

Career Development Knowledge and Skills (CDK), as coined by Thompson et al. (1981), is another composite scale of the CDI. It combines the DM and WW scales and reflects the interrelatedness of making career decisions based upon knowledge about the world-of-work.

Career Orientation

Referred to as Career Orientation Total (COT) in the CDI Volume 1: User's Manual (Thompson et al., 1981), this composite scale is the most inclusive of all. It combines CP, CE, DM, and WW. It most closely reflects an overall approximation of career maturity.

Preferred Occupational Group

“Preferred Occupational Group” is the fifth individual scale on the CDI. In this investigation, however, it was considered at face value. Individuals who complete the CDI are asked to select from twenty alternatives the occupational group which appeals most to them. Each occupational group alternative consists of five specific occupations and a space in which individuals can add an occupation which they feel belongs in that group.

Organization of the Study

This investigative study of the effects of a career course on the career maturity of undergraduates is presented in five chapters. Chapter I offers a succinct review of the literature related to career interventions, especially career courses, and subsequent efforts to evaluate their effectiveness utilizing a variety of outcome measures. The purpose of the study, need for the study, problem statement, research questions and hypotheses, definitions of terms, and organization of the study are described.

Chapter II provides a more thorough review of the literature. Career maturity as a construct is discussed, including the contributions of Dr. Donald E. Super, his Career Pattern Study, and further expansions and refinements of career development theory. The Career Development Inventory (Super et al., 1981) as an investigative tool is reviewed from its measurements aspects as well as its utility in examining the relationship between career maturity and other personal constructs and program evaluation. Finally, individual career interventions, group career interventions, CACGS, and career courses as career interventions are compared followed by a review of evaluations of career course effectiveness.

Chapter III outlines the methodology of the investigation. It includes the research hypotheses, treatment plan, dependent measures, participants, research design, procedures, strengths and limitations, and the statistical analysis.

Chapter IV details the results of the investigation. It includes a discussion of the data analysis and the results as they relate to the research questions and hypotheses.

Chapter V outlines a summary of the investigation and discusses the conclusions drawn from examining the data analysis in relation to the hypotheses. It also discusses the implications for undergraduate career interventions, undergraduate career courses, and the training of career course instructors. In addition, the limitations of the investigation are discussed along with recommendations for further research.

CHAPTER II

Review of the Literature

This review of the literature examines the suitability of career maturity as a measure of career intervention effectiveness by reviewing its development as a construct. It also examines research utilizing the Career Development Inventory (CDI) as an investigative tool. Additionally, the literature describing and comparing career interventions, including individual interventions, group interventions, computer-assisted career guidance systems (CACGS), and career courses, is reviewed. Finally, specific reports from investigations examining the effectiveness of career courses are summarized.

Career Maturity as a Construct

Initially coined as “vocational maturity” by Super (Amatea, 1984) “to epitomize the changing yardstick of unique career related behaviors that make up career development at different life stages” (p. 32), career maturity is used to “place” an individual on the career development continuum based upon that individual’s degree of development as evidenced by the successful accomplishment of specified developmental tasks associated with Super’s stages of career development (Super, 1957). Super’s (1955) original definition, as cited in Bailey and Stadt (1973), follows:

The term vocational maturity is now used to denote the degree of development, the place reached on the continuum of vocational development from exploration to decline. Vocational maturity may be thought of as vocational age, conceptually similar to mental age.... The place reached on the vocational development

continuum may be described not only in terms of the gross units which constitute the life stages but also in terms of much smaller and more refined units. (p. 99)

Crites (1961), too, focused on vocational maturity as a construct. Utilizing much of the same research as Super and his associates, he initially proposed a model of adolescent vocational maturity in 1961. His model postulated a general factor, four group factors, and 18 specific factors. Subsequent research and assessment instrument development have focused upon only the affective or attitudinal components of vocational maturity.

Career maturity has three distinct characteristics: 1) it is monotonic (Crites, 1978); 2) it includes affective, cognitive, and behavioral components (Fouad & Keeley, 1992); and 3) it is multi-dimensional (Ganster & Lovell, 1978). Though the term “career maturity” is not found in Super’s (1953) original treatise in which he presented the concept of “vocational maturity”, others have further developed the construct. Super himself denied that he had formulated a career development theory, instead crediting himself with only developing what would perhaps be the beginnings of several theories of career development (Zunker, 1981).

Crites (1978) described career maturity as a monotonic construct, operationally, one whose magnitude increases with age and grade. A 1979 study by Jordaan and Heyde supported Crites monotonic postulation. Though not writing in direct opposition, the tone of Super and Hall (1978) suggested little support for Crites’ theory: “Crites may have adhered too rigidly to the age-increase requirement; development may not proceed as evenly as he has postulated” (p. 339). More emphatically, the results from a 1987 study by Smith did not support the notion that career maturity increases with age and grade. Smith (1987), however, questioned his own results since several of his findings refuted previous research outcomes related to career development and career maturity.

The affective components of career maturity include planfulness and exploration (Super & Thompson, 1979); cognitive, information and decision making (Super, 1983); and behavioral, actions based upon these other components. Super (1983) included three sub-components in planfulness: autonomy, time perspective, and self-esteem. Autonomy (also referred to as “locus of control”) reflects the idea that planning can occur only when individuals believe that they can control their careers. Time perspective influences planning through thoughtful reflection upon past experiences and anticipation of the future. Self-esteem is a precursor to autonomy. In general, individuals must believe in their own self-worth in order to feel “in control” of their careers. Exploration as an affective component includes the attitudes an individual develops towards career resources as well as the attitudes that are developed towards the behaviors involved in accessing these resources.

Information, a cognitive component, is nearly all-inclusive as it relates to career development. It includes the world of work, the various life stages, developmental tasks and characteristics, knowledge of preferred occupations, and coping strategies. The second cognitive component, decision making, includes “knowledge and commitment of the principles of decision making, ability to apply these, and decision-making styles” (Super, 1983, p. 558).

The final component, reality orientation, is actually a combination of several components and elements. “It consists of self-knowledge, realism in self and situational assessment, consistency of career-role preferences, crystallization of self-concepts and of career goals, and of stabilization in major life roles such as those of worker, homemaker, citizen, and leisurite” (Super, 1983, p. 558).

Ganster and Lovell (1978) viewed career maturity across four dimensions:

“1) Consistency of career choice over time; 2) Attitudes about work itself; 3) Involvement

and independence of the individual in the choice process; and 4) Ability to assess one's own abilities and personal preferences and match them with occupational requirements" (p. 172).

Contributions of Dr. Donald E. Super

Super offered career development professionals a new perspective on career development in 1953. Criticizing Ginzberg, Ginsburg, Axelrad, and Herma's (1951) theory of vocational behavior for ignoring the continuing vocational development of the individual, he attempted to synthesize current thinking by summarizing a "theory" of vocational development. Super (1953, as cited in Bailey & Stadt, 1973) suggested eight propositions:

1. People differ in their abilities, interests, and personalities.
2. They are qualified, by virtue of these characteristics, each for a number of occupations.
3. This process may be summed up in a series of life stages.
4. The nature of the career pattern (that is, the occupational level attained and the sequence, frequency, and duration of trial and stable jobs) is determined by the individual's parental socioeconomic level, mental ability, and personality characteristics, and by the opportunities to which he [sic] is exposed.
5. Development through the life stages can be guided.
6. The process of vocational development is essentially that of developing and implementing a self-concept.
7. The process of compromise between individual and social factors, between self-concept and reality, is one of role playing.

8. Work satisfactions and life satisfactions depend upon the extent to which the individual finds adequate outlets for his [sic] abilities, interests, personality traits, and values. (pp. 69-70)

Building upon these tenets, Super (1957) specified a vocational development structure of stages, ages, and developmental tasks, the accomplishment of which is necessary for an individual to succeed in a stage and to progress to the successive stage. These stages and tasks (substages) are summarized in Figure 1.

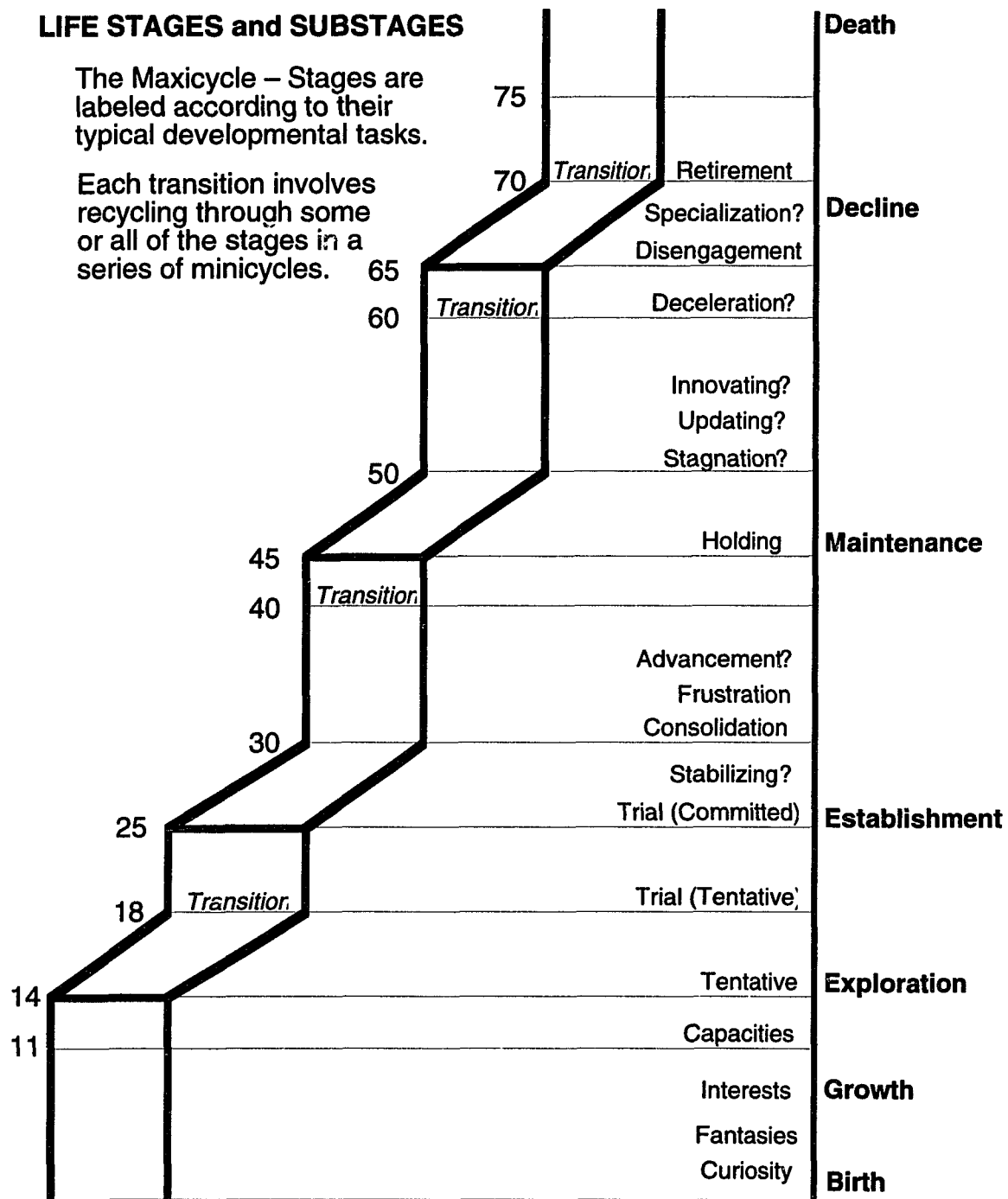
Insert Figure 1 about here.

The Career Pattern Study

In 1951, Super initiated a project sponsored by the Horace Mann-Lincoln Institute of School Experimentation at Columbia University, designed to investigate his vocational development theory. In this longitudinal study, Super collected attitudinal data from a sample of 142 eighth-grade and 143 ninth-grade boys (Bailey & Stadt, 1973). He collected similar data from these same individuals during their twelfth-grade year and again at age twenty-five. From this data, he examined the differences in the evolution of five behavioral dimensions for individuals across time and for the group as a whole across time. The five behavioral dimensions were: 1) orientation to vocational choice, 2) information and planning about preferred occupations, 3) consistency of vocational preferences, 4) the crystallization of traits, and 5) wisdom of vocational preference (Amatea, 1984).

The results of this study suggested that ninth-grade boys were unable to make adequate career decisions due to insufficient understanding of the world of work. In addition, vocational maturity appeared to be related more to intelligence than to age.

Figure 1. Life stages and substages according to Super's theory of career development.



Based on Super, D. E. (1957). The Psychology of Careers. New York: Harper and Row. Modified in the light of subsequent research, in Career and Life Development, Ch. 8, in Brown, D., & Brooks, L. (1984) Career Choice and Development. San Francisco: Jossey-Bass.

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However, those students who seemed more vocationally mature as ninth-graders proved to be more successful (vocationally) as young adults. These findings suggest a relationship between career maturity and adolescent achievement of adequate self-concept, world-of-work knowledge, and planning capability (Zunker, 1981).

Theory Developments and Refinements

Several researchers and theorists have added to Super's original theory of career maturity (e.g., Amatea, 1984; Crites, 1961; Fouad & Keeley, 1992; Ganster & Lovell, 1978). Super himself has continued to refine and adapt his own tenets (Nevill & Super, 1988; Super, 1974; Super & Hall, 1978; Super & Nevill, 1984; Super, Starishevsky, & Jordaan, 1963; Super & Thompson, 1979). Crites, an early colleague of Super (Super et al., 1957) is associated particularly with developing the construct of career maturity. In a 1961 treatise, Crites outlined five definitions of "vocational maturity." The definitions are summarized as follows:

- 1) "The degree of development, the place reached on the continuum of vocational development from exploration to decline" (Super, 1955, p. 153, as cited in Crites, 1961, p. 256);
- 2) Identifying individuals' life stages by noting the developmental tasks they are addressing;
- 3) A relative degree of vocational development, determined by comparing vocational life stage with chronological age;
- 4) A relative degree of vocational development, determined by comparing vocational life stage with expected life stage; and
- 5) A relative degree of vocational development, determined by comparing one's vocational life stage with the behavior of others (Crites, 1961).

Crites (1961) proceeded to offer general criticisms of these definitions. He suggested one primary shortcoming was that, in assessing the career maturity of an individual, the individual might be considered vocationally mature by one definition but vocationally immature by another. Noting that four of the definitions relate to an age-scale, he observed the similarity between these and definitions of intellectual development, likewise noting the problems associated with assessing intelligence. He also pointed out that the fifth of these definitions of vocational maturity used a point-scale model. Again, the problems related to this definition are similar to those associated with intelligence measures using similar scales—i.e., they must correlate with age in order to “support a measure of behaviors which mature over time” (Crites, 1961, p. 257).

Crites (1961) concluded this treatise with a proposed comprehensive definition of vocational maturity. He offered a bimodal approach. One suggestion was to define vocational maturity by behavior and developmental tasks. This could be accomplished first by identifying individuals’ developmental stages and life tasks from their chronological ages, and then determining their level of vocational maturity by their behaviors. His second suggestion was to combine the best concepts from age-scale models and point-scale models to create an “optimal measurement model for vocational maturity” (Crites, 1961, p. 258).

More than a decade later, Super (1974) suggested that career maturity be changed to career adaptability when referring to adults. He supported this change by citing that adults often “recycle” through several processes of career development, including growth, exploration, establishment, maintenance, and decline, and that these processes are much less age-dependent for adults than for adolescents. Years later, Betz (1988) and Fretz (1981) conceptualized career maturity primarily in behavioral terms: an individual makes a

career choice, implements that choice, is satisfied with that choice, and exhibits job-related behaviors leading to successful work performance.

The CDI as an Investigative Tool

Measurement Characteristics

The use of the CDI as an investigative tool has been examined by several researchers (Bauernfeind et al, 1986; Punch & Sheridan, 1985; Savickas, 1989). Punch and Sheridan (1985) analyzed the CDI from a measurement perspective. They noted that the construction of the CDI was as it purported to be but that some “misfitting” items were included in each section. They recommended that these items “should be deleted from analysis to preserve the unidimensionality of the components” (Punch & Sheridan, 1985, p. 200). Likewise, Savickas (1989) suggested changes and improvements to the CDI. In a multi-instrument review, Savickas (1989) highlighted the need for research to further establish the criterion validity of the CDI. He suggested that “researchers could relate the CDI variables to future orientation, causal attribution, and self-efficacy to learn if these personality variables condition career planning and exploration attitudes” (Savickas, 1989, p. 17). In a review of 20 career guidance measures, Bauernfeind et al. (1986) recommended that the CDI be limited to research and program assessment. They further asserted that “at this point in time, the CDI is not recommended for individual counseling use in career guidance” (p. 29). A number of examples of these recommended uses of the CDI are found in the literature. They cluster in two categories: 1) variable description, and, 2) program assessment.

Correlations with Other Variables

Neimeyer, Nevill, Probert, and Fukuyama (1985) utilized the CDI in conjunction with the Cognitive Differentiation Grid (Bodden, 1970) and the Career Decision Scale

(Osipow, Carney, & Barak, 1976) in an effort to relate vocational development to cognitive structure. Neimeyer et al.'s (1985) results clarified the relationship between cognitive structure and some components of vocational behavior. They noted that "the finding that vocational decision making, career exploration, and career planning varied as a function of cognitive structure supports the relevance of cognitive schemata in vocational development" (p. 198). They also found a relationship between higher levels of differentiation and lower levels of career planning while lower levels of cognitive integration were related to higher levels of career exploration.

Luzzo (1991) sought to link career maturity to more concrete variables—social class and ethnicity. He assessed the social class, ethnic group membership, and career maturity of 401 undergraduates. To determine social class, Luzzo (1991) gathered data about the students' parents' occupations and marital status. He then coded this data utilizing the Duncan Index (Duncan, Reiss, Hatt, & North, 1961). For career maturity, Luzzo (1991) included the Career Maturity Inventory-Attitudes Scale (Crites, 1978) and the decision making scale of the CDI. Ethnic background data was collected via self-report by the participants. Luzzo (1991) found no significant differences in career decision making skills between subjects of various ethnic backgrounds. He also found no significant difference in career decision making skills nor career maturity between subjects of various social classes. Luzzo (1991) was able to report that Caucasian-Americans demonstrated significantly greater career maturity than Filipino and Asian-American students.

Super employed the CDI in his own continuing research as well. In a 1984 study with Nevill, he sought to relate career maturity to work role salience. Appropriate data were collected utilizing several instruments in addition to the CDI: Personal Data Blank, developed particularly for this study, and the Salience Inventory (Super & Nevill, 1983).

From the data analyses, the following results were reported: 1) there was no relationship between socioeconomic status and career maturity as measured by the CDI; 2) females demonstrated slightly higher career maturity than did males; 3) participation in and commitment to work were related to career development attitudes but not career development knowledge; 4) commitment to work was positively correlated with career maturity; 5) commitment to home and family roles was positively related to career development attitudes but not career development knowledge; 6) males demonstrated slightly greater commitment to work than did females while females demonstrated slightly greater commitment to home and family than did males; 7) commitment to homemaking was related to gender; and, 8) a linear combination of work importance measures was related to a linear combination of career maturity scales.

In a subsequent study, Nevill and Super (1988) examined the relationship between career maturity and commitment to work in university students. Utilizing the CDI and the Salience Inventory (Super & Nevill, 1986), Nevill and Super (1988) found a significant relationship between commitment to work and career maturity. In addition, they found that while males had participated more in work than had females, females were more committed to work than were males. However, females had participated more in home, were more committed to home, and expected to realize more values through home than did males. Their results supported their earlier findings regarding career maturity and socioeconomic status: “SES did not appear to be related to career maturity” (Nevill & Super, 1988, p. 145).

Uses in Program Assessment

Likewise, the CDI has been utilized in program assessment (e.g., Healy, 1974; Rodriguez & Blocher, 1988). Healy (1974) reported on the effectiveness of a group

counseling procedure in which clients met weekly in groups of three to seven members for five two-hour sessions with one or two counselors. Employing the CDI as one of several measures, he combined four scales from the CDI into three factor scores: planning orientation, resources for exploration, and information and decision making. His results suggested that this intervention design was “effective in helping clients to increase the certainty of their career plans and their willingness to engage in planning” (Healy, 1974, p. 38).

Rodriguez and Blocher (1988) investigated the relative merits of two different approaches for enhancing career maturity in Puerto Rican college females. One approach was a modified version of the Adkins Career Choice Modular Program (Adkins, Wylie, Grothe, Kessler, & Manuele, 1975) which “facilitates individual awareness of the career choice process by the continuous use of models presented both in written and visual form” (Rodriguez & Blocher, 1988, p. 275). The second approach utilized a discussion format focusing on occupational information, personal values, self-assessment, goal setting, and decision making. A control group experiencing a general college orientation program was included as well. Career maturity was measured via the CDA and CDK scales of the CDI (Super et al, 1981) and the Adult Vocational Maturity Assessment Interview (AVMAI; Manuele, 1983), a structured, in-depth interview protocol. Rodriguez and Blocher (1988) reported no statistically significant difference in the career maturity of either treatment group. “Both of the experimental treatments produced statistically significant results when compared with the control group on a measure of career maturity especially developed for disadvantaged adult populations” (Rodriguez & Blocher, 1988, p. 279).

These descriptive and evaluative studies serve to highlight the utility of the CDI as an investigative tool. The partial results of these investigations confirmed the findings of

earlier studies which used other measures of career maturity. In addition, the CDI has been shown to be a stable measure of career maturity when variables other than career maturity were being considered.

A Comparison of Career Interventions

Davis and Horne (1986) offered the following thesis:

“...three primary modalities of personal career development assistance are most common: individual career counseling, which has existed since the beginning of the vocational guidance movement and continues to be the most common; small-group counseling which emerged in the 1950's with the general advent of group procedures; and career courses, which first appeared in the 1930's but have changed and developed considerably in the past 10 to 15 years into career exploration and decision-making courses” (p. 255).

All of these approaches have been proven valuable and effective as career development interventions through earlier research (Babcock & Kaufman, 1976; Bartsch & Hackett, 1979; Davidshofer, Thomas, & Preble, 1976; Krivatsy & Magoon, 1976; Schenk, Johnson, & Jacobsen, 1979). Oliver and Spokane (1989), in a meta analysis of career counseling research, confirmed that career counseling interventions are generally effective. They found that “the average experimental subject in the 58 studies reviewed...stood at the 79th percentile of the control group distribution” (p. 3).

Others have viewed career interventions somewhat differently than Davis and Horne. Feller (1992) delineated six career interventions: individual counseling, group counseling, career guidance classes, life work planning workshops, self-directed instruction, and computer and video technology processes. Spokane (1991) suggested that career interventions should be classified according to client investment and counselor

involvement. He offered five levels of career interventions: 1) information, which includes booklets, audiotapes, and reference materials; 2) self-directed activities, which include computer-assisted interventions, self-paced work stations, and self-administered assessment instruments such as Holland's Self-Directed Search (1974); 3) alternative treatment modes, which include workshops, job clubs, and career courses; 4) group counseling, both structured and unstructured; and, 5) individual counseling.

In colleges and universities, some or all of these interventions are utilized, although not necessarily on an equal basis. Based upon a 1979 survey of career development services on college and university campuses (Reardon, Zunker, & Dyal, 1979), approximately 85% of the respondents offered individual career counseling, 68% small-group counseling, and only 29% career development courses for college credit.

Aside from deciding which career interventions to investigate, researchers also are challenged to select appropriate outcome measures. Feller (1992) suggested that "there are at least three major outcomes of career counseling—making a choice, acquiring decision making skills, and enhancing general adjustment" (p. 3). Others have suggested that decidedness and degree of indecision are valid outcome measures (Garis & Niles, 1990; Johnson & Smouse, 1993; Peterson, Ryan-Jones, Sampson, Reardon, & Shahnasarian, 1987)). McAuliffe, Pickering, and Calliotte (1991) utilized decision readiness as a diagnostic tool while employing vocational identity, defined as "possession of a clear and stable picture of one's goals, interests, and talents" (Holland, Gottfredson, & Power, 1980, p. 1191), as an outcome measure. In their meta analysis, Oliver and Spokane (1989) found that most researchers did not use standardized outcome measures and that many failed to even search for a previously used measure of their outcome variable (e.g., Branyon & Piotrowski, 1986). Career maturity is frequently selected as an outcome

measure, particularly in investigations involving a career course as the intervention of interest (Babcock & Kaufman, 1976; Ganster & Lovell, 1978; Gardner, Beatty, & Bigelow, 1981; Neimeyher, Nevill, Probert, & Fukuyama, 1985). Bernardelli, De Stefano, and Dumont (1983) emphasized that career maturity should be the primary focus of career-related research, if enhancing career development is the desired outcome.

All interventions are not appropriate for all clients. McAuliffe et al. (1991) suggested that “there is a segment of undecided individuals for whom essentially rational, information-oriented interventions are unhelpful” (p. 3). Others have expressed caution about the application of the “uniform client hypothesis” (Fretz, 1981; Oliver & Spokane, 1988) in which the service provider treats all clients in a similar manner.

However, Oliver and Spokane (1989) pointed to one very important characteristic of successful career interventions— intensity of treatment which involves the number of counseling hours and number of counseling sessions. They did extend a word of caution in that this intensity was confounded with treatment type. In a summary based upon cost per effect size per client contact hour, the workshop/structured group (1.28 effect per hour, cost \$2.51) appeared to give the most benefit. Ranking classes and individual counseling proved to be more challenging. Individual counseling was determined to be superior when effect per hour is considered (5.21 to .98); the class intervention, however, can be had at nearly half the cost of individual counseling (\$10.87 to \$20.69).

Individual Career Interventions

Based upon the previously noted meta analysis, an argument can be made, regardless of cost, that individual career counseling is the most effective career intervention available. Quantitatively, Oliver and Spokane’s (1989) use of a generic “effect size” is an excellent choice as a measure of intervention effectiveness. However, an argument also can be made

for client reaction to intervention, a subjective measure, as a measure of intervention effectiveness (Graff, Danish, & Austin, 1972). That is, an intervention can be considered effective if the client considers it to have been effective.

Graff et al. (1972) investigated the effectiveness of three different kinds of career interventions (individual counseling, group counseling, and programmed self-instruction) using this measure of client reaction. Results suggested that all three types of interventions were equally effective in areas such as values clarification, instrument interpretation, interaction of career and personal-social factors, and creating awareness of the various academic majors. Their findings also indicated that programmed self-instruction was more effective than individual or group counseling in vocational information acquisition, decision-making, and goal setting. From these results, they suggested an approach combining programmed self-instruction with either individual or group counseling.

In a similar study, Krivatsy and Magoon (1976) compared three counseling treatments – two self-administered interventions and “traditional vocational counseling.” Their findings were similar to those of Graff et al (1972): “While treatment differences abound, indications are that all three treatments were about equally effective, in that subjects performed similarly on the majority of outcome measures” (Krivatsy & Magoon, 1976, p. 116). Their results did suggest, however, that the self-administered modes were less expensive and left clients with a greater sense of closure than traditional vocational counseling.

In a much earlier study, Hewer (1959) compared the relative effectiveness of group counseling and individual counseling using subjects from a “college class in vocations.” Using realism of vocational choice, assessed by the subjective evaluation by four counselors, she found inconclusive results due to the disagreement among the counselors

regarding the outcome measure. She tentatively suggested that both interventions were equally effective.

Prior to Hewer's (1959) study, Hoyt (1955) sought to prove that group career interventions were as effective as individual career interventions. He investigated three hypotheses: 1) individual career interventions would be effective in achieving four objectives related to vocational choice; 2) group career interventions would be effective in achieving four objectives related to vocational choice; and, 3) students participating in this investigation would achieve the four objectives regardless of treatment assignment. All three hypotheses were supported by his results.

Cooper (1986) also compared individual and group career counseling, but used career indecision as an outcome measure. He was unable to prove the effectiveness of one intervention over the other. His findings were clouded by his use of a small sample ($n = 12$ per group) and the similarity of majors of the participants.

In contrast to other studies, Borman (1972) found that students who received career counseling utilizing a certain reinforcement style were no more likely to engage in a greater variety of information-seeking behavior than students in active and inactive control groups. However, he did qualify his findings by noting a significant interaction between treatment and the level of motivation for educational and vocational planning of the students.

Group Career Interventions

Glaize and Myrick (1984) hailed group career counseling (particularly the Vocational Exploration Group, a structured, small-group career counseling intervention) as a "promising" career intervention. Likewise, Smith and Evans (1973) supported a structured group guidance experience as an effective career intervention. Davidshofer, Thomas and Preble (1976) and Healy (1974) also found the group structure advantageous,

focusing upon the peer interaction within the group. In fact, group counseling as a career intervention has many advocates (e.g., Hoffman & Cochran, 1974; Mathewson, 1970; Tolbert, 1978).

Equally impressive is the number of studies investigating group counseling as a valuable career development intervention (e.g., Borgen, 1978; Graff et al., 1972; Hansen, 1976; Perovich, 1980; Westbrook, 1973). Sherry and Staley (1984) provided the strongest case in support of group counseling interventions for career development: “Previous research has shown that groups that have received occupational and test interpretation information (Westbrook, 1974) or have discussed Holland’s (1973) theory have achieved career development” (p. 159).

Results from a 1981 investigation by Kivlighan, Hageseth, Tipton, and McGovern supported the effectiveness of group counseling as a career intervention, but for only a specific group of counselees – those whose sociability could be identified as people-oriented as opposed to task-oriented. Those counselees identified whose sociability was identified as task-oriented demonstrated greater progress when participating in structured, didactic career interventions.

Based upon Lunneborg’s (1983) assertion that group career interventions vary in the degree of focus, from a highly structured, focused group to an unstructured general process-oriented group, Spokane (1991) suggested that group career counseling be discussed from two vantage points: structured and unstructured. However, he noted that “...most of the published work on group career counseling refers to structured groups, [while] process-oriented groups are still only vaguely described” (p. 152).

In comparative investigations with college and university students, group career counseling has been found to be equivalent to or more effective than individual career

counseling, particularly for large numbers of students or when many variables have been involved (Fretz, 1981; Rounds & Tinsley, 1984; Spokane & Oliver, 1983). In contrast to these findings and their own research hypotheses, Cooper (1986) and Cooper and Van Matre (1984) found no significant difference between group and individual vocational counseling for indecisive clients. Possible explanations included small sample size and limited time between pre- and post-test. Cooper (1986) suggested that individual and/or group interventions for indecisive clients may be equally effective.

Two of the harshest criticisms of group career interventions are echoed in other types of career interventions: 1) there is definite lack of research on group vocational counseling (Kagan, 1966; Thoresen, 1969) and, 2) much of the research that has been reported in the area of group career counseling is actually individual counseling in a group setting (Zimpfer, 1968).

Computer-Assisted Career Guidance Systems (CACGS)

Feller (1992) suggested that computer and video technology processes be considered one of six classifications of career interventions. Gati (1992) described CACGS as “an implementation of accumulated knowledge about career guidance which permits better career decisions making” (p. 4). Referring to them as computer-based guidance systems, Garis and Harris-Bowlsbey (1984) described CACGS as the searching of “large data files by combinations of desired characteristics and the retrieval and display of requested information about options identified” (p. 6). CACGS, such as the System of Interactive Guidance and Information (SIGI) (Educational Testing Service, 1984), SIGI Plus (Educational Testing Service, 1990), and DISCOVER (American College Testing Program, 1988) fall into this category.

The development of a variety of CACGS during the early 1970's led to a series of investigative studies during the late 1970's and early 1980's and has continued into this decade. While many locally and regionally-developed CACGS have been developed (ACSCI, 1985), these investigative studies primarily focused on SIGI, SIGI Plus and Discover (e.g., Dungy, 1984; Garis & Harris-Bowlsbey, 1984; Garis & Niles, 1990; Peterson et al., 1987; Sampson et al., 1987) while descriptive studies addressed CACGS in general (e.g., Gati, 1992).

Although CACGS are utilized by innumerable clients daily (Sampson & Reardon, 1990), Dungy (1984) and Gati (1992) have expressed concerns regarding this utilization. Dungy (1984) hypothesized that not all clients are suited for or are ready to utilize CACGS. She subsequently sought to develop a pencil-and-paper instrument to assess the readiness of clients to utilize SIGI. The results of two studies were contradictory. In Study 1, her instrument "classified 77% of the sample correctly..., indicating the possibility of predicting potentially successful SIGI users" (p. 545). She was unable to draw a similar conclusion in Study 2, which replicated the first. From these results and a qualitative examination of her sample populations, she suggested that future research in the area of CACGS consider both work motivation and self-esteem as additional indicators of readiness of clients to utilize CACGS.

Gati (1992) outlined numerous "inherent contradictions" of CACGS. They can be summarized as follows:

1. Computers are viewed as error-free machines (Sampson, 1986) but much of the information included in career-related databases has "passed through" a subjective evaluation by a human "expert."

2. Computer-generated career-related data have an appearance of objectivity, but have a subjective meaning to users, based upon their personalities, information processing styles, and life experiences.
3. In order to be manageable, central tendencies of career-related data are reported while the within-occupational variances are largely ignored.
4. CACGS stimulate users to focus on aspirations and preferences but force them to make compromises, causing frustration in the career decision-making process.
5. In generating occupational alternatives, CACGS do not consider the degree to which preferences have been crystallized. Occupational sets typically cannot be expanded nor condensed to accommodate client needs.
6. There is no assurance that alternative occupations eliminated by sequentially-selected user criteria should be eliminated when these same criteria are considered in different combinations or in different sequences.
7. Many CACGS present occupational alternatives in some ranked order, based upon system-stimulated, user-selected criteria. There is no means for accommodating those criteria peculiar to the user, but not included in the original system design.
8. Ambiguity in career-related information is an inherent characteristic of CACGS. Developers should seek to reduce this ambiguity, but not eliminate it entirely.
9. CACGS developers are challenged to develop an attractive human-computer interface which does not detract from the usability nor the face validity of the system.

Other authors and investigators have sought to test the effectiveness of CACGS, particularly DISCOVER, SIGI, and SIGI Plus, for various career-related purposes. Garis and Harris-Bowlsbey (1984) examined the effects of DISCOVER upon the career planning of college students. In a relatively small ($n=67$) experimental study, they found that the career interventions of career counseling, DISCOVER alone, and career counseling plus DISCOVER were all more effective than no treatment. While not statistically significant, their results further suggested that the combined treatment was more effective than either treatment alone.

In a 1987 investigation, Sampson et al. compared the effects of SIGI, DISCOVER, and unstructured use of career center resources upon the occupational certainty, vocational identity, career exploration, and decision making style of college students. A sample of 109 participants were randomly assigned to one of three groups. They found no difference between the three groups in impact on the vocational behavior of the participants. They suggested that further research be conducted examining the utilization of CACGS in conjunction with other counseling interventions.

Subsequently, Peterson et al. (1987) conducted an investigation comparing the effectiveness of SIGI, SIGI Plus, and Discover utilizing a field test version of the Computer-Assisted Career Guidance Evaluation Form (Peterson, Sampson, & Reardon, 1985). All three CACGS interventions were rated positively on the three dimensions – analysis, synthesis, and computer effect – of the Form. Users of SIGI Plus did rate it higher in terms of satisfaction of career alternatives generated than users of SIGI or DISCOVER.

In a 1990 investigation, Garis and Niles examined the effects of DISCOVER and SIGI on the career planning of undecided college students. Students enrolled in a career

planning course or an introductory business or psychology course were randomly assigned to either a CACGS treatment group or a waiting list control group. Their results indicated that a career planning course with, or without, CACGS and an introductory business or psychology course with CACGS were significantly more effective than the waiting list control condition. However, the strongest treatment condition was a career planning course without CACGS. A follow-up survey demonstrated a preference for SIGI over DISCOVER. Contradicting Sampson et al. (1987), Garis and Niles (1990) suggested that “assigning students to both treatments...may be an inefficient use of career counseling resources. Given the findings of this study, it may also be appropriate for counselors to reserve computer time for students who are not enrolled in a career planning class” (p. 272).

Career Courses

In recent years, career courses have become an effective, viable alternative to other career interventions (Gimmestad, 1984; Holland, 1985; Osborne & Usher, 1994). In a 1978 report of an American College Personnel Association Commission VI (Career Planning and Placement)-funded research project, Haney and Howland (1978) reported that only 353 of 916 respondents to a survey sent to 2,400 four-year and two-year colleges offered career courses for credit. Of these 353, 84% indicated that the primary emphasis of the career course offered on their campuses was “assisting students to develop self-awareness regarding their abilities, interests, needs, and life-styles” (Haney & Howland, 1978, p. 75). Fifty-seven percent of these same 353 courses were not offered under an academic department title. The issue of whether a course should be offered within or outside of an academic department has been hotly debated. “It has been felt that in courses inside a department there may be more involvement by the teaching faculty. On the other

hand, students may feel pressured to choose that major and not explore others.

Interdisciplinary or non-departmental courses seem to free students to make their own decisions but may not be taken seriously or may be seen as a threat by the faculty” (Haney & Howland, 1978, p. 76).

The following year, Heppner and Krause (1979) described a career seminar course offered at the University of Nebraska-Lincoln (UNL). After conferring with faculty and student affairs staff, a Career Action Commission was formed. Following a brief examination of the career interventions offered on the campus and career intervention needs of UNL students, a two-credit career seminar, housed in the Department of Educational Psychology and Measurements, was developed with the following goals:

- a) students will be able to assess themselves in terms of their values, interests, skills, self-concept, and self-defeating behaviors;
- b) students will be made aware of a wide range of occupational information and the world of work;
- c) students will be able to use several generic problem-solving skills (goal setting, decision making, utilizing resources, and self-evaluation) in planning their careers based on the information of the first two goals; and
- d) students will learn a generalizable process for career planning, applicable at any point in their lives. (p. 302)

At the conclusion of the initial course offering, four evaluation methods were employed: student self-evaluations, individual interviews with students, formal written feedback, and informal verbal feedback. Heppner and Krause (1979) reported that the overall feedback was very positive. In anecdotal quotes, they reported positive statements made by student

participants. No negative reviews were reported. Citing the American College Testing class profile report of enrolled 1976-1977 freshmen (Iowa City, Iowa: American College Testing Program, 1977), the authors suggested that given the high percentage of college students expressing a need for career assistance, counselors could make a more efficient use of their time by working and consulting with faculty on developing and implementing career development courses.

Osborne and Usher (1994) described a career course being offered at the University of North Carolina at Greensboro (UNCG) as part of a tripartite, comprehensive career program grounded in career development theory. The undergraduate course, taught by advanced doctoral students in the counselor education program at UNCG, utilizes Super's (1990) life-span career development theory as a basis. This particular career course is unique in that both master's-level and doctoral-level students in-training are involved. According to Osborne and Usher (1994), small groups of undergraduates are paired with master's-level students enrolled in a career development course. These master's students provide career assessment instrument interpretation, resume critiques, and mock interview practice. These master's students are supervised by doctoral students enrolled in a career counseling course. Prior to interacting with the undergraduates, both levels of graduate students receive training in instrument interpretation, with the doctoral students receiving additional training in supervision. Osborne and Usher (1994) noted in a subjective evaluation that this approach has proven beneficial for all students involved.

Evaluating the Effectiveness of Career Courses

Glaize, Culp, and Irwin (1991) compared the effects of participating in a life/career planning course, career testing with counselor interpretations, and no career intervention within a community college population. In this examination in which the

groups were self-selected, Glaize et al. (1991) found a statistically significant gain in the career maturity of the life/career planning class group over the career testing group. They also reported that the “career maturity pattern of students who elected not to participate in any career choice intervention became more scattered and less focused” (p. 11) as the semester progressed. They attributed their findings to three factors: 1) students who participated in life/career planning classes were guided to focus on personal growth as well as career development; 2) the career testing battery stressed career decision-making, not career development; and 3) “career maturity is a function of personal development, an area that can only be explored in depth in an on-going class or counseling relationship” (p. 10).

In an earlier study, Davis and Horne (1986) examined the comparative effectiveness of small-group career counseling and a typical career course. The investigation yielded no statistically significant difference between the two treatment modalities. However, the small-group career counseling treatment was very structured and included formal presentations by the leader, structured subgroup activities, and structured full-group activities, strongly resembling a lightly-enrolled career course.

Ganster and Lovell (1978) evaluated a fifteen-hour for-credit career development seminar using a quasi-experimental design employing both treatment and control groups. Using career maturity change measured by Crites’ (1973) Career Maturity Inventory, they found that “participation in this particular career development seminar led to significant changes in career maturity” (p. 177). Using appropriate statistical tests, they determined that the control and experimental groups were equivalent at the outset of the investigation in many variables, including age, gender, ethnicity, academic standing, academic interests, and initial career maturity. Not discounting their own results, Ganster and Lovell (1978) stated that “the only discernable difference between treatment and control subjects is that

treatment subjects decided, for one reason or another, to enroll in a career development seminar” (p. 178).

Perhaps the most extensive investigation of this nature was conducted by Barker (1981). She arranged for 14 colleges to field test the Career Planning and Decision Making for College course (CPDM) developed by the Division of Career Guidance at Appalachian Educational Laboratory. In a quasi-experimental investigation, she used both a locally developed student survey based upon self-report and the Assessment of Career Decision Making (ACDM) (Harren, 1978) as measures to “determine the effectiveness of the course in terms of learner outcomes, objectives achievement, and usability” (Barker, 1981, p. 355). She reported that students who participated in the CPDM courses “made significantly greater gains...when compared with non-CPDM students” (Barker, 1981, p. 356) on 13 of 17 career development areas. She used these findings to underscore the notion that “college students recognize the importance of career planning and decision making, expect colleges and universities to teach them the necessary knowledge and skills, and realize the impact that such career development learning has on their lives” (Barker, 1981, p. 358).

Summary

As demonstrated by this literature review, evaluative investigations of career interventions are not plentiful. In addition, the primary result has been that career interventions in general have a positive effect upon a variety of measures of intervention effectiveness, including vocational choice, information-seeking behavior, career decision-making, and career maturity. Questions continue to arise regarding how to intervene in career issues to produce maximum results with limited resources, both personnel and financial.

Investigators have demonstrated the effectiveness of individual career interventions (e.g., Cooper, 1976; Matulef, Warman, & Brock, 1964; Young, 1979). Building on these studies, others have shown group career interventions to be equal in effectiveness to individual career interventions using a variety of outcome measures (e.g., Hanson & Sander, 1973; Krumboltz & Thoresen, 1964). However, investigations examining the effects of CACGS in conjunction with other career interventions have been mixed (e.g., Sampson et al., 1987; Garis & Niles, 1990). In efforts to achieve the ultimate in cost-effectiveness, researchers have sought similar results in investigations examining the effectiveness of career courses, again using a variety of outcome measures (e.g., Barker, 1981; Davis & Horne, 1986; Ganster & Lovell, 1978). However, the results of these investigations involving career courses have been mixed.

Counselor educators have suggested that these generally inconclusive findings can be attributed to poor experimental design (Heppner & Krause, 1979; Touchton, Wertheimer, Comfeld, & Harrison, 1977) and the failure to utilize standardized measurement tools (Oliver & Spokane, 1989). In addition, no consensus has been reached regarding a measure of effectiveness.

These facts suggested the need for a well-designed investigation assessing the effectiveness of a career course as a career intervention utilizing a standardized instrument to assess a comprehensive career outcome measure of effectiveness. This investigation followed these guidelines. A quasi-experimental nonrandomized control-group pretest-posttest design (Isaac & Michael, 1971) or nonequivalent control group design (Campbell & Stanley, 1963) was utilized. Change in career maturity, which combines career development attitudes, career development knowledge, and reality of choice, was measured by calculating a difference score from the pre- and posttest administrations of the Career

Development Inventory (Super et al., 1981). The results were analyzed using accepted statistical methods.

CHAPTER III

METHODOLOGY

Outline of the Investigation

In light of the literature reviewed in Chapter II, the investigator designed a quasi-experimental research project to examine the effect of completing a career/life planning class upon the career maturity of undergraduates. Two treatment groups, one of career course enrollees (T_2) and one of undergraduates not enrolled in a career course but who agreed to utilize a computer-assisted career guidance system (CACGS) (T_1), and one control group (C_1) completed a pre- and post-measure of career maturity, the Career Development Inventory (CDI) (Super et al., 1981). T_2 also maintained a critical incident log, making entries at the close of each class meeting. Difference scores were calculated for each group from the results of these two administrations. These differences were then analyzed to determine if a statistically significant difference existed between the career maturity change of the three groups. Critical incidents reports then were examined to determine what may have led to changes in career maturity for T_2 . Additional analyses were performed to examine differences across several other factors, including gender, participation in extracurricular career-related activities, and reasons for enrolling in a career course.

Research Hypotheses

The research hypotheses for this investigation fell into four categories: Primary, secondary, occupational group, and demographic. The investigator hypothesized the following:

1. Career maturity change for undergraduates who complete a career course will be greater than career maturity change for undergraduates who only utilize CACGS and those undergraduates who do not complete a career course.
- 2(a). Change in career planning attitudes for undergraduates who complete a career course will be greater than change in career planning attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.
- 2(b). Change in career exploration attitudes for undergraduates who complete a career course will be greater than change in career exploration attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.
- 2(c). Change in decision making skills for undergraduates who complete a career course will be greater than change in decision making skills for undergraduates who utilize CACGS and undergraduates who do not complete a career course.
- 2(d). Change in knowledge of the world of work for undergraduates who complete a career course will be greater than change in knowledge of world

of work for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

2(e). Change in career development attitudes for undergraduates who complete a career course will be greater than change in career development attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

2(f). Change in career development knowledge for undergraduates who complete a career course will be greater than change in career development knowledge for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

2(g). Change in career orientation for undergraduates who complete a career course will be greater than change in career orientation for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

3. More undergraduates who complete a career course will change their choice of preferred occupational group as compared to undergraduates who utilize CACGS or undergraduates who do not complete a career course.

4(a). Female and male undergraduates who complete a career course will demonstrate similar career maturity change as will female and male undergraduates who utilize CACGS and female and male undergraduates who do not complete a career course.

4(b). Overall, female undergraduates will exhibit a higher level of career maturity than male undergraduates.

5. Undergraduates who enroll in a career course for career-related reasons will exhibit greater career maturity change than undergraduates who enroll for other reasons.
6. Undergraduates who participate in career development-related activities outside of class will exhibit greater career maturity change than undergraduates who do not participate in these activities.

Treatment

CED 210: Life/Career Planning

The treatment for T₂ consisted of participation in CED 210–Career and Life Planning, a sixteen-week undergraduate course offered by the Department of Counseling and Educational Development in the School of Education at the University of North Carolina at Greensboro. The course met twice weekly for a total of two and one-half hours per week. By completing the course, students earned three semester hours of elective university credits. The course objectives were stated in the syllabus as follows:

- 1) To provide opportunities to understand individual personality with regard to lifecareer interests, concerns, values, preferences, development, and role salience.
- 2) To provide opportunities to employ self-understanding to purposefully direct efforts in developing a satisfying and productive lifecareer.
- 3) To provide instruction in decision-making and goal setting methods.
- 4) To provide instruction in methods for conducting an effective job search.
- 5) To provide instruction in the social aspects of the world of work, directed at personal and social skill building to enhance personal and interactional effectiveness.

Course activities included required readings from library materials, materials distributed in class and the text, Coming Alive from Nine to Five: The Career Search Handbook (Michelozzi, 1992); the completion of career-oriented assessment instruments (Career Development Inventory (CDI), Myers-Briggs Type Indicator (MBTI), Strong Interest Inventory (SII), The Values Scale, The Salience Inventory, and the Adult Career Concerns Inventory (ACCI)); participation in exercises in class; and the completion of career-related written assignments, including a resume and cover letter.

Computer-Assisted Career Guidance Systems (CACGS)

The treatment for T₁ consisted of completing a 1 1/2- to 2-hour session with SIGI Plus, a computer-assisted career guidance system (CACGS). SIGI Plus contains nine sections covering the primary areas of career decision-making and career planning (i.e., self-assessment, occupational information, skills requirements, preparing for occupations, coping, deciding, and planning next steps). Users are guided through the modules allowing them to select the sections of the system most appropriate to their current needs, examine their values, interests, and activities, choose activities they want and do not want in work settings, gather occupational information, rate themselves on skills required in various occupations, examine information on preparation for various occupations, examine practical issues related to career pursuits, compare and contrast occupational choices, and develop short-term strategies for achieving career goals (Lenz et al., 1991).

Dependent Measures

Career Development Inventory (CDI)

The CDI (Super et al., 1981) as a research and counseling tool is an outgrowth of the Career Pattern Study, a longitudinal study of males' career development (Super, Crites,

Hummel, Moser, Overstreet, & Warnath, 1957). It is rooted in developmental theory, summarized by the following principles:

1. Development proceeds from random, undifferentiated activity to goal-directed, specific activity.
2. Development is in the direction of increasing awareness and orientation to reality.
3. Development is from dependence to increasing independence.
4. Mature individuals select and pursue goals (Thompson et al., 1984, p. 2).

The CDI was developed to expand the uni-dimensionality of other measures of career maturity, particularly the Career Maturity Inventory (CMI) (Crites, 1978). Beginning with a student questionnaire measuring five characteristics of “vocational development” (Thompson, Lindeman, Clack, & Bohn, 1971, as cited in Thompson et al., 1984) followed by a series of field trials, Form I of the CDI was developed. It included only three scales: A, Planning Orientation; B, Resources for Exploration; and C, Decision-Making and Information. Further refinement by Super and Thompson (1979) yielded Form III (Form II was solely a research-oriented instrument). Thompson, Lindeman, and Super (1978, as cited in Thompson et al., 1984) described six scales in Form III: A, Extent of Planning; B, Use and Evaluation of Resources; C, Career Decision-Making; D, Career Development Information; E, World-of-Work Information; and F, Information about Preferred Occupation. A desire for a shorter form, one which could be completed in a typical high school class period, led to the development of the current form of the CDI. Finding similar factor structures and high correlation between Career Development Information and World-of-Work Information, these scales were combined. The current standardized School Form and College and University Form each contain 120 items requiring

approximately 60 minutes to complete. Career maturity is reported using five basic scales: Career Planning (CP), Career Exploration (CE), Decision-Making (DM), World-of-Work Information (WW), and Knowledge of Preferred Occupational Group (PO). In addition, CP and CE are combined into Career Development-Attitudes (CDA) as are DM and WW which result in Career Development- Knowledge and Skills (CDK). Finally, CP, CE, DM, and PO are combined to create one all-encompassing scale, Career Orientation Total (COT) (Thompson, Lindeman, Super, Jordaan, & Myers, 1981). A graphical representation of this formulation is found in Figure 2.

Insert Figure 2 About Here.

Reliability. As shown in Table 1, internal consistency coefficients [Cronbach's alpha] for the individual scales range from an adequate low of .61 on PO to an extremely high .91 on CP. These coefficients for the three combined scales are .86 on CDA, .75 on CDK, and .90 on COT, all representing sufficient internal consistency. As indicated in the Career Development Inventory College and University Form Supplement of User's Manual (Supplement) (Thompson, Lindeman, Super, Jordaan, & Myers, 1982), "DM, WW, CDK, and PO, are essentially cognitive and have somewhat lower alphas, which are large enough for use in analyzing group differences, but suggest cautious use in individual counseling" (p. 9). All coefficients are greater for males than for females.

Insert Table 1 About Here.

Figure 2. Relationship of the Scales from the Career Development Inventory (Thompson et al., 1981, p. 2)

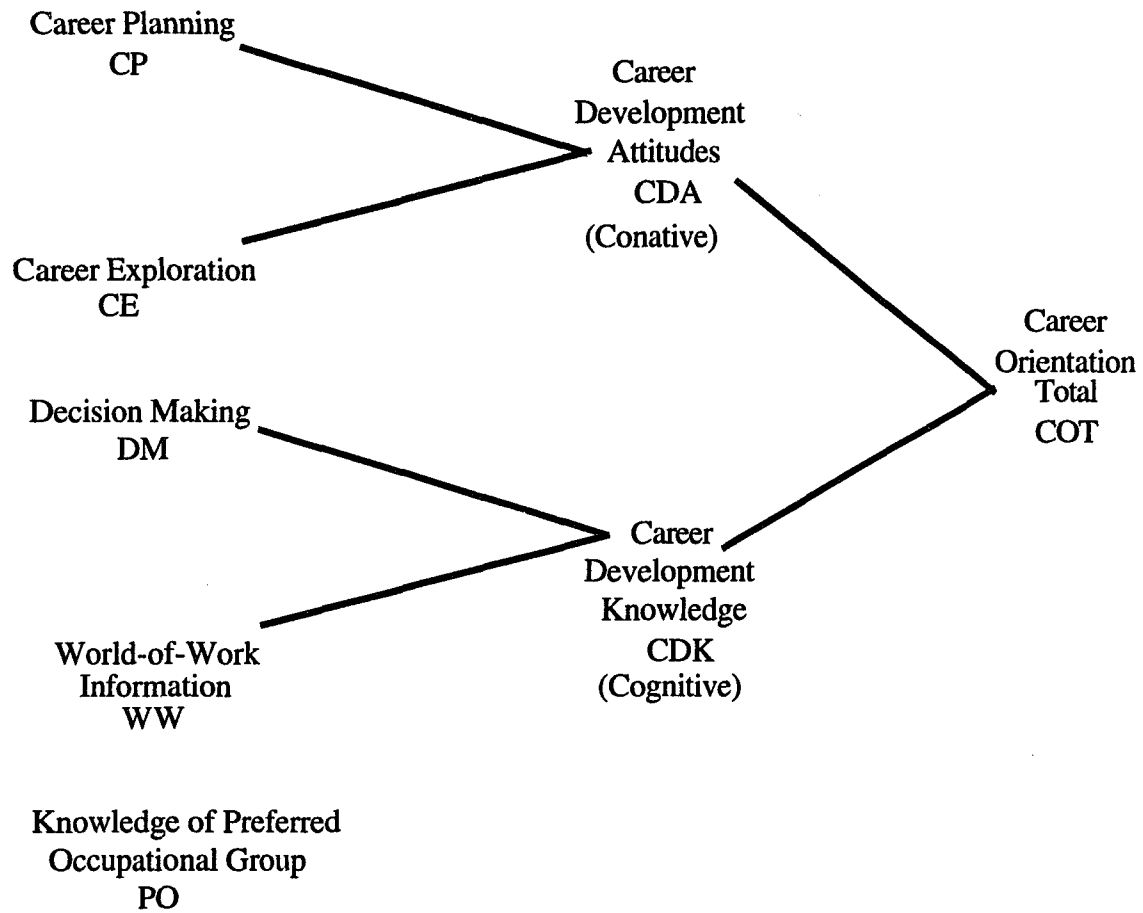


Table 1

Overall Scale Reliabilities (α Coefficients) by Sex for the CDI (Thompson et al., 1982, p. 9)

Scale	Females	Males	Total
CP	.90	.92	.91
N 70		531	1403
CE	.78	.80	.80
N 707		534	1405
DM	.50	.63	.62
N 708		534	1400
WW	.59	.69	.67
N 707		531	1398
PO	.52	.63	.61
N 687		514	1361
CDA	.85	.86	.86
N 706		531	1399
CDK	.64	.78	.75
N 706		531	1392
COT	.89	.91	.90
N 703		528	1392

Validity. Thompson et al. (1981) supported the content validity of the CDI by emphasizing its development from a theoretical model tested independently by several researchers in the Career Pattern Study (Super et al., 1957). The five dimensions of the model show intercorrelations strong enough to prove interrelatedness, but low enough to support the separate dimensions. Thompson et al. (1981) reported author consensus on the content validity of all scales.

Support for the construct validity of the CDI is based upon subgroup differences according to year, gender, major field, and factor trends (Thompson et al., 1982). On all scales except CE, norm group means show an increasing trend from the freshman to the senior year. The opposite trend for CE is expected since freshmen would be more likely to demonstrate a greater interest in career exploration than would seniors. In addition, the increasing trends are consistent and continuing when means from the School (S) Form are compared to those from the College and University (CU) Form.

As expected by the authors, the means across gender differ more on the cognitive scales (DM, WW, and CDK) than on the conative scales (CP, CE, and CDA). Means for females are higher than those for males. This finding is explained in the Supplement: “this is because females generally surpass males in school achievement and in verbal ability; it has been hypothesized that females cultivate verbal skills more than quantitative skills” (Thompson et al., 1982, p. 11). Thompson et al. (1982) suggested that the lack of differences between females and males on the conative scales may reflect both genders giving equal attention to careers.

According to Thompson et al. (1982), “studies of college students have tended to show that science students perform better on cognitive tests; arts and humanities students rank below them; and business and education students rank lowest” (p. 11) on the CDI.

These authors also report that those students in career-oriented courses of study have given more thought to and participated more in career exploration than those students in other courses of study. In general, the means across major fields of study support this contention, thus offering evidence of construct validity.

A factor analysis of the five separate scales (CP, CE, DM, WW, PO) yielded loading on two factors (Thompson, et al., 1982). This result supports the concept of one conative factor (CDA) and one cognitive factor (CDK), thus lending further support to the construct validity. A summary of this factor analysis is shown in Table 2.

Insert Table 2 about here.

Critical Incidents Log (CIL)

Participants from T₂ were asked to complete the investigator-developed Critical Incidents Log (CIL) (See Appendix E) at the close of each class meeting. Class participants simply were asked to indicate if they experienced any significant learnings during the class meeting; if so, to identify the significant learning(s), and to explain why this (these) learning(s) was (were) significant to them.

The data collected through these CILs was qualitatively examined to attempt to explain any changes in career maturity among the career course treatment group participants.

Career Development Questionnaire (CDQ)

In addition to these dependent measures, the investigator developed the Career Development Questionnaire (CDQ) (See Appendix B) to gather demographic data pertinent to this investigation. Information gathered included year in college, ethnicity,

Table 2

Factor Analyses of 5 CU Form Scales by Year of the Career Development Inventory
(Thompson et al., 1982, p. 19)

Student Classification								
	Freshman		Sophomores		Juniors		Seniors	
N	526		278		166		232	
Scale	Factor I	Factor II	Factor I	Factor II	Factor I	Factor II	Factor I	Factor II
CP	—	.87	—	.84	—	.80	—	.84
CE	—	.85	—	.85	—	.83	—	.85
DM	.81	—	.84	—	.82	—	.83	—
WW	.83	—	.86	—	.84	—	.79	—
PO	.64	—	.56	—	.67	—	.58	—

Note: Varimax rotated principal components solutions. Only loadings of at least .40 are given.

gender, age, approximate GPA, major, student's occupation (if employed), and reason for enrolling in the course (for T₂).

The data collected via the CDQ was used to analyze the scale scores (CP, CE, DM, WW, CDA, CDK, COT), based upon Thompson et al's. (1982) argument for support of the construct validity of the instrument.

Posttest Career Development Questionnaire (PCDQ)

The investigator also developed a brief data collection tool to gather information related to career development activities in which the participants engaged between the pre- and post- administrations. The Posttest Career Development Questionnaire (PCDQ) (See Appendix C) asked the participants to indicate participation in any extracurricular career-related activities via a checklist.

The data collected was utilized to test hypothesis six: Undergraduates who participate in career development-related activities outside of class will exhibit greater career maturity change than undergraduates who do not participate in these activities. Should control group participants have a statistically significant gain in career maturity, a possible explanation might be their participation in some career development activity.

Participants

Participants for this study were chosen from among the undergraduate student population at the University of North Carolina at Greensboro. Specifically, T₂ consisted of students enrolled in CED 210, Life/Career Planning during the Fall 1994 semester who voluntarily choose to participate in this investigation. T₁ consisted of students who were currently enrolled in another undergraduate course offered by UNCG's Department of Counseling and Educational Development, CED 310 but were not currently enrolled in,

nor had ever been enrolled in CED 210. C_1 consisted of students in CED 310 who were not currently enrolled in, nor had ever been enrolled in, CED 210 and who were not assigned to T_1 . All students who elected to participate in the investigation and completed all requirements for participation were entered in a raffle of a \$50.00 United States Savings Bond. In addition, T_1 and C_1 participants received a group interpretation of their CDI scores and were offered an opportunity for an individual counseling session after completion of the posttest to further explore the significance of their scores as these scores related to their career development. Participants in T_2 received either a group or individual interpretation of their CDI scores as part of the CED 210 course requirements.

Design

A nonrandomized control-group pretest-posttest design (Isaac & Michaels, 1971) or nonequivalent control group design (Campbell & Stanley, 1963) was employed because the participants self-select into T_2 by electing to register for CED 210 for credit, thus creating an intact educational group. Appropriate statistical analyses were employed to account for initial dissimilarity between the groups, allowing this design to control for the internal validity threats of history, maturation, instrumentation, and testing (Campbell & Stanley, 1963).

In order to control for the interaction between the variables of selection and maturation, data was collected regarding student participation in career-related activities outside of class. This allowed the investigator to partially explain any similarities in career maturity change between the treatment and control groups. In addition, mortality effects will be controlled for by comparing pretest and posttest records. Should a participant not complete both administrations, neither administration will be used in the data analyses.

Finally, an attempt to control for the interaction between the variables of career course treatment and instructor was included. CED 210 is typically offered in four or five sections which all meet during the same time but are taught by different instructors. While the requirements are the same for all sections, instructors have freedom in the order in which topics are presented. For this investigation, the instructors planned a similar sequence of topics, leaving instructor style as the only uncontrolled factor.

Threats to internal validity may have existed. Some unobservable differences may have existed between the control and treatment groups. Since all groups consist of volunteers, it is possible that these students may have possessed stronger motivation to participate in career development-oriented activities than other students. Beyond this, T₂ consisted solely of students who already had elected to participate in a career development-oriented activity, suggesting a possible personal motivation in the area of career development. The investigator attempted to control for this by asking members of the treatment group to report their reasons for enrolling in the course. However, this was a self-report measure. Students may or may not have offered their actual reasons for enrolling.

In addition, it was not feasible to attempt to control for the interaction between the variables of selection and history. The opportunities for students to have participated in some career development-oriented activity in the past were many. Most, if not all, had a formal high school education, a portion of which may or may not have included career development activities. In addition, some may have previously participated in career development-oriented activities at an organized level or on their own initiative.

Procedures

The procedures for all groups were identical: (1) recruiting participants from classes, (2) administering pretest, (3) ten- to twelve-week interval elapses during which T₁ utilized SIGI+, as assigned, T₂ participated in CED 210, and C₁ received no planned career development intervention, and (4) administering posttest.

Recruiting Participants

The investigator presented the proposed investigation during a regularly scheduled class meeting of either CED 210 for T₂ or, for T₁ and C₁, a regularly scheduled class meeting of an undergraduate course which meets the general education requirements for graduation from the University. In an attempt to achieve an approximate *n* of 100 participants for T₂ and 50 participants each for T₁ and C₁, four CED 210 classes and five CED 310 classes were included.

After each presentation in which the proposed investigation was described, all students present were asked to complete an informed consent form (See Appendix D) on which they indicated whether or not they wished to participate in the investigation. This procedure was implemented to ensure anonymity of the participants and to minimize researcher and peer pressure to participate or not to participate. Those students electing not to participate were instructed to remain in the classroom and work toward completing assignments for their respective courses.

Administering Pretest

All students enrolled in CED 210 were required to complete an initial administration of the investigative instrument as a class expectation. In addition, all participating CED 210 students were asked to complete the CDQ.

All participants from the classes from which T₁ and C₁ were selected were asked to complete the CDQ and the CDI during a regularly scheduled meeting of the class from which they were recruited.

Elapsed Time

During the ten- to twelve-week elapsed time period, T₂ participants participated in CED 210 class activities as outlined in the course syllabus (see Appendix 3), including submitting written assignments, participating in out-of-class activities, examining gender issues as they relate to obtaining employment and workplace behaviors, writing resumes and cover letters, practicing interviewing skills, and participating in career counseling as clients.

T₁ participants were asked to refrain from pursuing any career development-related activities other than the prescribed CACGS intervention.

C₁ participants were instructed to make no change in their day-to-day activities. They were permitted to participate in any developmental activities they might choose to pursue, including career counseling and related activities. (Reports of career development-related activities were collected during with the PCDQ)

Administering Posttest

For all groups, the CDI was administered during a regularly scheduled meeting of the class from which they were recruited, ten to twelve weeks after the administration of the pretest. In addition, T₁ and C₁ participants were asked to complete the PCDQ (see Appendix C) in which they indicated participation in any career development-related activities during the semester. After the instruments from the posttest administration were scored, T₁ and C₁ participants received a group interpretation of the CDI. In addition,

participants were offered an opportunity to meet with the investigator for an individual interpretation of their CDI scores.

Strengths and Limitations

Although non-randomized, the design of this investigation offered several strengths in terms of external validity (Isaac & Michael, 1971). First, there was no multiple-treatment interference because treatment group participants received either the career course or the CACGS, but not both. Second, the reactive effects of experimental procedures were not present because the procedures are non-intrusive. T₂ participants participated in activities and received instruction typically associated with the completion of CED 210. T₁ participants participated in activities which are typical for an undergraduate seeking career assistance from UNCG's Career Center.

No investigation is without limitations. The possibility existed of a reactive or interaction effect of pretesting, particularly within C₁. Exposure to the Career Development Inventory and a career development questionnaire may have created an interest in seeking career information or affected a change in career development attitudes among C₁ participants. In addition, the composition of all groups may limit the generalizability of the results of the investigation. All groups were composed of participants from intact educational groups participating in certain classes, thus limiting the generalizability to other, similar, undergraduate students. Also, students who enrolled in the life/career planning course may have done so because they were more career-oriented, had already attained a greater level of career maturity, or may have been more developmentally advanced than their non-participating counterparts.

Generalizability of findings from this study were improved by incorporating suggestions from Isaac and Michael (1971). First, multiple instructors provided the treatment for T₂, eliminating the contention that the strength of any one instructor may have influenced the outcome. In addition, multiple dependent variables were employed by considering each scale, each composite scale, and the Career Orientation Total Scale of the Career Development Inventory as a separate variable.

Although potential limits to generalizability existed, the use of multiple instructors, the employment of a standardized treatment, and the use of standardized dependent measures enhanced the generalizability to the target population of undergraduate students attending the University of North Carolina at Greensboro who elect to enroll in CED 210, Life/Career Planning.

Statistical Analysis

A two-by-two analysis of covariance factorial design was employed to examine the main effects of group and gender. The covariates were hours spent participating in outside-of-class career-related activities, measured via a self-report by all participants of their participation in these activities and the scores from the pre-test administration of the CDI. Second-order interaction effects were examined to compare possible differences between all groups across gender. Third-order and greater interactions were not examined because there was no indication in the literature that interactions such as these exist. This analysis was performed on the difference between the pretest-posttest scores for each individual and combined scale. An analysis of variance was conducted to evaluate the effect of reason for enrolling the career course on career maturity and to evaluate the effect that participating in a career course has upon choice of preferred occupational group. The critical incidents data was qualitatively analyzed and categorized.

Pilot Study

A preliminary investigation was conducted during Spring 1994 to examine the effects of participation in a career course on the career maturity of undergraduates as well as to pilot test instruments and procedures. Volunteers from one CED 210 class and one CED 310 participated as treatment and control subjects, respectively. Treatment participants completed the CDI early in the semester as a course requirement. Control subjects also completed the CDI at a corresponding time during the semester. Both groups completed a version of the CDQ. The treatment group completed the CDI a second time twelve weeks later; the control group, ten weeks later. In addition, control participants completed a version of the PCDQ to collect information regarding participation in career development related activities.

Forty-four participants completed both the pretest and posttest instruments, 25 in the treatment group and 19 in the control group. There were 35 females and 9 males. Utilizing the pre- and posttest CDI subscale and composite scale standard scores, difference scores were calculated for each participant for each scale. After assessing the equality of both groups, this data was analyzed via an analysis of covariance (ANCOVA) with participation in career development related activities as the covariate.

An initial t-test was performed on the all pretest scores of the participants. No statistically significant difference between the treatment group and the control group was evident. Thus, no additional controls were employed to assure group equality. The ANCOVA of the pretest-to-posttest CDI score changes also yielded no statistically significant difference between the two groups. The only statistically significant difference in group x gender interaction was on the Career Planning (CP) scale, which yielded an f value of 3.126 with a corresponding p value of 0.09. There was no statistically significant

relationship between career-development related activities and career maturity change.

Overall, females exhibited a higher level of career maturity than did males, though not at a statistically significant level. Four participants from each group changed their preferred occupational group.

Though no statistically significant difference in career maturity change was demonstrated between the control and treatment groups, all subscale and composite scale means were greater for the treatment group than for the control group, suggesting that a subsequent investigation, involving a larger sample, might yield statistically significant differences between groups.

These preliminary findings resulted in changes in research design noted in the current investigation. Specifically, a second treatment group was included to enhance the generalizability of the results. More participants were sought for each group to increase the likelihood of realizing a statistically significant difference in career maturity change. The treatment period was monitored more carefully. Multiple instructors were utilized for the treatment participants from CED 210. Pretest CDI subscale and composite scale standard scores were included as covariates to control for any inequality between the groups.

CHAPTER IV

RESULTS

Chapter IV includes both descriptive statistics for the sample and inferential statistics derived from performing a series of analyses of covariance (ANCOVA), analyses of variance (ANOVA), or t-tests, depending upon the hypothesis being examined, on data collected to investigate the effect that completing a career course versus utilizing computer assisted career guidance systems (CACGS) versus no intervention has upon the career maturity of undergraduates. Volunteer undergraduate students enrolled in a career course and volunteer undergraduate students enrolled in another course in the same department were asked to complete the Career Development Inventory (CDI) near the beginning of a semester. Approximately twelve weeks later, all volunteers again completed the CDI. Changes in scores from pretest to posttest were calculated and said analyses were performed.

Descriptive statistics are presented in tabular format. Inferential statistics pertinent to the stated hypotheses are presented in both tabular and narrative formats.

Descriptive Statistics

Two hundred and ten participants completed the pretest. Ninety-eight (46.67%) of these were undergraduate students enrolled in CED 210, Life/Career Planning. The remaining 112 (53.33%) were undergraduate students enrolled in CED 310, Helping Skills. Of these 112, 52.68% (59) volunteered to utilize SIGI+, a computer-assisted career guidance system, during the first six weeks of the investigation. No special instructions were given the other 53 (47.32%).

One hundred and twelve (53.33%) of the initial 210 participants completed the posttest. Forty-eight (42.86%) of these were CED 210 students (T_2). Five of the posttests from this group were incomplete and unusable, leaving 43 participants in T_2 . Twenty of these (17.86%) were the participants who agreed to utilize SIGI+ (T_1). The remaining 44 (39.28%) were either members of the original control group or participants who agreed to utilize SIGI+, but did not. These 44 participants comprised C_1 . The usable data collected from participants are summarized below:

	C_1	T_1	T_2
CED 310	44	20	
CED 210			43

Of the 107 participants, 77 (71.96%) were female and 30 (28.04%) were male. Twenty-two (20.56%) of the 107 identified themselves as African-American, 82 (76.64%) as white, one (0.93%) as Hispanic, and one (0.93%) as Asian, while two (1.87%) failed to report their race. There were 63 seniors (58.88%), 28 juniors (26.17%), 12 sophomores (11.21%), and four freshmen (3.74%). Sixty (56.07%) reported being employed at least part-time while 44 (41.12%) reported that they were unemployed. Three (2.80%) participants failed to report their employment status. The average age of all participants, with 91 (85.05%) reporting age, was 22.07 years. With 99 (92.52%) participants reporting, the average G.P.A. was 2.83 on a 4.0 scale. The demographic data are summarized by group and gender in Table 3.

Insert Table 3 About Here

Table 3

Demographic Data Summary by Group

Group	Gender		Class Status				Avg. GPA	Avg. Age	Employed			Race			
	M	F	Fr.	So.	Jr.	Sr.			Yes	No	NR*	Black	White	Other	NR*
C ₁	9	35	0	2	14	28	2.87	21.66	25	19		8	36	0	
T ₁	4	16			5	15	2.89	22.83	14	6		3	17	0	
T ₂	17	26	4	10	9	20	2.75	22.08	21	19	3	11	28	2	2

NR* - Not Reporting

Demographic Data Summary by Gender

Gender	Group			Class Status				Avg. GPA	Avg. Age	Employed			Race			
	C ₁	T ₁	T ₂	Fr.	So.	Jr.	Sr.			Yes	No	NR*	Black	White	Other	NR*
M	9	4	17	1	4	10	15	2.58	22.54	16	13	1	5	23	1	1
F	35	16	26	3	8	18	48	2.93	21.86	44	31	2	17	59	1	1

NR* - Not Reporting

Usable data from 107 undergraduates were obtained for analysis. Means and standard deviations were calculated for each administration of the Career Development Inventory (CDI) (Super et al., 1981), and are summarized by group and gender in Tables 4 and 5.

Insert Table 4 About Here

Insert Table 5 About Here

Inferential Statistics

Hypotheses 1 and 2(a) through 2(g) were tested by performing a series of analyses of covariance. For each hypothesis, the dependent variable was a difference score calculated by subtracting each individual's pretest score on a subscale or composite scale of the CDI from the corresponding posttest score. The related pretest subscale or composite scale score and hours spent participating in career-related activities were employed as covariates.

Hypothesis 1.

Career maturity change for undergraduates who complete a career course will be greater than career maturity change for undergraduates who only utilize Computer-Assisted Career Guidance Systems (CACGS) and those undergraduates who do not complete a career course.

An analysis of covariance was performed using the change in Career Orientation Total (COT) from pretest to posttest. Mean change in COT (COTdif) for C₁ was 0.00; for T₁, 6.00; for T₂, 2.90. The respective adjusted means were 1.92, 7.53, and -0.49. The

Table 4

Pretest Descriptive Statistics for Standard Scores on Subscales of CDI by Group and Gender

<i>Group (n=107)</i>	<i>n</i>	Career Planning Attitudes (CP)		Career Exploration Attitudes (CE)		Decision Making Skills (DM)		World of Work Knowledge (WW)		Career Development Attitudes (CDA)		Career Development Knowledge (CDK)		Career Orientation Total (COT)	
		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
C ₁	44	110.71	15.01	100.18	23.75	94.32	16.67	99.41	13.48	107.73	16.98	96.32	14.81	102.48	17.08
T ₁	20	108.35	14.87	97.10	20.10	99.00	16.61	97.45	16.70	101.00	18.94	99.00	15.54	101.40	18.19
T ₂	43	98.26	19.74	97.65	19.19	89.60	23.08	90.02	20.41	97.51	20.35	87.98	23.14	89.67	23.05
Females	77	107.04	18.35	98.12	21.46	97.30	14.48	98.23	15.23	103.16	18.98	97.58	14.24	100.81	17.01
Males	30	100.7	15.96	99.80	20.80	83.03	26.60	87.67	20.84	100.33	19.82	82.90	25.40	87.70	25.90
C ₁ Females	35	111.23	15.49	97.86	24.60	95.26	15.73	100.09	13.83	106.97	17.10	97.26	14.42	102.69	16.13
C ₁ Males	9	108.67	13.62	109.22	18.59	90.67	20.60	96.78	12.40	110.67	17.18	92.67	16.66	101.67	21.51
T ₁ Females	16	108.50	16.57	98.63	20.79	99.19	14.46	96.94	17.80	101.44	20.51	99.13	14.20	102.19	17.32
T ₁ Males	4	107.75	5.12	91.00	18.31	98.25	26.47	99.50	13.28	99.25	12.84	98.50	22.81	98.25	24.06
T ₂ Females	26	100.50	21.51	98.15	17.81	98.88	12.85	96.54	15.68	99.08	20.13	97.08	14.52	97.42	18.12
T ₂ Males	17	94.82	16.72	96.88	21.69	75.41	28.05	80.06	23.12	95.12	21.07	74.06	27.12	77.82	25.19

Table 5

Posttest Descriptive Statistics for Standard Scores on Subscales of CDI by Group and Gender

<i>Group (n=107)</i>	<i>n</i>	Career Planning Attitudes (CP)		Career Exploration Attitudes (CE)		Decision Making Skills (DM)		World of Work Knowledge (WW)		Career Development Attitudes (CDA)		Career Development Knowledge (CDK)		Career Orientation Total (COT)	
		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
C ₁	44	111.11	16.85	103.43	21.64	99.23	17.14	99.59	19.54	108.61	19.30	100.21	15.05	103.66	22.81
T ₁	20	114.75	13.37	104.80	21.54	99.30	16.60	102.45	18.68	111.60	15.45	100.65	16.62	108.30	18.40
T ₂	43	110.00	16.11	105.07	19.23	84.56	30.45	86.35	32.38	109.09	17.65	82.72	35.18	93.56	30.82
Females	77	113.03	15.56	106.66	20.01	98.39	18.75	99.23	21.62	111.64	17.24	98.99	19.55	105.84	22.54
Males	30	107.03	16.23	98.40	20.87	79.97	31.97	83.43	32.92	103.53	18.35	78.57	35.59	86.67	29.86
C ₁ Females	35	112.94	16.18	105.46	19.18	100.31	16.60	97.91	19.98	110.91	17.13	100.20	14.76	104.69	22.62
C ₁ Males	9	104.00	18.49	95.56	29.44	95.00	19.56	106.11	17.20	99.67	25.34	100.22	17.09	99.67	24.46
T ₁ Females	16	115.38	14.02	107.69	21.66	99.56	15.92	102.19	20.65	113.69	15.64	100.63	16.95	109.69	18.26
T ₁ Males	4	112.25	11.79	93.25	19.28	98.25	21.84	103.50	8.66	103.25	13.15	100.75	17.65	102.75	20.66
T ₂ Females	26	111.69	16.03	107.65	20.79	95.08	22.91	99.19	24.77	111.35	18.81	96.35	26.11	105.04	25.24
T ₂ Males	17	107.41	16.37	101.12	16.36	67.71	33.65	66.71	33.39	105.65	15.62	61.88	37.53	76.00	30.93

ANCOVA yielded an F value of 0.74 ($df = 2, 99$), with a corresponding p value of 0.48. This general hypothesis was not supported. Individual results were mixed with scores from students of all three groups demonstrating evidence of varying degrees of change, both increasing and decreasing, in career maturity levels during the investigation, suggesting that while some T_2 participants experienced positive career maturity change, others did not. Similarly, C_1 and T_1 participants demonstrated various degrees of career maturity change, both positive and negative. Based upon these results, there was no statistically significant difference in career maturity change between the three groups.

Insert Table 6 About Here

Hypothesis 2(a).

Change in career planning attitudes for undergraduates who complete a career course will be greater than change in career planning attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Change in Career Planning (CP) from pretest to posttest was employed as the dependent variable for this analysis. Mean change in CP (CPdif) for C_1 was -1.48, adjusted to 1.32; for T_1 , 5.69, adjusted to 7.69; for T_2 , 11.89, adjusted to 7.36. The analysis yielded an F value of 1.85 ($df = 2, 99$), with a corresponding p value of 0.16. An examination of the pairwise comparisons using a multiple t -test of the adjusted means yielded a t value of -1.72 ($df = 99$), with a corresponding p value of 0.09 when comparing

Table 6

Analysis of COTdif

	F	df	<i>p</i>
Group	.74	2,99	.48
Gender	2.30	1,99	.13
Group x Gender	.62	2,99	.54
Covariates	3.36	2,99	.04
(Pretest & Hours in Career Related Activities)			

Pairwise Comparisons

	Mean	Std. Er.	T(99)	P-value
C ₁ - T ₁	-5.61	6.55	-0.86	0.39
C ₁ - T ₂	2.41	5.23	0.46	0.65
T ₁ - T ₂	8.02	6.59	1.22	0.23
Female - Male	7.41	4.88	1.52	0.13

C₁ with T₂. However, if the Bonferroni correction for multiple comparisons ($\alpha/\text{no. of comparisons}$) is applied, this value is not considered to be statistically significant.

Hypothesis 2(a) was not supported. These results suggest that no relationship exists between participating in a career course and undergraduates' change in career planning attitudes.

Insert Table 7 About Here

Hypothesis 2(b).

Change in career exploration attitudes for undergraduates who complete a career course will be greater than change in career exploration attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

For this test, the change in Career Exploration (CE) from pretest to posttest was calculated. Mean change in CE (CEdif) for the C₁, T₁, and T₂ groups were as follows: -3.03, 5.66, and 6.87, respectively. Their corresponding adjusted means were -2.41, 5.49, and 6.17. An F value of 1.15 (df = 2,99), with a corresponding *p* value of 0.32, was derived from the analysis.

The collected data, when analyzed, did not support Hypothesis 2(b). While CEdif means reflected gains in career maturity for T₁ and T₂ and a decrease for C₁, these differences were not strong enough to prove statistically significant. Career exploration attitudes of both T₁ and T₂ were positively, but weakly, affected by participating in CACGS and a career course, respectively.

Table 7

Analysis of CPdif

	F	df	<i>p</i>
Group	1.85	2,99	.16
Gender	1.48	1,99	.23
Group x Gender	.52	2,99	.60
Covariates	19.83	2,99	<.001
(Pretest & Hours in Career Related Activities)			

Pairwise Comparisons

	Mean	Std. Er.	T(99)	P-value
C ₁ - T ₁	-6.37	4.37	-1.46	0.15
C ₁ - T ₂	-6.04	3.50	-1.72	0.09
T ₁ - T ₂	0.33	4.40	0.07	0.94
Female - Male	3.91	3.22	1.22	0.23

Table 8

Analysis of CEdif

	F	df	<i>p</i>
Group	1.15	2,99	.32
Gender	6.03	1,99	.02
Group x Gender	.64	2,99	.53
Covariates	18.13	2,99	<.001

(Pretest & Hours in
Career Related Activities)

Pairwise Comparisons

	Mean	Std. Er.	T(99)	P-value
C ₁ - T ₁	-4.38	5.98	-0.73	0.47
C ₁ - T ₂	-6.97	4.62	-1.51	0.13
T ₁ - T ₂	-2.59	5.90	-0.44	0.66
Female - Male	10.71	4.36	2.45	0.02

Insert Table 8 About Here

Hypothesis 2(c).

Change in decision making skills for undergraduates who complete a career course will be greater than change in decision making skills for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Change in Decision Making (DM) from pretest to posttest was the dependent variable for this analysis. Mean change in DM (DMdif) for C₁ was 4.70, adjusted to 5.17. Mean DMdif for T₁ was 0.19, adjusted to 2.58. Mean DMdif for T₂ was -5.76, adjusted to -8.71. The analysis yielded an F value of 4.41 (df = 2,99), with a corresponding *p* value of 0.01.

This hypothesis appears to have been fully supported by the data. In examining the results of the multiple comparison t-test performed on the adjusted means, the most marked difference was noted between C₁ and T₂, with the difference in change in decision making skills being statistically significant at the .005 level. Some difference in change in decision making skills was also evident between T₁ and T₂. However, applying the Bonferroni correction for multiple comparisons, yields a value lacking statistical significance. There was no evidence of difference in change between C₁ and T₁. However, closer scrutiny of the results demonstrates that the difference in change was evidently due to a marked decrease in measured decision making skills of T₂ when compared to the other two groups. C₁ and T₁ both showed modest gains in measured decision making skills from pretest to posttest. These results suggest an inverse relationship between participating

in a career course and the acquisition and application of career decision making skills. That is to say that DM subscale score means on the CDI for both C_1 and T_1 increased from pretest to posttest while these same means decreased for T_2 from pretest to posttest, suggesting that participating in a career course has some negative effect on career decision making skills, as measured by the CDI.

Insert Table 9 About Here

Hypothesis 2 (d).

Change in knowledge of the world of work for undergraduates who complete a career course will be greater than change in knowledge of the world of work for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

The dependent variable for this test was change in World of Work Information (WW) from pretest to posttest. The respective mean change in WW (WWdif) scores for the C_1 , T_1 , and T_2 were 3.58, 4.63, and -5.35. The adjusted means were 4.35, 5.35, and -7.00, respectively. The ANCOVA yielded an F value of 2.86 ($df = 2,99$), with a corresponding p value of 0.06.

The analysis of the data suggests support of this hypothesis. Indeed, a greater change occurred in the scores of T_2 than those of either C_1 or T_1 . Like the measure of decision making skills, a more detailed examination of the data reveals that while the WW scores for C_1 and T_1 increased moderately from pretest to posttest, the WW scores for T_2 fell markedly, thus creating a broad margin between T_2 's WWdif calculated value and the

Table 9

Analysis of DMdif

	F	df	<i>p</i>
Group	4.41	2,99	.01
Gender	1.10	1,99	.30
Group x Gender	.70	2,99	.50
Covariates	6.11	2,99	<.005
(Pretest & Hours in Career Related Activities)			

Pairwise Comparisons				
	Mean	Std. Er.	T(99)	P-value
C ₁ - T ₁	2.59	6.26	0.41	0.68
C ₁ - T ₂	13.88	4.84	2.87	<0.01
T ₁ - T ₂	11.29	6.25	1.81	0.07
Female - Male	4.90	4.68	1.05	0.30

WWdif values of C_1 and T_1 . There appears to be an inverse relationship between participating in a career course and acquiring knowledge and skills regarding the world of work. The mean WW subscale score on the CDI increased from pretest to posttest for C_1 and T_1 , but decreased for T_2 , suggesting that participating in a career course negatively affects undergraduates' world-of-work knowledge and skills, as measured by the CDI.

Insert Table 10 About Here

Hypothesis 2(e).

Change in career development attitudes for undergraduates who complete a career course will be greater than change in career development attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Change in Career Development Attitudes (CDA) from pretest to posttest was the dependent variable for this analysis. Mean change in CDA (CDAdif) for C_1 was -3.53, adjusted to -0.48. Mean CDAdif for T_1 was 8.13, adjusted to 7.76. Mean CDAdif for T_2 was 11.40, adjusted to 8.57. The analysis yielded an F value of 3.30 ($df = 2,99$), with a corresponding p value of 0.04.

Hypothesis 2(e) was only partially supported. While the initial analysis of covariance indicated a between group difference that was statistically significant at the .05 level, the multiple t-test utilizing the adjusted means suggested that a better conclusion would be that career development attitudes regarding career planning and career exploration for undergraduates who do not complete a career course changed less than these same career

Table 10

Analysis of WWdif

	F	df	p
Group	2.86	2,99	.06
Gender	.42	1,99	.52
Group x Gender	4.94	2,99	<.01
Covariates	1.78	2,99	.17
(Pretest & Hours in Career Related Activities)			

Pairwise Comparisons

	Mean	Std. Er.	T(99)	P-value
C ₁ - T ₁	-1.00	6.68	-0.15	0.88
C ₁ - T ₂	11.35	5.30	2.14	0.03
T ₁ - T ₂	12.35	6.73	1.84	0.07
Female - Male	3.21	4.96	0.65	0.52

development attitudes for undergraduates who complete a career course and undergraduates who utilize CACGS. There was no evidence of a difference in career development attitude change between T_1 and T_2 . However, the difference in career development attitudes change between C_1 and T_2 on this measure was statistically significant at the .05 level.

Noting that this measure was derived from a composite scale of the CDI which combined the CP and CE subscale standard scores (see Figure 3), a review of the results from the analysis of these measures suggests some synergistic relationship between the pretest-to-posttest changes for scores from these scales. Standing alone, differences in CP and CE subscale scores were either not statistically significant or statistically significant to a lesser degree than when examined combined as the composite score, CDA. These results suggest that the career development attitudes regarding career planning and career exploration, as measured by the CDI, of undergraduates are positively affected by participating in a career course and by utilizing CACGS.

Insert Figure 3 About Here

Insert Table 11 About Here

Hypothesis 2(f).

Change in career development knowledge for undergraduates who complete a career course will be greater than change in career development knowledge for

Figure 3. Relationship of CPdif and CEdif to CDAdif, using adjusted means

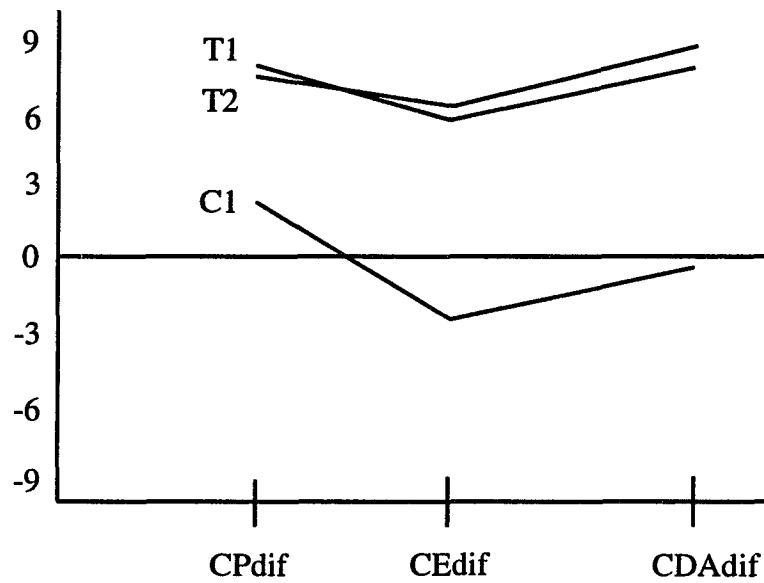


Table 11

Analysis of CDAdif

	F	df	<i>p</i>
Group	3.30	2,99	.04
Gender	6.37	1,99	.01
Group x Gender	1.12	2,99	.33
Covariates	16.08	2,99	<.001

(Pretest & Hours in
Career Related Activities)

Pairwise Comparisons

	Mean	Std. Er.	T(99)	P-value
C ₁ - T ₁	-8.24	4.73	-1.74	0.08
C ₁ - T ₂	-9.05	3.72	-2.44	0.02
T ₁ - T ₂	-0.81	4.66	-0.17	0.86
Female - Male	8.70	3.45	2.52	0.01

undergraduates who utilize CACGS and undergraduates who do not complete a career course.

The dependent variable, change in Career Development Knowledge and Skills (CDK) from pretest to posttest, was used for this test. The mean and adjusted mean changes in CDK (CDKdif) scores were as follows: C₁, 5.25 and 5.91; T₁, 1.88 and 3.40; T₁, -6.45 and -8.72. An F value of 4.52 (df = 2,99), with a corresponding *p* value of 0.01, was derived from the analysis.

The initial analysis of covariance for this measure suggests that this hypothesis was supported. The multiple t-test comparison on the adjusted means between the groups confirms this conclusion. There was no evidence of difference in CDKdif between C₁ and T₁. Likewise, no evidence of difference existed between T₁ and T₂ when the Bonferroni correction for multiple comparisons was applied. However, the difference between C₁ and T₂ for this measure was statistically significant at the .01 level.

Because CDK is a composite measure derived from the DM and WW subscales of the CDI (See Figure 4), the expectation was that this measure would reflect the results obtained from the analysis of these two measures. An in-depth examination of the results from this analysis confirmed this expectation. While a difference in change was evident, the difference was a result of a pretest-to-posttest decrease in CDK for T₂, with C₁ and T₁ demonstrating increases. These results suggest that participating in a career course is related to a decrease in career development knowledge regarding decision making skills and world-of-work knowledge and skills, as measured by the CDI, for undergraduates .

Figure 4. Relationship of DMdif and WWdif to CDKdif, using adjusted means

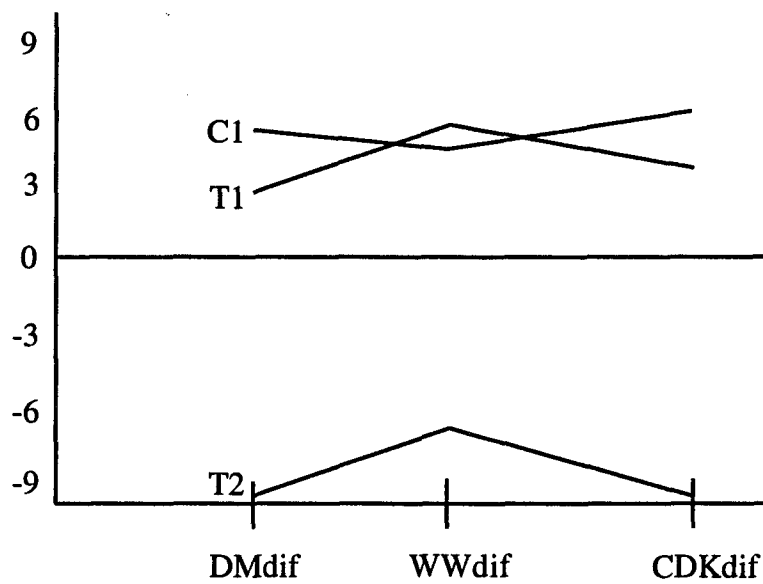


Table 12

Analysis of CDKdif

	F	df	<i>p</i>
Group	4.52	2,99	.01
Gender	.74	1,99	.39
Group x Gender	2.49	2,99	.09
Covariates	2.29	2,99	.12
(Pretest & Hours in Career Related Activities)			

Pairwise Comparisons

	Mean	Std. Er.	T(99)	P-value
C ₁ - T ₁	2.51	6.42	0.39	0.70
C ₁ - T ₂	14.62	5.03	2.91	<0.005
T ₁ - T ₂	12.12	6.48	1.87	0.06
Female - Male	4.14	4.82	0.86	0.39

Insert Figure 4 About Here

Insert Table 12 About Here

Hypothesis 2(g).

Change in career orientation for undergraduates who complete a career course will be greater than change in career orientation for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

A test was performed employing the change in Career Orientation Total (COT) from pretest to posttest as the dependent variable. Mean change in COT (COTdif) for C_1 was 0.00; for T_1 , 6; for T_2 , 2.90. The respective adjusted means were 1.92, 7.53, and -0.49. The ANCOVA yielded an F value of 0.74 ($df = 2,99$), with a corresponding p value of 0.48. There was no evidence of support for this hypothesis from the analysis. The initial analysis of covariance suggested no statistically significant difference in COTdif between the groups and the examination of the multiple t-test comparisons confirmed this conclusion. Because COT is a composite scale derived by combining the CP, CE, DM, and WW subscales, these results suggest that participating in a career course has no statistically significant effect on the career maturity of undergraduates.

Insert Table 13 About Here

Table 13

Analysis of COTdif

	F	df	<i>p</i>
Group	.74	2,99	.48
Gender	2.30	1,99	.13
Group x Gender	.62	2,99	.54
Covariates	3.36	2,99	.04
(Pretest & Hours in Career Related Activities)			

Pairwise Comparisons

	Mean	Std. Er.	T(99)	P-value
C ₁ - T ₁	-5.61	6.55	-0.86	0.39
C ₁ - T ₂	2.41	5.23	0.46	0.65
T ₁ - T ₂	8.02	6.59	1.22	0.23
Female - Male	7.41	4.88	1.52	0.13

Hypothesis 3.

More undergraduates who complete a career course will change their choice of preferred occupational group, as compared to undergraduates who utilize CACGS or undergraduates who do not complete a career course.

Of the 107 participants who completed the investigation, 49 changed their choice of Preferred Occupational Group from pretest to posttest. Of these 49, ten were members of C₁, three were members of T₁, and 36 were members of T₂. The ANCOVA was performed employing a dependent variable created by coding Change in Preferred Occupational Group (OGPchange) with 1 for no change from pretest to posttest and 0 for change from pretest to posttest. The pretest COT measure and hours spent participating in career-related activities were utilized as covariates. The mean OGPchange for C₁ was 0.77, adjusted to 0.76. The mean OGPchange for T₁ was 0.85, adjusted to 0.84. The mean OGPchange for T₂ was 0.16, adjusted to 0.18. The analysis yielded an F value of 24.72 (df = 2,102), with a corresponding *p* value of <0.001.

Hypothesis 3 appeared to be supported in the initial analysis of covariance, with statistical significance at the .001 level. The multiple t-test comparisons confirmed this conclusion. There was no evidence of difference for this measure between C₁ and T₁. However, the evidence of differences between C₁ and T₂ ($t = 6.26$ (df = 102); $p < 0.001$) and between T₁ and T₂ ($t = 5.89$ (df = 102); $p < 0.001$) was extremely strong, suggesting that participating in a career course influences students' choices of preferred occupational group, either by causing students to question an earlier choice or to focus more acutely on a particular preferred occupational group.

Table 14

Analysis of OGPchange

	F	df	<i>p</i>
Group	24.72	2,102	<.001
Covariates	2.11	2,102	.13
(Pretest & Hours in Career Related Activities)			

Pairwise Comparisons

	Mean	Std. Er.	T(102)	P-value
C ₁ - T ₁	-0.08	0.11	-0.77	0.44
C ₁ - T ₂	0.59	0.09	6.26	<0.001
T ₁ - T ₂	0.67	0.11	5.89	<0.001

Insert Table 14 About Here

Hypothesis 4(a).

Female and male undergraduates who complete a career course will demonstrate similar career maturity change, as will female and male undergraduates who utilize CACGS and female and male undergraduates who do not complete a career course.

A series of analyses of covariance were performed employing changes in each CDI subscale and composite scale from pretest to posttest as the dependent variables, with the corresponding pretest score and hours spent participating in career related activities as covariates. In examining the Group x Gender interaction, tests utilizing WWdif and CDKdif yielded respective F values of 4.94 ($df = 2,99$) and 2.49 ($df = 2,99$) with respective corresponding p values of <0.01 and 0.088. Tests employing CPdif, CEDif, DMdif, CDAdif, and COTdif yielded the following respective F and p values: 0.52 ($df = 2,99$) and 0.60; 0.64 ($df = 2,99$) and 0.53; 0.70 ($df = 2,99$) and 0.50; 1.12 ($df = 2,99$) and 0.33; and 0.62 ($df = 2,99$) and 0.54. Summaries of the data analyses are shown in Tables 6 through 12.

In general, the data supported this hypothesis. There was no evidence of a group x gender interaction effect in the pretest-to-posttest change in COT, the most inclusive composite scale of the CDI. This was mirrored in the results of the analysis of changes in the CP, CE, and DM subscales and the CDA composite scale.

However, the analysis of the change in WW from pretest to posttest suggested a group x gender interaction effect that was statistically significant at the .01 level. An examination of the effect means suggested that this noted interaction effect was a result of a

pretest-to-posttest WW scale standard score decrease of more than 13, adjusted to 16.87, in T₂ males. Means and adjusted means for other group-gender groups were calculated as follows:

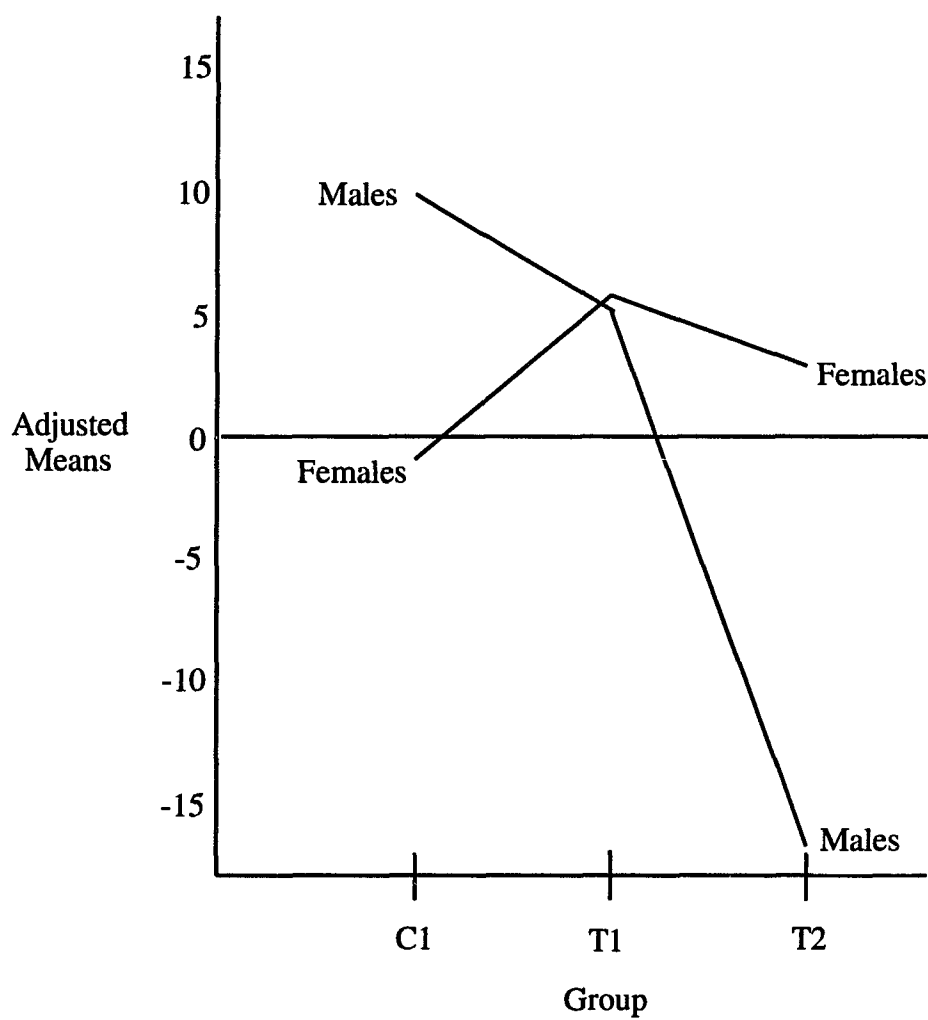
Group	Means	Adjusted Means
C ₁ Female	-2.17	-1.03
C ₁ Male	9.33	9.72
T ₁ Female	5.25	5.68
T ₁ Male	4.00	5.01
T ₂ Female	2.65	2.86
T ₂ Male	-13.35	-16.87

A plot of the adjusted means is shown in Figure 5.

Insert Figure 5 About Here

As anticipated, evidence of a group x gender interaction effect was also present in the analysis of the change in CDK from pretest to posttest, but at a .10 level of statistical significance. An examination of the effect means suggested influences similar to those for the WW subscale. The CDKdif group x gender means and adjusted means were calculated as follows:

Figure 5. Plot of WWdif Adjusted Means.



Group	Means	Adjusted Means
C ₁ Female	2.94	4.14
C ₁ Male	7.56	7.67
T ₁ Female	1.50	3.09
T ₁ Male	2.25	3.71
T ₂ Female	-0.73	-0.43
T ₂ Male	-12.18	-17.01

A plot of the adjusted means is shown in Figure 6.

Insert Figure 6 About Here

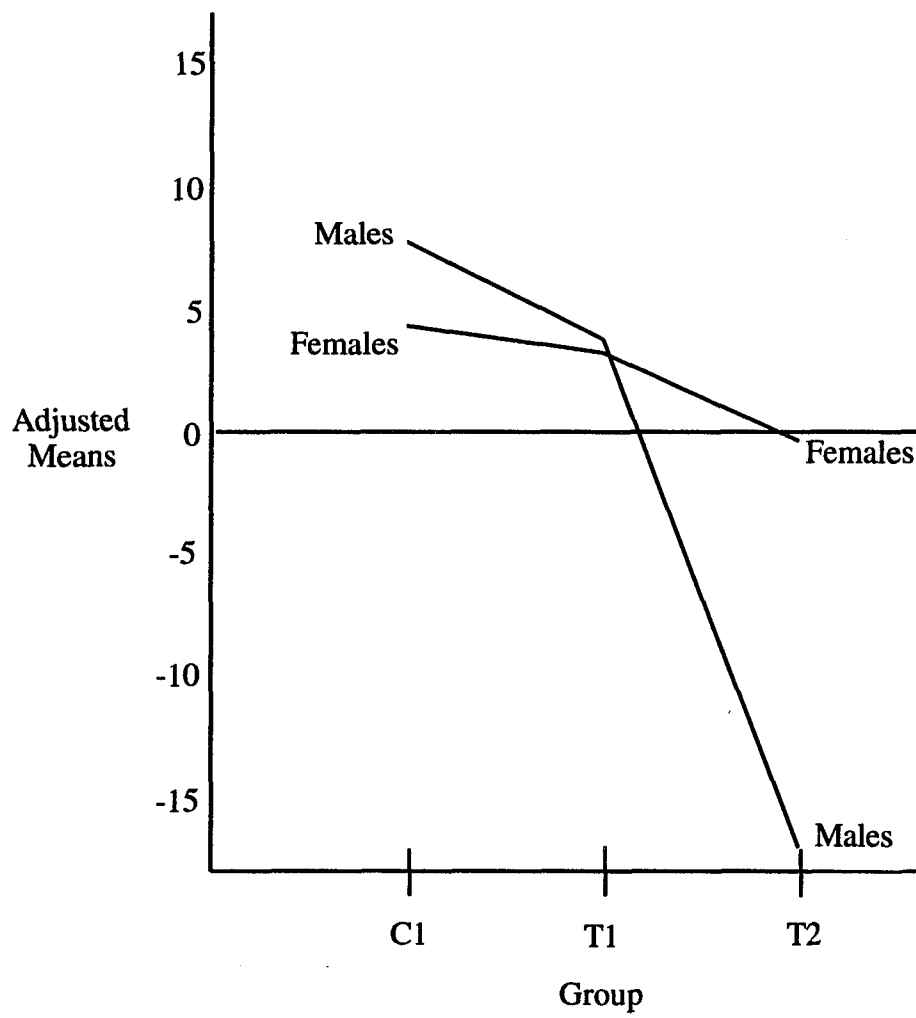
These results suggest that participating in a career course affects similar career maturity change for both males and females, except in knowledge of the world of work. Evidence from this study raises the issue that males and females may assimilate this knowledge differently.

Hypothesis 4(b).

Overall, female undergraduates will exhibit a higher level of career maturity than male undergraduates.

A series of tests was performed utilizing pretest and posttest subscale and composite scale scores from the CDI administrations. A t-test was employed for the pretest scores (CP1, CE1, DM1, WW1, CDA1, CDK1, and COT1), while an analysis of covariance was utilized for the posttest scores (CP2, CE2, DM2, WW2, CDA2, CDK2, and COT2) with the respective pretest score and hours spent participating in career-related activities as

Figure 6. Plot of CDKdif Adjusted Means.



covariates. The analysis of COT1, the composite scale combining CP1, CE1, DM1, and WW1 scales, computed a female mean COT1 of 100.81 and a male mean COT1 of 87.70, yielding a t value of 3.06 ($df = 105$), with a corresponding p value of <0.005 . The COT2 means were 105.84, adjusted to 103.03 for females and 86.67, adjusted to 93.90 for males. The analysis yielded an F value of 4.41 ($df = 1, 103$), with a corresponding p value of 0.04. Analyses of the standard scores for CP1, DM1, WW1, and CDK1 and the standard scores for CE2, DM2, CDA2, and CDK2 yielded similar results. The analyses of the CE1 and CDA1 measures resulted in respective t values of -0.37 ($df = 105$) and 0.68 ($df = 105$), with respective corresponding p values of 0.71 and 0.50. The analysis of the CP2 measure yielded an F value of 1.41 ($df = 1, 103$), with a p value of 0.24.

Strong support for this hypothesis was present in the analyses performed. Mean standard scores for both administrations on all subscales and composite scales of the CDI, except for CE1, were greater for females than for males, though not all were statistically significant. Among the pretest means, CP1 was statistically significant at the .10 level, while DM1, WW1, CDK1, and COT1 were statistically significant at the .01 level. Although higher for females than for males, the difference in CDA1 means was not statistically significant. Of the posttest means, DM2 and CDK2 scale differences were statistically significant at the .1 level; CE2, CDA2, and COT2 at the .05 level. There was no statistically significant difference between the female and male means for the CP2 and WW2 measures, though female means were higher in both instances. These results, suggesting that, overall, female undergraduates do exhibit a higher level of career maturity than do undergraduate males, parallel the contentions of the authors of the CDI that subscale and composite scale means are higher for females than for males (Thompson et al., 1982).

Table 15

Level of Career Maturity by Gender - Pretest Standard Scores

Pretest Scale	Males			Females			t	df	p
	n	Mean	sd	n	Mean	sd			
CP	30	100.7	15.96	77	107.04	18.35	1.66	105	.10
CE	30	99.8	20.80	77	98.12	21.46	-.37	105	.71
DM	30	83.03	22.60	77	97.30	14.48	3.56	105	<.001
WW	30	87.67	20.84	77	98.23	15.23	2.89	105	.00463
CDA	30	100.33	19.82	77	103.16	18.98	.68	105	.50
CDK	30	82.90	25.40	77	97.58	14.24	3.79	105	<.001
COT	30	87.70	25.90	77	100.81	17.01	3.06	105	<.005

Level of Career Maturity by Gender - Posttest Standard Scores

Posttest Scale	Covariates (Pretest Scores & Hours in Career Related Activities)			Gender		
	F	df	p	F	df	p
CP	25.60	2,103	<.001	1.41	1,103	.24
CE	18.59	2,103	<.001	5.96	1,103	.02
DM	25.25	2,103	<.001	3.68	1,103	.06
WW	26.92	2,103	<.001	1.93	1,103	.17
CDA	28.83	2,103	<.001	5.31	1,103	.02
CDK	33.74	2,103	<.001	2.78	1,103	.10
COT	34.88	2,103	<.001	4.41	1,103	.04

Insert Table 15 About Here

Hypothesis 5.

Undergraduates who enroll in a career course for career-related reasons will exhibit greater career maturity change than undergraduates who enroll for other reasons.

Two variables were created to test this hypothesis. Participants from the CED 210 course were asked to indicate on a checklist the reason(s) they enrolled in the course. In addition, they were asked to indicate the primary reason they enrolled. Usable data regarding reasons for enrolling in the course were collected from 41 of the 43 members of T₂. A variable Reason 1 (CR1) was coded 1 if the primary reason was career related and 0 if the primary reason was not career related. Fifteen participants indicated a career related reason as the primary reason for enrolling in the course; 26 participants indicated non-career related reasons. A variable Reason 2 (CR2) was coded 1 if more career related reasons were given than reasons that were not career related. It was coded 0 if the opposite was true. Of the 41 participants who reported reasons for enrolling in course, 18 participants indicated a majority of career related reasons while 23 participants reported a majority of non-career related reasons for enrolling in CED 210.

Analyses of covariance were performed for each variable employing changes from pretest to posttest in all subscale and composite scale measures of the CDI. The corresponding pretest measure was used as a covariate. For CR1, the mean COTdif for those participants with a non-career related primary reason for enrolling was 4.08, adjusted to 4.07. Mean COTdif for those participants with a career related reason for enrolling was 3.40, adjusted to 3.41. This analysis yielded an F value of 0.004 (df = 1,38), with a

corresponding p value of 0.93. For CR2, the mean COTdif for those participants indicating a majority of non-career related reasons was -1.00, adjusted to -1.05. The mean COTdif for those participants indicating a majority of career related reasons was 10.00, adjusted to 10.07. The analysis yielded an F value of 2.88 ($df = 1,38$), with a corresponding p value of 0.10. Analyses of the four subscale scores and two composite scores on both pretest and posttest measures yielded results similar to those from the analysis of COTdif for CR1.

Hypothesis 5 was not supported. Undergraduates who enrolled in a career course for career-related reasons did not exhibit greater career maturity change, as measured by the CDI, than did undergraduates who enrolled in a career course for other reasons. The reasons for enrolling in a career course that T_2 participants indicated were analyzed in two different ways. The first was by the primary reason given, either career related or non-career related. The second was majority reasons, either career-related or non-career related, with ties being decided by primary reason. The analysis of COTdif for CR1 did yield statistically significant results. However, this composite scale of the CDI is the least reliable of the scales, suggesting that the results of this particular analysis be discounted in favor of overwhelming support to the contrary provided by the other analyses. These results suggests that the reasons students declare for enrolling in a career course have no relationship to the career maturity change affected by participating in a career course.

Insert Table 16 About Here

Table 16

Career Maturity Change Considering Reasons for Career Course Enrollment - Primary

Scale	Covariate (Pretest Scores)			CR1		
	F	df	<i>p</i>	F	df	<i>p</i>
CP	24.87	1,38	<.001	1.78	1,38	.19
CE	14.97	1,38	<.001	.003	1,38	.96
DM	.17	1,38	.68	.35	1,38	.56
WW	.16	1,38	.69	.36	1,38	.55
CDA	21.98	1,38	<.001	.31	1,38	.58
CDK	.06	1,38	.81	.01	1,38	.91
COT	<.001	1,38	.99	.009	1,38	.93

Career Maturity Change Considering Reasons for Career Course Enrollment - Majority

Scale	Covariate (Pretest Scores)			CR2		
	F	df	<i>p</i>	F	df	<i>p</i>
CP	21.11	1,38	<.001	1.67	1,38	.20
CE	16.45	1,38	<.001	1.12	1,38	.30
DM	.44	1,38	.51	.34	1,38	.57
WW	.21	1,38	.65	1.77	1,38	.19
CDA	21.13	1,38	<.001	1.57	1,38	.22
CDK	.002	1,38	.97	.95	1,38	.36
COT	.04	1,38	.85	2.88	1,38	.10

Hypothesis 6.

Undergraduates who participate in career development-related activities outside of class will exhibit greater maturity change than undergraduates who do not participate in these activities.

To test this hypothesis, a variable, Participation (Part), was created by coding 1 for those participants in C₁ and T₁ who participated in career related activities and coding a 0 for those participants in these groups who did not participate in career related activities. Usable data were collected from all 64 participants in C₁ (44) and T₁ (20). Of these 64 participants, 60 indicated participation in some type of career related activity while only four indicated that they had not participated in any career related activity during the investigation period. T₂ was not utilized for this test due to the time spent participating in career related activities in class.

Analyses of covariance were performed employing changes from pretest to posttest on all subscale and composite scale scores of the CDI, with the corresponding pretest score as the covariate. Mean COTdif, the composite of CPdif, CEdif, DMdif, and WWdif, was -0.75, adjusted to -3.03 for those participants who did not take part in career related activities. For those who participated in career related activities, the mean COTdif was 3.22 adjusted to 3.37. The ANCOVA yielded an F value of 0.44 (df = 1,61) with a corresponding *p* value of 0.51. Except for the CP measure, analyses of the four subscale scores and two composite scores on both pretest and posttest measures yielded similar results. The analysis of CPdif resulted in an F value of 5.27 (df = 1,61), with a corresponding *p* value of 0.025.

In general, hypothesis 6 was not supported. There was no evidence of differences in the CE, DM, and WW subscales nor in the CDA, CDK, and COT composite scales of the CDI between those participating in career development related activities outside of class and those who do not participate in these activities. The one exception was in the CP measure. The initial analysis of covariance suggested that some difference between these groups did exist on this measure, statistically significant at the .05 level. An examination of effect means showed that those students who participated in career development related activities experienced a mean change in standard score of 3.38, adjusted to 3.24 while those who did not participate in these activities experienced a mean change in standard score of -14.25, adjusted to -12.16. These isolated results suggest that not participating in career related activities negatively affects change in career planning attitudes of undergraduates, as measured by the CDI. That is to say that students who did not participate in career related activities demonstrated a decrease in career planning attitudes.

Insert Table 17 About Here

These results and methodological and design limitations, as well as suggestions for further research are discussed in Chapter V.

Power Analyses

Post hoc power analyses for this investigation were performed on all dependent variables for each hypothesis. Power ranged from a low of .25 for the CDK pretest measure utilized in Hypothesis 4(b) to a high of .96 for the CEDif measure utilized in Hypothesis 6. Complete results of the power analyses are summarized in Table 18. For these two particular instances, this indicates that, in the case of the CDK pretest measure

Table 17

Career Maturity Change Considering Participation in Career Development Related
Activities

Scale	Covariates			(Pretest Scores)			Participation
	F	df	<i>p</i>	F	df	<i>p</i>	
CP	13.03	1,61	<.001	5.27	1,61	.03	
CE	21.99	1,61	<.001	.006	1,61	.94	
DM	19.22	1,61	<.001	.09	1,61	.76	
WW	2.49	1,61	.12	.86	1,61	.36	
CDA	11.48	1,61	<.005	1.51	1,61	.22	
CDK	13.46	1,61	<.001	.69	1,61	.41	
COT	7.40	1,61	<.01	.44	1,61	.51	

($t = 3.79$; $df = 105$; $p < .001$), there is a 25% likelihood of detecting this difference in replicated investigations with a similar n , while, in the case of the CEdif measure ($F = .006$; $df = 1,61$; $p = .94$), the likelihood of detecting this difference in replicated investigations with a similar n is 96%.

Insert Table 18 About Here

Table 18

Summary of Power Analyses by Hypothesis

H _a	Ind. Var.	Dependent Variable							OGP Change
		CPdif	CEdif	DMdif	WWdif	CDAdif	CDKdif	COTdif	
1	Group							.68	
2a	Group	.60							
2b	Group		.64						
2c	Group			.56					
2d	Group				.58				
2e	Group					.57			
2f	Group						.56		
2g	Group							.68	
3	Group								.51
4b	Sex	.51	.50	.52	.60	.50	.54	.50	
5	Part	.47	.94	.77	.53	.51	.55	.59	
6	CR1	.51	.96	.62	.62	.64	.91		.93
	CR2	.51	.52	.63	.51	.51	.53		.51

H _a	Ind. Var.	Dependent Variable						
		CP	CE	DM	WW	CDA	CDK	COT
4a	Sex (Pretest)	.55	.73	.25	.38	.58	.25	.33
	Sex (Posttest)	.51	.50	.50	.50	.50	.50	.50

CHAPTER V

DISCUSSION

This chapter includes a summary of the investigation and a discussion of the results of the data analyses and methodological and design limitations that may have influenced these results. Implications for undergraduate career interventions, undergraduate career courses, career course instructor training, and future research are also discussed.

Summary

This investigation was undertaken for several reasons:

- 1) to examine the proposition that participating in a career course influences the career development of undergraduates, marking this type of course as an effective career intervention;
- 2) to examine the relationship of various personal factors (i.e., gender, reasons for enrolling in a career course, participation in out-of-class career-related activities) to the career maturity of undergraduates; and
- 3) to add substantive data to a field in which little data exist to support semester- or quarter-long career courses as effective career development interventions (Babcock & Kaufman, 1976; Evans & Rector, 1978).

In consideration of assertions by Heppner and Krause (1979) and Touchton, Wertheimer, Comfeld, and Harrison (1977) that many previous studies which reported career courses as effective career interventions lacked a no-treatment control group, a pretest-posttest quasi-experimental design (Isaac & Michaels, 1971), or nonequivalent control group design (Campbell & Stanley, 1963), was employed. Standard scores from

the Career Planning (CP), Career Exploration (CE), Decision Making (DM), and World-of-Work Information (WW) subscales and the Career Development Attitudes (CDA), Career Development Knowledge and Skills (CDK), and Career Orientation Total (COT) composite scales of the Career Development Inventory (CDI) (Super et al., 1981) were utilized as dependent measures for most analyses. Standard score differences were calculated by subtracting pretest scores from posttest scores on each scale and also were utilized as dependent measures for some analyses.

Thirteen research hypotheses were tested by analyzing data collected from three groups of undergraduates: a no-treatment control group (C_1), a group assigned to utilize Career Assisted Career Guidance Systems (CACGS), SIGI+ (Educational Testing Service, 1990) for this investigation, for a minimum of one hour (T_1), and a group enrolled in CED 210 Life/Career Planning (T_2), a career course offered by the Department of Counseling and Educational Development at the University of North Carolina at Greensboro (Osborne & Usher, 1994). All students were undergraduates at the University of North Carolina at Greensboro. The following hypotheses were tested:

Hypothesis 1.

Career maturity change for undergraduates who complete a career course will be greater than career maturity change for undergraduates who only utilize CACGS and those undergraduates who do not complete a career course.

Hypothesis 2(a).

Change in career planning attitudes for undergraduates who complete a career course will be greater than change in career planning attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Hypothesis 2(b).

Change in career exploration attitudes for undergraduates who complete a career course will be greater than change in career exploration attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Hypothesis 2(c).

Change in decision making skills for undergraduates who complete a career course will be greater than change in decision making skills for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Hypothesis 2(d).

Change in knowledge of the world of work for undergraduates who complete a career course will be greater than change in knowledge of the world of work for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Hypothesis 2(e).

Change in career development attitudes for undergraduates who complete a career course will be greater than change in career development attitudes for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Hypothesis 2(f).

Change in career development knowledge for undergraduates who complete a career course will be greater than change in career development knowledge for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Hypothesis 2(g).

Change in career orientation for undergraduates who complete a career course will be greater than change in career orientation for undergraduates who utilize CACGS and undergraduates who do not complete a career course.

Hypothesis 3.

More undergraduates who complete a career course will change their choice of preferred occupational group as compared to undergraduates who utilize CACGS or undergraduates who do not complete a career course.

Hypothesis 4(a).

Female and male undergraduates who complete a career course will demonstrate similar career maturity change as will female and male undergraduates who utilize CACGS and female and male undergraduates who do not complete a career course.

Hypothesis 4(b).

Overall, female undergraduates will exhibit a higher level of career maturity than male undergraduates.

Hypothesis 5.

Undergraduates who enroll in a career course for career related reasons will exhibit greater career maturity change than undergraduates who enroll for other reasons.

Hypothesis 6.

Undergraduates who participate in career development related activities outside of class will exhibit greater maturity change than undergraduates who do not participate in these activities.

The CDI, along with a Career Development Questionnaire (CDQ), was administered during the first two weeks of the fall semester. The same instrument and a Posttest Career

Development Questionnaire were administered again after a ten- to twelve-week elapsed time period. In addition, critical incidents data were collected from T₂ via a diary/log that was to be completed at the end of each class meeting. No special instructions were given to C₁ participants. They were encouraged to participate in all aspects of undergraduate life as they would were they not engaged in this investigation. T₁ participants were asked to utilize SIGI+ for a minimum of one hour during the investigation period. Otherwise, they were encouraged to participate in all aspects of undergraduate life as they would were they not engaged in this investigation. It was expected that T₂ participants, undergraduates enrolled in a career course, would complete the course assignments and participate in class activities during the investigation period.

Hypotheses 1 and 2(a) through 2(g) were tested by performing a series of analyses of covariance (ANCOVA). For each hypothesis, the dependent variable was a difference score calculated by subtracting each individual's pretest score on a subscale or composite scale of the CDI from the corresponding posttest score. The related pretest subscale or composite scale score and hours spent participating in career-related activities were employed as covariates. The CDI asks participants to choose one occupational group that appeals to them the most. Participants were specifically instructed to complete this item for each administration.

Hypothesis 3 was tested via an ANCOVA employing a dependent variable created by coding Change in Preferred Occupational Group (OGPchange) with 1 for no change from pretest to posttest and 0 for change from pretest to posttest. The pretest COT measure and hours spent participating in career-related activities were utilized as covariates.

To test hypothesis 4(a), a series of ANCOVAs was performed employing changes in each CDI subscale and composite scale from pretest to posttest as the dependent variables with the corresponding pretest score and hours spent participating in career related activities as covariates.

Hypothesis 4(b) was tested by performing a series of tests utilizing pretest and posttest subscale and composite scale scores from the CDI administrations. An analysis of variance (ANOVA) was employed for the pretest scores (CP1, CE1, DM1, WW1, CDA1, CDK1, and COT1) while an ANCOVA was utilized for the posttest scores (CP2, CE2, DM2, WW2, CDA2, CDK2, and COT2) with the respective pretest score and hours spent participating in career-related activities as covariates.

Two variables were created to test Hypothesis 5. T_2 participants were asked to indicate, via a checklist, the reason(s) they enrolled in the career course. In addition, they were asked to indicate the primary reason they enrolled. A variable, Reason 1 (CR1), was coded 1 if the primary reason was career related and 0 if the primary reason was not career related. A variable, Reason 2 (CR2), was coded 1 if more career related reasons were given than reasons that were not career related. It was coded 0 if the opposite was true. Analyses of covariance were performed for each variable employing changes from pretest to posttest in all subscale and composite scale measures of the CDI. The corresponding pretest measure was used as a covariate. C_1 and T_1 participants were not included in the examination of this hypothesis.

To test Hypothesis 6, a variable, Participation (Part), was created by coding 1 for those participants in C_1 and T_1 who participated in career related activities and coding a 0 for those participants in these groups who did not participate in career related activities. T_2

was not utilized for this test due to the time spent participating in career related activities in class. Analyses of covariance were performed employing changes from pretest to posttest on all subscale and composite scale scores of the CDI, with the corresponding pretest score as the covariate.

Discussion

The mixed results of this investigation parallel similar results of previous investigations involving career maturity as a dependent measure and participation in a career course as the independent measure (e.g., Barker, 1981; Davis & Horne, 1986; Ganster & Lovell, 1978.). Overall, females demonstrated a greater level of career maturity than males, which supports the contention of the authors of the CDI (Thompson, et al., 1982). In addition, females reported a higher average GPA, 2.93, than did males, 2.58. This difference was statistically significant at the .005 level, possibly offering support for Thompson et al.'s (1982) observation that “females generally surpass males in school achievement...” (p. 11). As expected, there was no significant change in career maturity across sexes suggesting that career maturity developmental rates are similar for both females and males. Students who participated in a career course tended to change their choice of preferred occupational group. However, neither those students who participated in career related activities outside of class, nor those who enrolled in a career course for career related reasons, exhibited greater change in career maturity than those who did not participate in career related activities or those who enrolled in a career course for non-career related reasons. There also was no evidence of a relationship between reasons for enrolling in a career course and change in career maturity when males and females were compared.

Participation in a career course appeared to positively affect career planning attitudes, or the thinking about career planning. However, a similar effect on career exploration

attitudes, the thinking about exploring careers, was not indicated. Although students in this sample may have ceased or curbed career exploration activities and tentatively chosen a career on which to focus, the results of examining Hypothesis 3 indicate that this is not the case. In fact, more than 80% of T₂ changed their choice of preferred occupational group from pretest to posttest, while less than 12% of the other participants changed their selections, suggesting that participating in a career course significantly influences vocational interests. Participating in a career class may have encouraged students to examine personal characteristics, such as values or personality type, and then to more carefully consider how these personal characteristics correspond to the characteristics and requirements of various occupations.

The most intriguing results were the inverse relationships between decision making skills and participating in a career course, and knowledge of the world of work and participating in a career course. How could participating in a career course have such a negative effect on these two measures? One possible explanation is that participating in such a course may highlight students' lack of skill and knowledge in these areas. On a pretest measure, students may believe that they are skilled and knowledgeable, but as the course progresses, they realize that deficiencies may exist in these areas and they come to question their own judgment.

Developmental aspects of the individuals must also be considered. An actual change in career maturity may not become evident across a time span of ten to twelve weeks. Instead, perhaps, a longer period of time must elapse before the effects of participating in a career course are internalized and exhibited in completing an assessment such as the CDI. The results of this investigation may have been different – i.e., career maturity would increase – had the posttest been administered after a longer time lapse from the pretest.

Another plausible explanation is that a variety of decision making processes may have been presented with little time devoted to helping students actually learn to use these processes. Likewise, instructors may have exposed students to much information regarding the world of work, but afforded them little time for processing and assimilation of this information, or students were in the process of assimilating these new skills and information at the time of the posttest administration. An examination of the course syllabus suggests support for either of the two latter explanations.

Critical incidents logs were reviewed considering the results of the investigation. Reported incidents of significant learning appeared to "fall" into two categories: self-knowledge and career/work processes. CED 210 students repeatedly indicated favorable reactions to classes involving learning more about self. Specific class topics included values, gender stereotypes, and preferred activities as they correlate to work. Other preferred classes involved interpretation of assessment instruments such as the Myers Briggs Type Indicator, the Strong Interest Inventory, The Values Scale, and The Salience Inventory. Class topics in the career/work processes category that were viewed favorably included choosing a career, preparing a résumé, and interviewing skills.

Equally notable from this critical incident log review were the increasing number of unfavorable reactions to classes as the semester progressed. During the first month, CED 210 students reported unfavorable reactions, "no significant learning occurred," to a mean of 3 of the 8 class meetings. This mean increased to 4 during the second month and to 5 during the third. These reports may indicate that course expectations were not being met or that the material being presented later in the course failed to pique the interest of the students. Other factors related to the typical progression of classes may have influenced these results. As the semester progresses, students' academic work load typically increases

leaving less time to devote to each course. It should also be noted that the instructors for CED 210 were doctoral students whose academic work loads may have been increasing as well, affording them less time for class preparation. Routine and repetition may have been the norm.

In addition, the number of completed logs decreased across the months from 38 during the first month to 21 to only 9 during the third month. Possible explanations include a loss of interest in the investigation on the part of the students or instructors' failure to provide time at the end of class for log entry. Considering the increase in unfavorable reactions to classes, students may have avoided making log entries in an effort to avoid casting a negative light on CED 210 material or instruction. A conversation with the instructors suggested that they often failed to provide this time for log entry.

Implications for Undergraduate Career Interventions

The general conclusion of this investigation, that a career course affects change, both positive and negative in some dimensions of career maturity, suggests that the effectiveness of any career intervention needs to be appropriately assessed, especially in light of Oliver and Spokane's (1989) findings that most researchers have not used standardized outcome measures and that many failed to even search for a previously used measure of their outcome variable (e.g., Branyon & Piotrowski, 1986). The CDI was chosen for this investigation, not only for its value as a general measure of career maturity, but because the career course intervention employed as treatment was based on the Career Development, Assessment, and Counseling (C-DAC) model developed by Super (1991). Similarly, other career interventions should be assessed via some measure that is related to the specific purpose of the intervention, or the intervention itself. If the intervention goal is solely to affect the career decision making skills of the clients or participants, then some

measure of career decision making is suggested. If the intervention is designed to encourage clients or participants to increase their career exploration activities, then a simple behavioral measure might be in order.

Perhaps the CDI is not the best measure for this particular career course intervention. Although developed by Super et al. (1981), as was the C-DAC model upon which CED 210 was based, a decade separates the two. To date, the CDI (Super et al., 1981) has yet to be revised. However, students may be approaching career planning and career exploration differently than in the early 1980's. In turn, these different approaches may have affected their career decision making process. The work world has also changed. Equal opportunity, affirmative action, and personal harassment issues have influenced the workplace. Job seeking practices have evolved. What was considered to be valued world-of-work knowledge when the CDI was developed may be of secondary importance today. In addition, critics of the CDI have voiced concern regarding its value as a counseling tool (e.g., Bauernfeind et al., 1986), suggesting that while valuable as a research instrument, caution should be exercised when it is employed as an assessment tool for career counseling. Perhaps these same cautions should be extended to other career interventions.

This investigation also yielded anecdotal evidence in support of Fretz's (1981) and Oliver and Spokane's (1988) cautions regarding the "uniform client hypothesis." Some T₂ participants demonstrated positive changes in career maturity, while others displayed either negative changes or no changes. Perhaps a career course intervention simply was not the most appropriate career intervention for those participants who did not demonstrate positive change. For example, Kivlighan et al. (1981) suggested that group counseling as a career intervention was only effective for those counselees whose sociability could be identified as people-oriented as opposed to task-oriented. Individuals seeking assistance

with career concerns should be presented with options for interventions, or even counseled to determine those interventions most appropriate for their particular concerns or situations or even sociability.

Cost is a factor that cannot be ignored. Based upon Oliver and Spokane's (1989) investigation involving intensity of treatment, the workshop/structured group career intervention is the clear cost leader at \$2.51 per effect size per client hour over individual counseling (\$20.69) and career courses (\$10.87). Cost effective and needs-effective career interventions should be developed so that more individuals may be served while maintaining intervention implementation expenses at reasonable levels. This must occur without sacrificing positive client change.

Providers of career interventions are challenged to offer and provide a variety of services, including counseling, consultation, and referral, so that clients receive services that will affect desired changes at a reasonable cost. Colleges and universities are particularly challenged since the costs of providing these services are typically supported by an annual budget as opposed to client fees. It then becomes imperative that students be counseled to identify the least costly intervention that will best meet their needs.

Implications for Undergraduate Career Courses

Cost is a major factor underlying the development and implementation of undergraduate career courses. As operating expenses increase, budgets become more restrictive resulting in the loss of staff and other resources. Individual and small group career interventions are vanishing as alternative career interventions on college and university campuses, requiring a reversal of emphasis from Reardon, Zunker, and Dyal's (1979) survey of career development services on college and university campuses in which approximately 85% of the respondents offered individual career counseling, 68% small-

group counseling, but only 29% offered career development courses. Career courses must emerge as a primary intervention in these settings, while becoming broader in scope to be effective in meeting diverse needs and accommodating a diverse student population.

Results from this investigation imply that career courses be designed with certain career-related goals as a foundation that guides course development. In this instance, CED 210 may have been conceived to assist undergraduates in accomplishing certain career-related goals (Osborne & Usher, 1994), but may have veered from this "path" as different instructors assumed leadership and teaching responsibilities. In addition, text choice may influence goal achievement. As new editions appear, authors may gradually and subtly shift emphases.

Career courses may develop a reputation on campuses as "GPA fodder" or "easy As." In this study, many students indicated non-career related reasons for enrolling in a career course. These included recommendations from friends and faculty as well as improving grade point averages. Haney and Howland (1978) may have indirectly addressed this issue in their comparison of departmental career course offerings to interdisciplinary and non-departmental courses. Enrollment in courses offered through academic departments may be less affected by non-career related reasons for enrollment. When offered within a particular departmental major course of study, a career course may have a different effect than when offered by a career services office to all students. Students may visualize the departmentally-offered career course as having a more direct bearing on their employability in their chosen field. Some courses may even encourage direct involvement by departmental faculty (Haney & Howland, 1978). Conversely, the non-departmental or interdisciplinary career course draws students from all majors. Because issues and concerns of students from many major fields of study must be

addressed, this diversity dilutes the focus of the class, causing some students to lose interest and perhaps even all students to lose interest at some point.

This is not to say that the non-departmental or interdisciplinary career course is not valuable. Students who are undecided regarding a major field of study might find such a course invaluable. Such a course should be designed to attract freshmen and sophomores and focus on self-awareness of values, interests, and abilities, an awareness and knowledge of the world of work, goal setting and decision making, and a generalizable process for career planning, as suggested by Heppner and Krause (1979).

Results from this investigation indicate that a particular need exists to address the areas of career decision making and knowledge of the world of work in some manner other than that which may have been used for CED 210 participants. The average decrease in standard scores from pretest to posttest for these two components of career maturity demands consideration. Course developers should present one or two uncomplicated decision-making processes for student consideration, then provide time and opportunities for students to implement the decision making process of their choice. World of work knowledge should be presented in an orderly manner, allowing time for discussion and assimilation. Instructors must assume the responsibility for summary and closure of these discussions to aid in avoiding student confusion and uncertainty.

Developers of career courses should also acknowledge the innate developmental differences among traditional-age undergraduates. Freshmen are unlikely to demonstrate as high a level as seniors on any measure of development. Consequently, career course developers may consider grouping students by class status, i.e., freshmen, sophomores, juniors, and seniors, creating separate sections for each, with specific goals, objectives, and activities designed with each group in mind.

Considering in total the implications of these results, an ideal career course should evolve from a foundation of well-developed goals and objectives. Course developers should ask themselves certain questions: Do participants represent a homogeneous or heterogeneous population in terms of academic major or class status (i.e., freshman, sophomore, etc.)? Will participants' goals be considered in developing the course? Will the class be designed to assist and encourage participants in the areas of career planning, career exploration, and career decision making? Will participants learn job seeking and interviewing skills? Will participants be taught habits that promote success in the workplace? Answers to these questions must be reflected in course content.

Students' backgrounds and experiences, as well as academic majors and class status, should be considered in course development. If course enrollees are from a homogenous population, course content should reflect the common characteristics shared by participants, focusing on issues pertinent to the population. Alternately, course designers should develop a broader content focus for heterogenous populations, insuring that the content reflects general career concerns or addresses a great variety of specific issues.

Student goals should be considered in designing and developing course content. Many students enroll in career courses having certain expectations in mind. If these have not been addressed by course goals and objectives, modifications in course content must be made to accommodate these expectations.

If career planning, exploration, and decision making are among the course goals, then course content must be designed to encourage participant introspection. The use of tools for personality assessment, values clarification, and personal interests is indicated. In addition, various career exploration means and methods should be explored. A variety of career decision making processes should be presented, with ample time and opportunities

offered for participants to evaluate alternatives and select the process with which they are most comfortable.

Job seeking and interviewing skills are components of work world knowledge. As considerations for course content planning, they relate to participant characteristics, experiences, and needs. General skill acquisition should be a goal. However, skill requirements in these areas vary somewhat across vocational fields. Course developers must decide the best means for accomplishing this training with the population at-hand.

Likewise, there are general work habits which promote success in the workplace, but there are also some that are occupation specific. For example, some occupations encourage competition among employees and reward aggression, while others promote and reward employees who are "team players." Developing an efficient and effective means of examining and evaluating these habits is a challenge that must be met in course content design.

A course cannot be truly comprehensive. Course developers must be aware of the developmental needs of the students as well as time constraints imposed by academic structure, planning and designing course content accordingly. They must decide which topics and issues should be emphasized and which ones should be neglected or simply afforded a "casual glance."

Implications for Career Course Instructor Training

Additional considerations beyond discussion summary and closure exist regarding the training of instructors for career courses. First and foremost is the issue of course goals and objectives. For example, a 1959 study completed by Hewer yielded inconclusive results due to a disagreement among counselors regarding an outcome measure.

Instructors must establish clearly defined goals for students, then develop course objectives

designed to assist students in achieving these goals as well the means to determine if and when these objectives are met. In a quarter- or semester-long course, there are many opportunities to depart from established objectives. If this occurs, valuable class time may be spent addressing issues that are not course related. In one scenario, this departure may create confusion among students regarding pertinent course-related issues. In a “worst-case” scenario, the measure of objective achievement may falsely reflect the actual progress of the students.

The consideration of instructor-established career course goals and objectives reveals a second related issue. Students in career courses have their own goals in mind when enrolling and it is unlikely that these goals will be the same for all students. Thus, the instructor is charged with the task of accommodating the students' goals within the structure of the course, requiring a certain flexibility and skill so this is accomplished without detriment to others or to the established course goals.

It is also safe to assume that students will enter the course possessing different career maturity levels. It then becomes the instructors' responsibility to accommodate these differences, offering activities, information, and assignments to positively affect career maturity change among students so that all may nearly equally benefit from course participation.

Another compelling issue is instructor competence in facilitating a career course. Neither an advanced degree nor many life experiences singularly qualifies an individual to facilitate a career course. Career course instructors must possess an understanding of career maturity and a functional mastery of the requisite skills related to career maturity, including, but not limited to, decision making, information gathering and organizing, and values clarifying. Beyond these, the instructor should be capable of conveying this

understanding to others as well as assisting others to acquire and master these skills for themselves.

Instructors must be appropriately trained if career courses are to be effective interventions for undergraduates. Training in career counseling and career development is not sufficient. Instructors must also have the teaching skills to create an environment which encourages and promotes successful goal achievement. Career course instructors must be capable of developing measurable objectives through which course goals are achieved, and then be capable of evaluating students' accomplishment of these objectives. Instructors also must master teaching methods other than lecture and test so that students' diverse learning styles can be addressed. Career courses should afford students opportunities to develop new skills as well as to acquire information. Instructional methods should address this skill development, providing students a "safe" environment to practice newly acquired skills, particularly in the areas of decision making and interviewing. Instructors themselves must continue to learn. The work world changes daily and students want current information. Instructors should visit campus career centers, interview employers from a variety of occupational fields, and read current publications regarding the work world and the job market. Finally, they should be willing to self-disclose. Students want to know what "works" and what does not work, not simply what some textbook author promotes as the ideal resume or the "sure-fire" interview technique.

Limitations

Design.

Some limitations are inherent in a quasi-experimental design, most notably the inability to randomly assign individuals to the various groups. Ideally, a pure experimental

design should provide more reliable results. If plausible as an option, undergraduates wishing to enroll in a career course would be randomly assigned to one of the three groups, with those students not assigned to a CED 210 group being guaranteed enrollment in CED 210 during the succeeding enrollment period. This would aid in controlling for factors such as motivation and desire of the participants.

Additional participants would also lend strength to the generalizability of the results. All available, qualified students were recruited for participation in this investigation. However, conducting the study with other groups during succeeding semesters until a "point of diminishing returns" was achieved would provide greater power for the investigation.

A third limitation was the absence of control over the instructor effect. While the three CED 210 instructors for this investigation utilized the same syllabus, planned together, and generally addressed career related issues simultaneously, there was no true control for instructor effect. In particular, the instructor-student relationship is an extremely challenging factor to control. Instructor-student rapport, instructor ability, and instructor motivation are all factors that may influence the outcome of investigations similar to this. Means of measuring and controlling these factors should be employed as additional support to the generalizability of the results.

Methodology.

The pretest and posttest administrations of the CDI both occurred over a ten-day period. Had it been possible for all participants to complete each administration in one sitting, the investigation would have been more standardized. In this investigation, some participants in T₂ were exposed to other career development measurement instruments before completing the CDI. Although administered during a scheduled class meeting,

some participants arrived late and completed the instrument hurriedly in an attempt to exit class on-schedule.

T₁ experienced great mortality in this investigation. Fifty-nine students were assigned to this group, but only 20 utilized SIGI+ as instructed. Due to an equipment malfunction, the program was unusable for nearly three of the six weeks when appointments were scheduled, requiring these participants to reschedule and make additional visits to the area where the equipment was housed. Many participants failed to reschedule or to meet their scheduled appointments. While those who failed to meet the participation requirements for this group were "transferred" to C₁, the *n* for T₁ was considerably reduced. In addition, some unaccounted for motivational component which led these participants to volunteer as SIGI+ users may have affected the outcome. Placing them in C₁ may have adversely affected the no-treatment effect that a control typically brings to any investigation. Efforts to maintain equipment functionality and to make this "treatment" more accessible would improve the likelihood of participants meeting the expectations for T₁.

Another methodological limitation relates to the mortality among all participants. The instructors for the classes from which participants for all three groups were drawn did not communicate clearly-defined attendance expectations to class members. While many students attended regularly early in the semester, other responsibilities, projects, and tasks apparently took precedence over attendance in an elective class. At the time of the posttest administration, class attendance in these classes was at 50% to 70% of actual enrollment. Besides accounting for a low *n*, this poor attendance may have adversely affected those students who were participants in T₂, limiting the effects of participating in a career course.

Establishing an attendance policy that permits a limited number of absences could enhance the n and possibly influence the results of the investigation.

A fourth limitation in methodology concerns the critical incident logs maintained by students. As the investigation progressed, CED 210 participants tended to maintain these logs on a less regular basis, if at all. Encouraging instructors to allow five minutes at the close of each class to record log entries could enhance the collection of this qualitative data.

All data gathered for this investigation was derived via self-report measures. Participants may have or may have not been honest and self-disclosing when responding to CDI and/or questionnaire items or when completing critical incident logs. In addition, responses of some participants may have been recorded in haste in an effort to exit the classroom as soon as possible.

Implications for Future Research

The majority of the suggestions for future research relate to reducing or eliminating those factors that contributed to the limitations for this investigation. A replication of this study with the following changes is suggested:

1. Employ a pure experimental design by randomly assigning participants to each of the three groups. Guarantee enrollment in a future CED 210 course to those assigned to the Control and SIGI+ groups.
2. Employ some measure of instructor effectiveness and instructor-student relationship and include this measure as a factor in the data analyses.
3. Conduct each administration with all participants on the same day.
4. Ask CED 210 instructors to implement an enforceable attendance policy that encourages daily attendance.

5. Ask CED 210 instructors to set aside five minutes at the close of each class for students to record entries in critical incidents logs.

Results from this investigation suggest the need for continued research in this area, particularly regarding career decision making skills and world of work knowledge. The development of new measures of career maturity may improve the utility of future investigations. The CDI was initially published in 1982 and has yet to be revised to reflect changing trends in student and worker attitudes and the evolving world of work. In addition, the quantitative data, in conjunction with the qualitative information from the critical incidents logs, may serve as the framework for a standardized career course curriculum.

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APPENDIX A

CED 210 CAREER/LIFE PLANNING

Department of Counseling & Educational Development

Instructors

(Omitted to maintain confidentiality)

Course Objectives

- 1) To provide opportunities to understand individual personality with regard to lifecareer interests, concerns, values, preferences, development, and role salience.
- 2) To provide opportunities to employ self-understanding to purposefully direct efforts in developing a satisfying and productive lifecareer.
- 3) To provide instruction in decision-making and goal setting methods.
- 4) To provide instruction in methods for conducting an effective job search.
- 5) To provide instruction in the social aspects of the world of work, directed at personal and social skill building to enhance personal and interactional effectiveness.

Assignments and Grading Criteria

<u>Assignment</u>	<u>Point Potential</u>	<u>Due Date</u>
C-DAC Career Assessment Battery	5	TBA
Midterm Exam	20	Th. 9/29
Professional Development Project (45 points total)		
Project Proposal	5	Tu. 9/27
Research Report	10	Tu. 10/13
Resume and Cover Letter	10	Tu. 10/25
Financial Assessment and Strategy	5	Tu. 11/8
Personal Development Project	5	Th. 11/10
Interview and Report	10	Th. 11/17
Presentations	10	11/17 to 12/1
Final Exam	20	Dec. ____
TOTAL	100	

(Grades will be assigned using the criteria published in the UNCG Policies for Students.)

Notes

C-DAC Career Assessment Battery

This is a battery of seven psychometric instruments which are designed to measure career values, interests, stage thinking, role importance, development, personality preferences, and overall wellness in major life dimensions. A testing fee will be assessed to cover the costs associated with these instruments. Points will be awarded for the prompt return of the instruments on the due dates as indicated on the class schedule.

Midterm Exam

The midterm will be an in-class, objective test that will cover lectures and assigned readings.

Professional Development Project

The PDP is a cornerstone for this course, and thus bears the greatest grading criteria weight. Consequently, the execution of this project must be consistent with your overall developmental needs and expectations.

Project Proposal/Plan: In order to assist you in achieving key career development components, the professional development project has been designed to give you the maximum flexibility within the framework of the course requirements. The proposal will outline and summarize your plan for achieving the components. Additionally, you may contract for your grade for this project, consistent with the grading criteria published in the UNCG Policies for Students. The Proposal will give the following specific information: Statement of intent consistent with career development goals; type and quality of work necessary to fulfill each component; resources to be employed; and potential obstacles (both personal/intrinsic and logistical/extrinsic).

Research (Report). A good job search involves research...of careers, potential employing organizations, and industries. This formal two-plus (2+) page report will summarize your findings from adequate reference materials necessary to initiate a career search or conduct a successful interview. Specifically, the report may take the form of (1) research into a specific chosen job or career so that you may have the necessary information to continue this job/career path (or eliminate it from consideration), or (2) information about a specific employer, organization, or industry so that you can conduct an intelligent interview or marketing campaign. *The instructor will provide you with a report format to complete.*

Resume and Cover Letter. You may (or may not) have a resume currently available. In either case, you will need to develop or polish one in consideration of the material provided on this topic. A cover letter must be written to a current real or potential employer or networking contact.

Financial Assessment and Strategy. This will take the form of (1) a personal financial audit (using a prospectus for entry-level salary), and (2) a strategy for achieving 5-year, 10-year, and retirement financial goals. *The instructor will provide you with a report format to complete.*

Interview (Report). Interviewing is an essential skill, thus this is a major requirement of this course. You must conduct either an informational or a job interview, then provide a one to three (1-3) page report of your findings and a critique of your performance with emphasis on what you can do better next time. You may not conduct this interview with friends: it must be with someone that you do not know. *The instructor will provide you with a report format to complete.*

Personal Development Project. This component is directed at increasing your personal abilities to be effective in your lifecareer in leadership and followership roles. Required readings will be taken from Steven Covey's Seven Habits of Highly Effective People. *The instructor will provide you with a report format to complete.*

Presentations

In groups of three, you will prepare and present a twenty minute oral presentation on a relevant career topic. A list of prospective topics will be provided from which to choose. You will be evaluated by the instructor and by your fellow students, but your audience will be your peers. At a minimum, a one (1) page handout will be required that summarizes your presentation content and reference citations.

Final Examination

An objective final examination will review key points in the course lectures, discussions, presentations, and readings.

CED 210 Career/Life Planning

Fall Semester 1994 Syllabus

Instructors

(Omitted to maintain confidentiality)

Day/Date	Focus/Topic
Tu 8/23	Course Orientation and overview: Theories of Career/Life Planning.
Th 8/25	Career Development for the 21st Century. Chapter 5 to page 136. \$30 test fee due.
Tu 8/30	<u>SII & Salience</u>
Th 9/1	<u>CDI & Values.</u>
Tu 9/6	Decision-Making: Values & Beliefs. Begin <u>ACCI</u>
Th 9/8	Goal Setting. Begin <u>MBTI</u> .
Tu 9/13	Purpose of Life: Making meaning in a complex world.
Th 9/15	Critical Success Factors for Careers: Beyond 2000.
Tu 9/20	Stereotypes, Work Roles, and Relationships. Chapter 4.
Th 9/22	Interest and Skills Assessment. Chapter 2.
Tu 9/27	Personality Preferences: Fitting into a Work Environment. Project Proposal due.
Th 9/29	MIDTERM Assessment.
Tu 10/4	The Great Job Safari: Tricks (and Pitfalls) to Catch the Tiger by its Tail: Chapter 6 and through to page 184.

- Th 10/6 Tangible Marketing: Resumes, Cover Letters, and other Advertisements.
Chapter 7 (page 184 to 198).
- Tu 10/11 Knock-Out Resumes, etc.
- Th 10/13 "Is your Net Working?" The best way to gain access and information...
- Tu 10/18 **FALL BREAK**
- Th 10/20 Where Do You Work?: Assessing Organizational Culture.
- Tu 10/25 The Art and Science of Job Interviews. Chapter 7 (Page 199 to 211).
- Th 10/27 The Two-Minute Drill: Making a Great First Impression.
- Tu 11/1 Conflict Resolution
- Th 11/3 Financial Planning: Making dreams into reality.
- Tu 11/8 Leadership Styles and Substance.
- Th 11/10 Special Issues TBA.
- Tu 11/15 Stress Management
- Th 11/17 **PRESENTATIONS.**
- Tu 11/22 Guest Speaker
- Th 11/24 **Thanksgiving Break.**
- Tu 11/29 **PRESENTATIONS. Professional Project due.**
- Th 12/1 **PRESENTATIONS.**
- Tu 12/6 Wrap-Up Loose Ends and Course Evaluations

FINAL EXAM Day _____. Date _____.

APPENDIX B

Career Development Questionnaire

Please respond to the following requests and questions to the best of your ability. Mark only response for each item.

1. **Year:** _____
 _____ Freshman
 _____ Sophomore
 _____ Junior
 _____ Senior
 _____ Graduate Student
 _____ Special Student
2. **Ethnicity:** _____
 _____ African-American
 _____ Asian
 _____ Hispanic
 _____ Native American
 _____ White
 _____ Other
3. **Gender:** _____
 _____ Female
 _____ Male
4. **Age:** _____
5. **Approximate GPA:** _____
6. **Major:** _____
 (Write "Undeclared" if you have not chosen a major.)
7. **Occupation:** _____
 (If you are currently employed, what is your occupation or job?)
8. **Social Security Number:** _____ - _____ - _____
 (Your responses will be held in strictest confidence. Including your Social Security Number permits the researcher to link your responses on this questionnaire to your responses on the *Career Development Inventory*.)

Item 9 is for Life/Career Planning Students Only

9. **For what reason(s) did you enroll in CED 210?**
 (Check as many as apply. Please place a "1" beside the primary reason for enrolling.)
- | | |
|------------------------------------|---------------------------------|
| _____ Choose a major | _____ Needed credit |
| _____ Find a job | _____ Easy "A" |
| _____ Job search skills | _____ Recommended by friend |
| _____ Learn about myself | _____ Recommended by instructor |
| _____ Recommended by Career Center | _____ Friend enrolled |
| _____ Others: (Please list) | _____ Others: (Please list) |
| _____ | _____ |
| _____ | _____ |

Thank you for your cooperation and assistance. The researcher is a student, like yourself, and is conducting this investigation as a graduation requirement for the Ph.D. in Counselor Education.

Fall 1994

APPENDIX C

Posttest Career Development Questionnaire

Please respond to the following requests and questions to the best of your ability.

1. Did you utilize **SIGI+** (computer-assisted career guidance system) in the Career Center *during this semester*? ☐ Yes ☐ No
 2. In which of the following career development-related activities have you participated *during this semester*?

a. <input type="checkbox"/> Visited UNCG Career Services b. <input type="checkbox"/> Individual Career Counseling c. <input type="checkbox"/> Group Career Counseling d. <input type="checkbox"/> Attended a Career Services workshop (Indicate which workshop(s)) <input type="checkbox"/> Resume writing <input type="checkbox"/> Interviewing <input type="checkbox"/> Cover letter writing <input type="checkbox"/> Landing an internship <input type="checkbox"/> Other (Please describe) _____ _____	e. <input type="checkbox"/> Informational interview with prospective employer f. <input type="checkbox"/> Spoke with advisor regarding major course of study g. <input type="checkbox"/> Changed major course of study h. <input type="checkbox"/> Read book or article about careers, jobs, career field, etc. i. <input type="checkbox"/> Other (Please describe activity) _____ _____ _____ _____
---	---
 - 2*. Approximately how many **TOTAL** hours did you spend in career development-related activities this semester? _____ hours
 3. **Social Security Number:** ____ - ____ - ____
 (Your responses will be held in strictest confidence. Including your Social Security Number permits the researcher to link your responses on this questionnaire to your responses on the *Career Development Inventory*.)

- Please provide the following information **ONLY** if you desire to have the results of your *Career Development Inventory* explained to you and you wish to have the opportunity to discuss these results with a career counselor or counselor-in-training.
4. **Name:** _____
 5. **Telephone Number:** _____
 6. **Best morning or afternoon time to reach you:** _____
 7. **Best evening time to reach you:** _____

APPENDIX D

Informed Consent Form Career Development Research Investigation

Purpose:

The purpose of this investigation is to examine the impact of a life/career planning class on the career development of undergraduate students.

Participant Requirements:

As a participant, you will complete the *Career Development Inventory (CDI)* and a *Career Development Questionnaire* during the first two weeks of the semester and again two weeks prior to the end of the semester.

Benefits

Upon completion of this investigation, all participants will receive or will have received a group interpretation of the *CDI*. In addition, these same participants will have received or will be offered an opportunity to receive an individual interpretation of their *CDI* scores.

All participants who complete all requirements for participation will be entered in a raffle for a **\$50.00 United States Savings Bond**.

Confidentiality:

All responses will be held in strictest confidence by the researcher. Your anonymity will be maintained in all reports derived from this investigation by identifying each participant by Social Security Number only. Your responses will be shared with a career counselor and/or counselor-in-training upon your written request for an inventory interpretation and career counseling after the conclusion of the investigation.

Statement of Participation:

I, _____, agree to participate in this investigation by completing the requirements of participation. I understand that all responses and information will be held in strictest confidence by the investigator. In addition, I also understand that I may withdraw from this study at any time without incurring any penalty related to the course in which I am currently enrolled. I also understand that an inventory interpretation and/or career counseling will be available to me at the conclusion of this investigation upon my written request.

 Signature

 Date

APPENDIX E

Career Development Learning Log - CED 210 SSN: _____ - _____ - _____

Please complete this log on a *daily basis*. The specific learning experience need not be "earth shaking" nor of major importance, but of *some significance to you personally*. A brief description of the topic or subject and a brief reason for its significance are sufficient.

The researcher or someone designated by him (other than the instructor) will collect this log during the first class meeting after the log expires (10/4; 11/1; 11/22). This will insure that the information supplied is not viewed by the instructor, thus maintaining confidentiality and avoiding any undue influence on the instructor's teaching style or emphasis on a particular topic.

Your participation and cooperation is deeply appreciated.

September

Day	Date	Did a significant learning occur today? (Yes/No)	If so, what was the topic or subject?	Why was it significant?
Example		Yes	Personal Values	I learned some new things about myself
Example		No	-----	-----
T	9/6			
Th	9/8			
T	9/13			
Th	9/15			
T	9/20			
Th	9/22			
T	9/27			
Th	9/29			

Career Development Learning Log - CED 210 SSN: _____ - _____ - _____

Please complete this log on a *daily basis*. The specific learning experience need not be "earth shaking" nor of major importance, but of *some significance to you personally*. A brief description of the topic or subject and a brief reason for its significance are sufficient.

The researcher or someone designated by him (other than the instructor) will collect this log during the first class meeting after the log expires (10/4; 11/1; 11/22). This will insure that the information supplied is not viewed by the instructor, thus maintaining confidentiality and avoiding any undue influence on the instructor's teaching style or emphasis on a particular topic.

Your participation and cooperation is deeply appreciated.

October

Day	Date	Did a significant learning occur today? (Yes/No)	If so, what was the topic or subject?	Why was it significant?
Example		Yes	Personal Values	I learned some new things about myself
Example		No	-----	-----
T	10/4			
Th	10/6			
T	10/11			
Th	10/13			
T	10/18	Fall Break	Fall Break	Fall Break
Th	10/20			
T	10/25			
Th	10/27			

Career Development Learning Log - CED 210 SSN: _____ - _____ - _____

Please complete this log on a *daily basis*. The specific learning experience need not be "earth shaking" nor of major importance, but of *some significance to you personally*. A brief description of the topic or subject and a brief reason for its significance are sufficient.

The researcher or someone designated by him (other than the instructor) will collect this log during the first class meeting after the log expires (10/4; 11/1; 11/22). This will insure that the information supplied is not viewed by the instructor, thus maintaining confidentiality and avoiding any undue influence on the instructor's teaching style or emphasis on a particular topic.

Your participation and cooperation is deeply appreciated.

November

Day	Date	Did a significant learning occur today? (Yes/No)	If so, what was the topic or subject?	Why was it significant?
Example		Yes	Personal Values	I learned some new things about myself
Example		No	-----	-----
T	11/1			
Th	11/3			
T	11/8			
Th	11/10			
T	11/15			
Th	11/17			
T	11/22			
Th	11/24	Thanksgiving	Thanksgiving	Thanksgiving