1994

Career Decision Certainty And College Students' Psychological And Social Development

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Order Number 9506190

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CAREER DECISION CERTAINTY AND COLLEGE STUDENTS' PSYCHOLOGICAL AND SOCIAL DEVELOPMENT

A Dissertation

Presented to

The School of Graduate Studies

Department of Counseling

Indiana State University

Terre Haute, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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by

Michael D. Zlatos

May 1994

APPROVAL SHEET

The dissertation of Michael D. Zlatos, Contribution to the School of Graduate Studies, Indiana State University, Series III, Number 615, under the title Career Decision Certainty and College Students' Psychological and Social Development is approved as partial fulfillment of the requirements for the Doctor of Philosophy degree.

4-21-94
Date

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For the School of Graduate Studies

ABSTRACT

This study was designed to determine the nature of the relationship between the certainty of career decision, as measured by the Certainty scale of the Career Decision Scale, gender, and three of Chickering's seven vectors of psychosocial development: Clarifying Purpose, Freeing Interpersonal Relationships, and Becoming Autonomous, as measured by the PUR, MIR, and AA tasks of the Student Developmental Task and Lifestyle Inventory (SDTLI).

Participants were 135 college freshmen and sophomores recruited from general education courses who were classified as undecided, tentatively decided, or decided based on groupings of Certainty scale scores.

Four, 3 X 2, MANOVAs were conducted for each null hypothesis to determine whether differences could be observed in four (SDTLI) dependent variable clusters as a function of career-decidedness level, gender, and career-decidedness level and gender.

The findings of this study are: (a) college freshmen and sophomores classified as undecided, tentatively decided, and decided were differentiated on measures of psychological but not social development; (b) males and females were differentiated on measures of psychological but not social development; and (c) college freshmen and sophomores classified as undecided, tentatively decided, and decided were not differentiated by gender. Implications are discussed.

ACKNOWLEDGEMENTS

This dissertation is dedicated in loving memory of my father, William F. Zlatos, Sr., and my mother, Hope Zlatos.

The completion of a dissertation is an extensive undertaking which requires the assistance of many individuals; therefore, I wish to acknowledge those individuals who have contributed to the completion of this dissertation.

I would like to thank the members of my committee: Dr. Richard Antes, Dr. Will Barratt, Dr. Lawrence Beymer, Dr. John Carter, and Dr. John Jessell for their assistance and encouragement, not only on the dissertation, but also throughout my doctoral studies at Indiana State University. I would also like to thank Milton Firestone of the ISU computer center for his devotion to the laborious task of the data analysis.

I would like to extend a special thanks to my mentor and colleague of 15 years, Dr. George Jones, Professor of Higher Education at Ball State University, for his guidance and support throughout the years.

I would like to express my sincere appreciation and gratitude to Dr. Will Barratt, my committee chairperson, dissertation director, and mentor. With his guidance and support, I felt encouraged, respected, and challenged. I hope that Dr. Barratt's dedication to the highest standards of professionalism will live on through my work as a counselor and as an educator.

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Chapter 1

INTRODUCTION

Background of the Problem

Human development has the potential to be an important construct for research in career decision because development may serve as a mediating factor in career decision certainty, which in turn may facilitate the choice of a major and a career. The focus of this study was on the examination of the relationship of career decision certainty to student psychosocial development, a relationship not known to have been previously examined (Gedner, 1989).

Cook (1980) explained that "human development" describes changes between birth and death that individuals encounter, both within themselves and their environment, which are precipitated by social, emotional, and physiological factors. Central to theories of human development and student development are the concepts of developmental stages and tasks. Miller and Prince (1976) defined a developmental stage as "a period of time when the individual is establishing new and varied behavior patterns and responses which differ from those in other periods" (Cook, 1980, p. 13). Mines (1982) defined developmental tasks as

"culturally specific events that occur at approximately the same time in the life of an age cohort" (p. 83). Hebert (1990) described these culturally specific events as issues, concerns, or preoccupations a person resolves during a particular stage.

Cook (1980) noted that the majority of developmental theorists (Blocher, 1974; Erikson, 1959; Havighurst, 1953; Piaget, 1952; Tryon & Lilienthal, 1950) were in agreement that human development refers to the completion of certain developmental tasks or environmental associations, associated with a corresponding developmental stage, which enables the individual to progress to the next developmental stage, the continual and cumulative progression of which occurs over a lifetime. Blocher (1974) reported that the usefulness of a developmental or stage approach lies in the concept that cultural influences and maturational changes produce particular kinds of problems, crises, and behavior patterns at certain times in the lives of human beings.

A prominent theorist who utilized a developmental approach toward understanding the maturation process of college students is Arthur Chickering. Chickering (1969), in Education and Identity, presented a theory of the psychological and social development of college students. The popularity of Chickering's theory is derived from: (a) a theoretical congruence with the Student Personnel Point of View, the 1949 mission statement of the field (Widick, Parker, & Knefelkamp, 1978); (b) its simplicity as a theory,

relevance to students, and applicability within student affairs and higher education; (c) a foundation upon experience (Itzkowitz, 1984); and (d) support by research conducted at Goddard College and other post secondary institutions (Itzkowitz, 1984).

Chickering's (1969) theory focused public attention on the specific needs and concerns of college students. It resulted in stimulating institutional interest in directing programmatic, counseling, and research efforts toward endeavors which identify students' needs and problem areas and which facilitate students to address and resolve developmental issues.

Chickering's (1969) theory focused attention to and interest in developmental issues of college students by positing that college students, between the ages of 17 and 25, undergo a distinct and separate psychosocial stage called "young adulthood." This stage is between Erikson's (1963) stages of "adolescence" and "adulthood," during which students confront and resolve developmental crises, tasks, and issues among seven vectors of development or areas of concern. Specifically, Chickering (1969) asserted that the administration of student affairs should be involved in making, executing, and promoting administrative, programmatic, and staff decisions and actions so as to advance students' development along seven vectors: (a) Achieving Competence, (b) Managing Emotions, (c) Becoming Autonomous, (d) Establishing Identity, (e) Freeing Interpersonal

Relationships, (f) Clarifing Purpose and (g) Developing Integrity (See Appendix A for detailed descriptions of each vector).

In contrast to other developmental theorists, Chickering (1969) chose to use the term "vector," which connotes magnitude and direction, in place of the term "task." Rodgers and Widick (1980) noted that each vector consists of a set of skills and attitudes to be acquired, a personal concern, and a set of results which indicate maturity at this psychosocial stage of development (Itzkowitz, 1984).

To develop successfully, according to Chickering, college students must master each of the seven vectors in sequential fashion. Chickering (1969) noted that the direction of progression "may be expressed more appropriately by a spiral or steps than a straight line" (p. 1). Itzkowitz (1984) noted that an individual will deal, in step fashion, with vectors one to three before vector four and, after successfully completing vector four (identity), the student will deal with vectors five through seven (Hurst, 1978; Rodgers & Widick, 1980).

A key concept central to Chickering's theory of college students' psychosocial development is the formation and development of a "self concept" or "identity" (vector four). Chickering (1969) acknowledged, "At one level of generalization, all the developmental vectors could be classified under the general heading 'identity formation'" (p. 78).

Prior to developing a sense of individual identity,

however, Gedner (1989) reported that college students are faced with decisions they may not be equipped to make and situations (e.g., confrontations, challenges, expectations, demands, and/or pressure) with which they may not be equipped to cope. For example, Chickering (1969) stated that, upon graduation, high school students are expected to try to become an independent adult. Chickering noted that, to become independent adults, adolescents must effect the process of "leaving home" or "disengaging from parents," which occurs during the first few weeks of college when freshmen "leave home" and become "instrumentally independent." Chickering (1969) cautioned that the instrumental independence of college freshmen may be likened to a "hog on ice." Free of accustomed restraints or outside pressures, freshmen exhibit random activity or rigid adherence to behaviors appropriate to former situations, considerable instability, a lack of coordination, and little observable progress in any direction.

As a result of environmental constraints and societal pressures, four of Chickering's seven vectors become most relevant for college freshmen and sophomores: (a) Becoming Autonomous, (b) Managing Emotions, (c) Freeing Interpersonal Relationships, and (d) Clarifying Purpose. Thus, in adjusting to the transitional process of "leaving home" and successfully adapting to the academic, personal, and social demands of college life, freshmen and sophomore college students must be able to develop a sense of autonomy,

discipline, and purpose as well as to be able to establish and maintain supportive relationships, the successful completion of which leads to identity formation.

Purpose of the Study

The purpose of this study was threefold. The first purpose was to determine the source and nature of the relationship of the certainty of career decision, via level of decidedness, to students' psychological and/or social development, via three of Chickering's seven vectors of development: (a) Clarifying Purpose, (b) Freeing Interpersonal Relations, and (c) Becoming Autonomous, using the Establishing and Clarifying Purpose (PUR) Task, the Developing Mature Interpersonal Relationships (MIR) Task, and the Academic Autonomy Task of the Student Developmental Task and Lifestyle Inventory (SDTLI) (Winston, Miller, & Prince, 1987) as measures of these vectors. In this study, a comparison was made of the SDTLI task and subtask performance scores of college students classified into one of the three decidedness levels of undecided, tentatively decided, or decided. The second purpose was to determine the source and nature of the relationship of gender to students' psychological and/or social development. The third purpose was to determine the source and nature of the relationship of the certainty of career decision and gender to students' psychological and/or social development.

Research Questions

Answers to the following research questions were sought:

1. Do college freshmen and sophomores classified as undecided, tentatively decided, or decided score differently on measures of psychological and/or social development?

2. Do male and female college freshmen and sophomores score differently on measures of psychological and/or social development?

3. Do male and female college freshmen and sophomores classified as undecided, tentatively decided, or decided score differently on measures of psychological and/or social development?

Statement of the Problem

Holland and Holland (1977) reviewed the literature in career decision and reported it to have been characterized by conflicting, negative, or negligible findings. Taylor (1982) reviewed the literature in career decision and concluded that the nonsignificant or conflicting and thus inconclusive findings might have resulted from assumptions made by researchers that the causes of indecision are similar for all undecided students and that the characteristics which lead to career decision are similar for all decided individuals. As a result of these assumptions, Taylor purported that both undecided and decided individuals were assumed to represent distinctly separate populations which would supposedly be homogeneous on certain key explanatory

dimensions. She asserted that previous researchers assumed that the categorical dimension of declared versus undeclared major status would divide students into two separate and distinct groups on which differentiating factors (e.g., traits and/or characteristics) could be determined. Taylor (1982) concluded that research in career decision may have failed to reveal factors which differentiate the two groups (decided vs. undecided), perhaps as a result of using too simplistic a definition and measure of the construct (e.g., declared vs. undeclared major status).

Gedner (1989) reported that in previous research psychosocial development and career decision has been treated as independent constructs. Specifically, Gedner noted that career decision research has overlooked the potential of psychosocial development to differentiate factors among undecided, tentatively decided, and decided groups. As a result, Gedner proposed that the constructs of undecidedness and decidedness be approached from a developmental perspective. The problem investigated in this study, therefore, was the relationship of career decision certainty to students' psychological and social development, a relationship not known to have been previously examined (Gedner, 1989).

Significance of the Problem

Gordon (1984) noted reasons why addressing the needs of the undecided are important despite the commonalities that exist between undecided and decided students.

1. Undecided students constitute a large proportion of students entering college; conservative estimates range from 20 to 50 percent (Astin, 1977; Berger, 1967; Crites, 1969).

2. Undecided students have been identified as attrition prone (Astin, 1975; Beal & Noel, 1980). Since lack of a career goal is an important reason for not pursuing a college degree, this group may eventually drop out of college if offered no help.

Gedner (1989) pointed out that upon arrival at college, students are faced with a serious decision they may be ill-equipped to make. Gedner explained that, upon college entrance, students are expected to choose and declare an academic major which will serve as their primary intellectual focus for the next four years and be the foundation upon which they will be expected to build a future career. According to Gedner, however, many students who have chosen academic majors, particularly freshmen and sophomores, may be developmentally undecided because their choice of a major does not reflect a well-developed sense of purpose or an autonomous commitment to their proposed academic field of study. For many college freshmen and sophomores, Gedner concluded that choosing a major may serve as a mere paper distinction rather than as a sign of more complex development.

Positive findings from the current study would provide empirical evidence with which to link the completion of certain developmental tasks at the college level to being

decided with a major and a career. Knowledge of completion of certain psychosocial developmental tasks could then be used to clarify distinctions among undecided, tentative, and decided students (Gordon, 1984). Counseling interventions could be designed to help undecided and tentative students make career decisions which serve not just as mere paper distinctions but as more complex signs of development.

Importance of the Study

Gedner's (1989) dissertation research substantiated the need and methodology for the investigation of the relationship of career decision certainty to students' psychological and social development by examining the predictive ability of the tasks, subtasks, and scales of the SDTLI to correctly classify students into three criterion categories of decidedness. Gedner (1989) hypothesized: "Decided students will not be differentiated from undecided students on any of the developmental scales [that is, tasks, subtasks, or scales] in the Student Development [sic] Task and Lifestyle Inventory" (p. 21).

Gedner (1989) reported two findings which substantiated the need for the current investigation. First, decided and undecided students' scores were significantly different on certain tasks and subtasks of the SDTLI. Second, although SDTLI tasks and subtasks correctly identified the decidedness level of 53 percent of the students, Gedner (1989) concluded: "Self-reported level of decidedness is not a reliable indicator of the degree to which a student has

completed important developmental tasks" (p. 128). To establish categories for the discriminant function analysis, students completed a five-point, self-made, self-rating scale which automatically placed them into one of the three criterion groups (undecided, tentative, or decided). Gedner noted that this scale had not been validated and must be interpreted according to the face validity of each item. As a result, the findings from Gedner's study suggested further research employing different methodology.

The present investigation made several unique contributions in terms of its sample, instruments, procedures, and methods of analysis.

1. A reliable and valid measure should be used to assess career decision certainty or the certainty of a student's choice about an academic major and career. The Certainty scale of the Career Decision Scale (CDS) (3rd rev.) (Osipow, Carney, Winer, Yanico, & Koschier, 1976) was used in place of the declared vs. undeclared major status of the individual and in place of other self-made, self-rating scales of career decision certainty. An attempt was made to compensate for the inability of such measures to classify students into decided and undecided groups that reveal differentiating factors and thereby prevent collection of data which might produce negative, negligible, or conflicting findings.

2. A reliable and valid measure should be used to assess the vectors of Chickering's theory which are most

essential to advance college students' level of psychosocial development of: (a) Clarifying Purpose, (b) Freeing Interpersonal Relationships, (c) Becoming Autonomous, and (d) Managing Emotions. The PUR, MIR, and AA tasks of the Student Developmental Task and Lifestyle Inventory (SDTLI) (Winston, Miller, & Prince, 1987) were used to measure the first three of Chickering's vectors (above) and were used in place of the corresponding tasks of the Student Developmental Task Inventory (2nd ed.) (SDTI-2) (Winston, Miller, & Prince, 1979) in an attempt to compensate for weaknesses in the task measures of the SDTI-2 (See Winston, 1990, pp. 108 - 109).

3. College freshmen and sophomores were sampled in place of summer orientation students (who more closely resemble high school than college students) and in place of college juniors and seniors (who are known to score more highly on measures of career decision certainty and psychosocial development) (See Gedner, 1989, p. 123).

4. Students were recruited from general education classes which in turn provided a representative sample of academic majors in that students are required to enroll in these courses regardless of academic major or curriculum track. Gedner (1989) subtantiated this sampling procedure by recommending that data be collected on a sample of students enrolled in "core education classes" (See p. 124).

5. Assessment instruments were administered after the eighth week of the fall semester so that students would have

the opportunity to adjust to the college environment and so it would not coincide with exam periods (e.g., mid terms or finals). Gedner (1989) substantiated this procedure by recommending that the SDTLI be administered to freshmen at about the eighth to tenth week of the fall semester (See p. 123).

6. One assessment packet comprised of two instruments (the CDS and the SDTLI) was used for data collection which focuses on only "a few single-question variables" (Gedner, 1989, p. 124). Gedner (1989) substantiated this procedure by concluding that two sets of assessment packets make the data collection too lengthy and produce fatigue in the respondents who tire from filling in too many answers. Similarly, Gender noted that the collection of data for three assessment instruments is too ambitious and the information gathered may not be totally useful.

7. Assessment instruments were limited to the Certainty scale of the CDS and the PUR, MIR, and AA tasks of the SDTLI to enable students to complete all measures within one class period and to not make responding to the assessment instruments burdensome.

Assumptions

Four assumptions were made in the present study that begin a chain of reasoning upon which data were collected and analyzed which would allow for an examination of the relationship of the certainty of career decision to students' psychological and social development.

1. The paper-and-pencil measures employed in the study accurately reflected participants' state of mind.

2. Instruments were completed by participants in a candid manner such that their responses to the questionnaires accurately represented their experience.

3. The construct measures (e.g., the Certainty scale of the CDS and the PUR, MIR, and AA tasks of the SDTLI) were sufficiently sensitive to register participants' individual differences (Graves, 1974) in the intended construct the instrument was designed to measure; that is, the research instruments used provided valid measures of the characteristics under study.

4. Participants' choice of responses to items of instruments reflected equidistant units that yielded interval data.

Delimitations

The following delimitations delineated the parameters of variables investigated, the type of sample drawn, and the nature of inferences made.

1. The present study was delimited to college freshmen and sophomores at a mid-sized, midwestern university of approximately 11,000 students. The results of this study may or may not be applicable to other similar groups.

2. Only the relationship of career decision certainty to students' psychological and social development was examined. Career decision certainty was delimited to students' scores on the Certainty scale of the CDS. Psychosocial

development was delimited to students' scores in three task areas of development: Establishing and Clarifying Purpose (PUR), Developing Mature Interpersonal Relationships (MIR), and developing Academic Autonomy (AA) of the SDTLI.

3. "Indecisiveness" was not examined, nor was there any attempt to identify or exclude from the sample career undecided or tentatively decided students who may have also been "indecisive."

Definition of Terms

To facilitate a better understanding of the various terms used in the present study, operational definitions are provided below.

Career Decision. A multiple factor construct including such variables as certainty of major and certainty of career (Osipow, 1987), educational commitment (Graves, 1974), and academic stability (Wigent, 1972).

Career Decision Certainty. A two-factor construct comprised of certainty of major and certainty of career, as determined by a person's score on the Certainty scale of the Career Decision Scale (CDS) (3rd rev.) (Osipow, Carney, Winer, Yanico, & Koschier, 1976).

Certainty of Major. A person's four-point self-rating of agreement with item 2 of the Certainty scale of the CDS: "I have decided on a major and feel comfortable with it. I also know how to go about implementing my choice."

Certainty of Career. A person's four-point self-rating of agreement with item 1 of the Certainty scale of the CDS:

"I have decided on a career and feel comfortable with it. I also know how to go about implementing my choice."

Undecided. A score of 2 or 3 on the Certainty scale of the CDS.

Tentatively Decided. A score of 4, 5, or 6 on the Certainty scale of the CDS.

Decided. A score of 7 or 8 on the Certainty scale of the CDS.

Psychosocial Development. A multiple factor construct including such variables as establishing and clarifying purpose, developing mature interpersonal relationships, and developing academic autonomy, as determined by the score obtained on each corresponding developmental task: PUR, MIR, and AA of the Student Developmental Task and Lifestyle Inventory (SDTLI) (Winston, Miller, & Prince, 1987).

Developmental Task. "An interrelated set of behaviors and attitudes which the culture specifies should be exhibited at approximately the same time by a given age cohort in a designed context" (Winston and Miller, 1987, p. 8).

Task, Subtask, and Scale. "In the SDTLI tasks and subtasks are differentially affected by participation in the academic environment (both formal and informal) and change as a result of the person-environment interaction or personality-social milieu interface, . . . A 'scale' in the SDTLI is the measure of the degree to which students report possessing certain behavioral characteristics, attitudes, or feelings, but unlike a developmental task, may not be

directly affected by participation in the higher education environment" (Winston & Miller, 1987, p. 8).

Freshman. A student whose earned semester hours range from zero to 31.

Sophomore. A student whose earned semester hours range from 32 to 62.

Full-Time Student. A student who is enrolled in 12 or more semester hours.

Chapter 2

RELATED RESEARCH

Assessment in Career Decision

Within the domain of attempts to identify factors which differentiate decided and undecided college students, assessment in career decision has focused primarily on the use of four types of measures: (a) the declared versus undeclared major status of the individual; (b) self-made measures, usually various types of rating scales; (c) preliminary attempts to develop an indecision scale; and (d) various ways in using the Career Decision Scale (CDS).

Some researchers (e.g., Chase & Keene, 1981) have used the declared versus undeclared major status of the individual to discern factors which differentiate declared students (those who have declared a major) from undeclared students (those who have not declared a major). Taylor (1982), however, reported that researchers in career decision have typically used the designation of undeclared/declared major status to classify undeclared students as "undecided" and declared students as "decided" and then attempted to identify factors which differentiated the two groups (undecided and decided) on this arbitrary

classification. Taylor (1982) concluded that research in career decision may have failed to reveal factors which differentiate the decided from the undecided perhaps as a result of using too simplistic a definition and measure of the construct (e.g., declared vs. undeclared major status).

In 1966, Ashby, Wall, and Osipow used both the designation of major status and level of certainty to classify undecided and decided groups. Ashby, Wall, and Osipow (1966) suggested that using only the declaration of major status to identify the undecided or decided was most likely insufficient to assess undecidedness and decidedness because it overlooked (a) level of commitment to one's decision, (b) level of certainty about one's decision (those either uncertain, moderately certain, or certain), and (c) level of decidedness (those either undecided, tentative, or decided).

Later innovations at devising self-made measures attempted to account for more variability in the range of career decision certainty. For example, Graves (1974) developed a five-point rating scale, while Wigent (1972) developed a nine-point rating scale to determine an individual's level of career choice certainty. In addition to declaration of major status, the importance of other relevant variables to the process of becoming certain about one's academic major have been examined. For example, Graves (1974) used his five-point rating scale to assess both "certainty of vocational choice" and "degree of commitment" to complete a baccalaureate degree, while Wigent

(1972) used his nine-point rating scale to measure the stability of an individual's degree of career decidedness.

Preliminary attempts to develop the first indecision scale began in 1964 when Holland and Nichols unsuccessfully attempted to develop and validate an indecision scale in which indecision would be assessed by a series of items rather than by just one item. Construction of the Indecision Scale began with an item analysis of 273 activities, hobbies, school subjects, and sports for a large sample of high aptitude students (National Merit Finalists). Item analyses provided more than 30 items for each gender, with more than a 10 percent difference between decided and undecided students. Osipow, Carney, and Barak (1976) reported that this scale was never developed beyond the preliminary stage. In 1968, Baird revised and reduced the Holland and Nichols' Indecision Scale to 32 items for men and 20 items for women and, subsequently, conducted two studies to estimate its validity. Baird (1968) concluded, however, that even the revised Indecision Scale "might best be considered as a rough predictor of 'general effectiveness,' rather than a predictor of vocational indecision" (p. 174).

In 1977, Holland and Holland sought to estimate the validity of a vocational indecision scale, comprised of 13 items which required a true or false response, using a large sample of high school and college juniors. Where factor analysis by Osipow, Carney, and Barak (1976) of their

Indecision scale implied multiple factor scales, Holland and Holland (1977) reported that their results suggested that "students' explanations of undecidedness form a single internally consistent scale" (p. 412). Little work, however, has been conducted since to either revise the scale, norm it, or estimate its validity.

In 1976, Osipow, Carney, Winer, Yanico, and Koshier developed the Career Decision Scale (CDS) (3rd rev.) composed of two scales, a two-item Certainty scale and a 16-item Indecision scale, along with an open-ended item, and normed it on a large group of college students. The CDS was designed so that the Certainty scale would be used in conjunction with the Indecision scale. For example, the Certainty scale was designed to identify the respondent's level of choice certainty, while the Indecision scale was designed to be used (after initial diagnosis of decidedness status was made) to identify aspects of vocational indecision which pose barriers to vocational decision. Each scale can be used independently, because scale items are scored separately and do not yield a total score.

Osipow (1987) reported that low Certainty scale scores (16th percentile or below) and high Indecision scale scores (84th percentile or above) are significant. For example, low Certainty scale scores (at or below the 16th percentile) indicate that the student may be uncertain about the choice of a major and a career. High Indecision scale scores (at or above the 84th percentile) indicate that the student may

possess a serious level of indecision, that is, the student possesses numerous factors which pose barriers to a vocational decision.

In addition, a four-factor structure in the Indecision scale was identified. Osipow, Carney, and Barak (1976) identified four factors: (a) lack of structure and confidence, (b) external barriers, (c) an approach-approach problem, and (d) a personal conflict. Kazin (1976) replicated the first three factors. Slaney (1978) identified four factors but only replicated the first and fourth factors of the Osipow et al. (1976) study. Rogers and Westbrook (1983) identified two factors: perception of external limits and excessive attraction to career alternatives. Vondracek, Hostetler, Schulenberg, and Shimizu (1990) identified four factors: (a) diffusion, (b) support, (c) approach-approach, and (d) external barriers but had to exclude three CDS items (10, 13, and 14) which did not load saliently on any of the factors (See Schulenberg, Shimizu, Vondracek, & Hostetler, 1988; Shimizu, Vondracek, Schulenberg, & Hostetler, 1988).

Since 1976, the Certainty scale has been used to assess certainty about the choice of a major and a career alternative and/or to categorize respondents as either undecided or decided in order to discern differentiating factors between the two groups (Cesari, Winer, Zychlinski, & Laird, 1982). The Indecision scale has been used to assess antecedents of indecision (Lowe, 1981; Lunneborg, 1975; Osipow & Reed,

1985). The four-factor structure of the Indecision scale has been used to discern differentiating factors among the four indecision types (Fuqua, Newman, & Seaworth, 1988).

Studies in Career Decision and Development

Gordon (1984) reviewed the literature in career decision and reported that the research can be divided into three categories: (a) efforts to identify the antecedents of indecision, (b) attempts to identify factors which differentiate decided and undecided students, and (c) investigations of the processes and interventions which lead undecided students to a decision. This review focused on past attempts to identify factors which differentiate decided and undecided students and cited research which relates career decision to development.

Taylor (1982) noted that investigations of ability and personality characteristics as possible differentiating factors have served as the central focus of research. After reviewing the research, Taylor (1982) stated:

> . . . the undecided student has been described as anxious (Kimes & Troth, 1974; Walsh & Lewis, 1972), more dependent (Ashby, Wall, & Osipow, 1966), and more dogmatic (Maier & Herman, 1974) than the decided student.
>
> In addition, the undecided student has been characterized as evidencing a lower estimate of self-esteem (Barrett & Tinsley, 1977; Marr, 1965; Resnick, Fauble, & Osipow, 1970), as having lower high school and college grade point averages (Lunneborg, 1975), and as less likely to remain in college and achieve academic success (Foote, 1980) than the decided student. (p. 319)

Research conducted during the 1960s and 1970s to discern demographic, background, and personality factors which differentiate the decided and undecided have yielded a myriad of nonsignificant and conflicting data. For example, Ashby, Wall, and Osipow (1966) sought to identify demographic and background factors that differentiated vocationally decided from vocationally undecided college freshmen and reported no differences among the personality variables investigated (e.g., based on Holland personality ratings, BPI scores, and academic aspiration). In addition, no differences were observed in parental income, fathers' and mothers' education, number of siblings, birth order, and high school size.

Osipow and Reed (1985) reviewed the literature on differentiating factors in career decision and reported conflicting results on variables such as abilities and academic achievement (Ashby, Wall, & Osipow, 1966; Baird, 1969; Lunneborg, 1975, 1976; Rose & Elton, 1971). Osipow and Reed concluded that reviews of the literature continue to show the difficulty in identifying background variables associated with career undecidedness (Gordon, 1984; Osipow, 1980). Other studies have not revealed factors which differentiate decided from undecided students (Baird, 1967, 1969; Buck, 1970; Harman, 1973).

After reviewing the career decision research, Holland and Holland (1977) reported it to be characterized by conflicting, negative, or negligible findings and concluded:

> Although vocationally decided and undecided students have been assessed in many ways and with a vast range of variables (Ashby, Wall, & Osipow, 1966; Baird, 1968, 1969; Elton & Rose, 1971; Holland & Nichols, 1964; Lunneborg, 1975; Nelson & Nelson, 1940; Osipow, Carney, & Barak, 1976), few clear or compelling differences emerge.
>
> Instead, the most striking outcomes of these studies are that decided and undecided high school and college sudents are much more alike than different and that the relatively few differences found are conflicting and confusing. (Holland & Holland, 1977, p. 404)

Gordon (1984) noted that undecided students have multiple interests, are as capable as decided students, and comprise a heterogeneous sample representative of the entering freshman class. Taylor (1982) concluded that the insignificant, conflicting, and overall inconclusive findings of career decision research indicates that the causes and/or correlates of vocational indecision are different for individuals, as are the factors or characteristics which lead to decidedness may also be different among individuals.

Holland and Holland (1977) suggested that "undecided sudents are multiple subtypes rather than unitary types characterized by specific personality variables" (Gedner, 1989, p. 23). Within this domain, another group of researchers attempted to identify factors which differentiated subtypes of decided and undecided students. Elton and Rose (1971) examined a group of graduating college seniors or "stayers." Rose and Elton (1971) examined an undecided group of "stayers" and "leavers." Titley, Titley, and Wolff (1976) identified changers (students who changed majors), delayers (students who postponed making the choice of a

major), avoiders (those who avoided choosing a major), and sit-outers (those who "sat out" of school for one or more semesters).

Another perspective taken in the literature was to describe the undecided as different from the decided. In doing so, some researchers (e.g., Holland & Holland, 1977; Holland & Nichols, 1964) have described the undecided as unstable and confused. On the one hand, Holland and Nichols (1964) reported that undecided students may have a complex, creative outlook about the world which may enable them to consider a wider range of occupational opportunities but may also lead them to become confused or undecided until they narrow their options. On the other hand, the undecided may be so because developmental questions have continued to remain unresolved through adolescence. For example, Holland and Nichols (1964) reported that undecided students may develop more slowly than those who are decided. Other researchers have reported that the undecided lack a sense of identity (Holland & Holland, 1977; Rose & Elton, 1971) and/or lack vocational maturity (Holland & Holland, 1977). Rose and Elton (1971) concluded that undecided students represent a diverse population of adolescents who are undergoing what Erikson termed "identity diffusion."

Other researchers and writers have provided support for a study of the relationship between career decision and development. For example, Winston and Polkosnik (1986) acknowledged that the accomplishment of basic tasks is both

important and necessary for young adults to be able to work effectively within a particular domain in the future. Gordon (1981) specifically noted that the ability to choose a major and a career is a domain which requires the completion of certain developmental tasks. Gordon (1984) further recognized that knowledge of students' developmental stages can be used to clarify distinctions between undecided, tentative, and decided students because each student is unique with regard to maturational development, cognitive and social skills, and personality characteristics and needs.

Holden (1987) noted that the developmental literature (Chickering, 1969; Erikson, 1968; Levinson, Darrow, Klein, Levinson, & McKee, 1978) acknowledges that resolution of questions about purpose, self-identity, and life goals assume greater importance during the developmental period from late adolescence to young adulthood. Holden (1987, p. 1) also acknowledged the relevance of psychosocial development to career decision certainty as follows:

> As the adolescent pursued further education and training after high school graduation, one of the first major decisions relating to issues of purpose, identity, and life goals was encountered in the selection of an academic major.
>
> Responding to the question, "What's your major?" became a principal means of communicating about self to family and peers; for the student who had not yet selected an academic major, admission of confusion or doubt in that respect may have been an admission of identity confusion. (Brown & Strange, 1981)

Lederer (1983) reported that a student's choice of a college major and career orientation is just as consequential for students as is their initial decision to attend college or to attend a certain type of college. Reseachers reasoned that if such choices are consequential for students, then not making them may be just as, or even more, consequential. For example, Ginzberg, Ginzberg, Axelrod, and Herma (1951) and Erikson (1951) reported that it is primarily the inability to settle on an occupational identity which disturbs young people. Moreover, the congruency of choice of a college major may be a function of level of psychosocial development. For example, in examining students who made congruent and incongruent choices of a college major along with those who were undecided, Walsh (1976) reported that congruent females and males exhibited greater academic adjustment than undecided males.

Thomas (1984) reported that maintaining supportive and mature interpersonal relationships among parents, teachers, and peers is an important factor in promoting students' development. Specifically, Thomas reported that developing mature interpersonal relationships which provide adequate encouragement, sponsorship, and support are important factors in affecting students' career aspirations and attainment.

In a recent study involving the constructs of career decidedness and development, Gedner (1989) used discriminant function analysis procedures to examine the predictive

ability of the tasks, subtasks, and scales of the SDTLI to correctly classify students into three criterion categories of decidedness (e.g., undecided, tentative, or decided). Gedner (1989) identified the decided as students "able to make informed choices about their major course of study" (p. 17). Yet, students most likely to have decided upon a major and a career, and to be satisfied with the major and career chosen, may also be those who have already completed certain developmental tasks.

Gedner (1989) classified the tentatively decided as students who choose, but who are not "well-informed about their interests and abilities, the content or requirements of the chosen course of study, or the vocational opportunities afforded by their choice of majors" (p. 17). Gedner categorized the undecided as students who are "incapable of making a choice at all" (p. 17). Yet, those who remain unsure (the undecided) or those who remain doubtful (the tentatively decided) about choosing or declaring an academic major or making a career decision may be those who have not yet completed certain developmental tasks.

To establish categories for the discriminant function analysis, students completed a five-point, self-made, self-rating scale which automatically placed them into one of the three criterion groups (above). A discriminant function consisting of two variables (Purpose and Academic Autonomy) yielded significant results ($p < .0001$) and accounted for 96.9 percent of the variance while correctly classifying

52.8 percent of the subjects into three decidedness levels (undecided, 67.2 percent; tentative, 31.6 percent; and decided, 54.4 percent). Gedner reported that although this classification rate does not provide confidence of the function's ability to classify students, it does indicate the need for further research into the relationship of the certainty of career decision to students' psychological and social development.

Chapter 3

SAMPLE, INSTRUMENTATION, AND PROCEDURES

Sample

The sample of this study consisted of 135 full-time, college freshmen and sophomores recruited from lower level, undergraduate courses offered at Indiana State University (ISU) and who met four criteria: (a) were 18 to 20 years of age, (b) were enrolled in 12 or more semester hours, (c) completed 50 semester hours or less, and (d) were not a transfer student.

Participants were recruited from intact classes of general education courses. Since all undergraduate students are required to enroll in genderal education courses, regardless of academic major or curriculum track, these classes are composed of a heterogeneous group of college freshmen and sophomores who comprise a variety of academic majors and, therefore, provided a representative sample of students and majors.

Assessment instruments were administered to 289 students. Test data were omitted for 154 students: 17 of whom did not submit completed forms and 137 of whom did not satisfy the criteria restricting inclusion. Test data were

obtained on 135 students who submitted completed forms and satisfied the criteria restricting inclusion.

Table 1 contains a description of the sample by class level, gender, and career-decidedness level.

Table 1.

Frequencies and Percentages of Freshman and Sophomore Students' Class Level, Gender, and Career-Decidedness Level

	Class Level		Gender		Career Decidedness Level		
	Fresh	Soph	Male	Female	U	TD	D
Frequencies	72	63	49	86	27	74	34
Percentages	53%	47%	36%	64%	20%	55%	25%

Note: Percentages are a proportion of the total sample.
U = Undecided, TD = Tentatively Decided, D = Decided.

Table 2 contains a description of the males and females in the sample by career-decidedness level.

Table 2.

Frequencies and Percentages of Freshman and Sophomore Students by Gender and Career-Decidedness Level

	Career-Decidedness Level		
Gender	Undecided (27)	Tentatively Decided (74)	Decided (34)
Males	10 7.4%	30 22.2%	9 6.7%
Females	17 12.6%	44 32.6%	25 18.5%

Note: Percentages are a proportion of the total sample.

Instrumentation

Career Decision Scale (CDS)

The Career Decision Scale (CDS) (3rd rev.) (Osipow, Carney, Winer, Yanico, & Koschier, 1976) is composed of 19 items designed to diagnose the status of male and female high school and college students in the career decision process (Osipow, 1987). The first 18 items comprise the two scales which make up the CDS, a Certainty scale of two items, and an Indecision scale of 16 items. The last item is not a part of any scale; rather, it is an open-ended statement that allows for a free response. Only the Certainty scale was used in the present study.

Items 1 and 2 of the CDS comprise the Certainty scale, a measure of the degree of certainty a student possesses about the choice of a major and a career alternative. Item 1 states: "I have decided on a career and feel comfortable with it. I also know how to go about implementing my choice." Item 2 states: "I have decided on a major and feel comfortable with it. I also know how to go about implementing my choice."

Osipow, Carney, and Barak (1976) reported two-week, test-retest reliability estimates of stability for the two items of the Certainty scale as ranging from .72 to .80 on two untreated samples (n = 56 and n = 59). Slaney, Palko-Nonemaker, and Alexander (1981) reported a six-week, test-retest stability estimate of .58 for item 1 and .70 for item 2 of the Certainty scale when readministered to a

representative subsample of 115 (74 females and 41 males) of the original sample of 857 students (mean age of 20.1 years and mean 1.4 years of college).

Gedner (1989) reported a Cronbach alpha coefficient of .88 for the Certainty scale obtained on a sample of 697 incoming students (ages 17 to 24, mean age 17.5) attending eight summer orientation sessions at the University of Arizona which included students participating in special retention programs for minority students and recipients of financial aid.

Reliability estimates of .72 to .80 support the stability of the Certainty scale over a two-week interval (Osipow, Carney, & Barak, 1976). Six-week reliability estimates of .58 for item 1 and .70 for item 2 (Slaney, Palko-Nonemaker, & Alexander, 1981), on the other hand, indicated that actual changes in career decision certainty can occur within a six-week period which can affect the stability of the instrument. Career decision certainty can best be viewed or measured as one point in time in the process of becoming certain about an academic major and/or a career occupation. Validity estimates suggest that the Certainty scale is useful in detecting significant, treatment, posttest gains (Carney, 1977a,b) and in differentiating undecided from decided students (Limburg, 1980; Slaney, Palko-Nonemaker, & Alexander, 1981).

Student Developmental Task and Lifestyle Inventory (SDTLI)

The Student Developmental Task and Lifestyle Inventory (SDTLI) (Winston, Miller, & Prince, 1987) is a self-help, exploratory instrument which yields information about an adolescent's psychosocial development. The SDTLI was designed to assess behaviors and attitudes related to task resolution for middle class individuals between the ages of 17 and 24.

The SDTLI consists of 140 items which comprise the following three task measures: (a) Establishing and Clarifying Purpose (PUR) Task (68 items), (b) Developing Mature Interpersonal Relationships (MIR) Task (30 items), and (c) Academic Autonomy (AA) Task (10 items) and the following three scales, none of which were used in this study: (a) Salubrious Lifestyle (SL) Scale (8 items), (b) Intimacy (INT) Scale (19 items), and (c) a Response Bias (RB) Scale (5 items). PUR consists of five subtasks, MIR consists of three subtasks, while AA contains no subtasks. The inventory takes approximately 30 minutes to complete.

Specifically, the Establishing and Clarifying Purpose (PUR) Task is defined (Winston, 1990) by the following five subtasks: (a) Educational Involvement (EI) (16 items), (b) Career Planning (CP) (19 items), (c) Lifestyle Planning (LP) (11 items), (d) Life Management (LM) (16 items), and (e) Cultural Participation (CP) (6 items) (See Appendix B for detailed descriptions of each subtask).

The Developing Mature Interpersonal Relationships (MIR) Task is defined (Winston, 1990) by the following three subtasks: (a) Peer Relationships (PR) (13 items), (b) Tolerance (TOL) (nine items), and (c) Emotional Autonomy (EA) (eight items) (See Appendix C for detailed descriptions of each subtask).

The Academic Autonomy (AA) Task purportedly measures "students' capacity to deal with ambiguity and to monitor and control their own behavior in ways that allow them to attain educational goals and fulfill academic requirements without extensive direction from others" (Winston, 1988, p. 16).

The Salubrious Lifestyle Scale purportedly assesses the degree to which a student's lifestyle promotes good health and wellness practices. The Intimacy Scale is an experimental scale which is completed only by students who report being involved in an intimate relationship within the past year. The Response Bias Scale is designed to identify students who "fake good" or who are careless in completing the inventory.

To estimate the test-retest reliability of the SDTLI, Winston and Miller (1987) computed the stability of scores obtained from all tasks, subtasks, and scales of the SDTLI collected from two samples retested at two- and four-week intervals. Two-week estimates of stability were obtained on students enrolled in an introductory psychology class (N = 42) attending a small, public, southeastern college and

clustered around .80, ranging from .74 to .89. Four-week estimates of stability were obtained on students enrolled in an introductory education class (N = 27) of a large, public, southeastern university and clustered around .80, ranging from .70 to .88. These estimates provide support for the stability of the instrument over two- and four-week intervals.

Winston and Miller (1987) estimated internal consistency for SDTLI tasks using Cronbach's Coefficient Alpha and interitem and item-total correlations procedures. Alpha coefficients were obtained on 1,200 students (ages 17 - 24) enrolled at 22 colleges and universities in the U.S. and Canada. Coefficients of .90, .76, and .70 were obtained for the PUR, MIR, and AA tasks, respectively, suggesting homogeneous internal structures. Winston and Miller noted that three subtasks (CUP, TOL, and EA) have relatively low alpha coefficients of .45, .55, and .55, respectively, which suggest weak homogeneous internal structures. The researchers, therefore, recommended caution in the use of these subtasks in research studies. Mean interitem correlations for all tasks and subtasks range from .10 (MIR) to .18 (AA). Mean item-total correlations for all tasks and subtasks range from .21 (CUP) to .35 (AA).

Winston and Miller (1987) provided intercorrelations of the tasks, subtasks, and scales of the SDTLI and reported that MIR subtasks (PR, TOL, and EA) showed a moderately low relationship (.23, .17, and .19, respectively) with the PUR

Task but a higher relationship (.54, .49, and .50) with the MIR Task. PUR subtasks (EI, CP, LP, LM, and CUP) showed a moderately low relationship (.29, .19, .08, .21., and .21, respectively) with the MIR Task but a higher relationship (.73, .69, .59, .61, and .43, respectively) with the PUR Task. Winston and Miller further reported that the MIR Task correlated moderately low (.26) with the PUR Task and that the intercorrelations of MIR subtasks with PUR subtasks were low, clustering around .15 and ranging from .02 to .26. Winston and Miller (1987) concluded that such intercorrelations indicated that the PUR and MIR tasks are relatively independent of each other.

Winston and Miller (1987) reported that the AA Task is moderately correlated with both the PUR (r = .41) and MIR (r = .39) tasks. Incorporating AA items into either PUR or MIR, however, substantially lowered the alpha coefficients. Winston and Miller (1987) concluded: "The decision, therefore, was made to retain AA as a separate task because (a) logically, one would expect there to be a relationship between AA and the other tasks, and (b) the content of the task is of crucial importance for successful academic study" (p. 24).

In estimating convergent validity for the Establishing and Clarifying Purpose (PUR) Task, Winston and Miller (1987) reported that both the PUR Task and one of its subtasks, Career Planning, correlated highly (r = .70 and .72) with the Career Planning Scale of the Career Development

Inventory (CDI) (Super, Thompson, Lindeman, Jordaan, & Myers, 1981). In addition, the PUR Task correlated moderately high (r = .47) with Erwin's (1978-1979) Confidence Scale and moderately high (r = .44) with the Management of Time Scale of the Iowa Developing Autonomy Inventory (IDAI) (Jackson & Hood, 1986). As evidence of discriminant validity, Winston and Miller (1987) reported that the PUR Task correlated very low (r = .05) with the Mines-Jensen Interpersonal Relationship Inventory (Hood & Mines, 1986) and low (r = .14) with the Family Independence Scale of the College Student Questionnaire (Peterson, 1968).

In estimating convergent validity for the Developing Mature Interpersonal Relationships (MIR) Task, Winston and Miller (1987) reported that the MIR Task correlates highly (r = .71) with the Emotional Independence-Peers Scale (EIPE) of the Iowa Developing Autonomy Inventory (IDAI) (Jackson & Hood, 1986) and moderately (r = .31) with the Emotional Independence-Parents Scale (EIPA) of the Iowa Developing Autonomy Inventory (IDAI) (Jackson & Hood, 1986). In addition, the MIR Task correlates moderately high (r = .43, .51, and .44) with the Autonomy Scale of the Omnibus Personality Inventory (OPI) (Heist & Yonge, 1968), Erwin's (1978-1979) Confidence Scale, and Peterson's (1968) Family Independence Scale, respectively. To show criterion-related validity, the MIR Task should correlate with other measures of interpersonal relationships, but not so high as to indicate that the instrument is redundant. Since the MIR Task correlates

moderately (r = .37) with the Mines-Jenson Interpersonal Relationships Inventory (Hood & Mines, 1986), Winston and Miller (1987) concluded that such a relationship provides evidence to support the MIR Task's validity, but is not so high to suggest that the instruments measure exactly the same constructs.

In estimating convergent validity for the Academic Autonomy (AA) Task, Winston and Miller (1987) reported that the AA Task correlates moderately high (r = .49, .50 and .49) with the Study Habits Scale of the College Student Questionnaire (Peterson, 1968), the Management of Time Scale of the Iowa Developing Autonomy Inventory (Jackson & Hood, 1986), and the Confidence Scale of the Erwin Identity Scale (Erwin, 1978/1979), respectively. As evidence of divergent validity, three individual items were inversely related to the AA Task: frequently tired (r = -.53), attending college only to get a diploma (r = -.40), and dislike attending college (r = -.35).

Reliability estimates of .70 to .89 support the stability of all tasks, subtasks, and scales of the SDTLI over two-week and four-week intervals (Winston and Miller, 1987). Intercorrelations of the tasks and subtasks of the SDTLI, according to Winston and Miller (1987), indicate that (a) subtasks correlate more highly with the task to which they are assigned than to any other; (b) the PUR and MIR tasks are relatively independent of each other; and (c) the AA Task may be conceptually related to both PUR and MIR, but

measures a somewhat unique construct. Estimates of convergent and criterion-related validity (above) provide evidence to support the PUR, MIR, and AA task's validity, but are not so high to suggest that the instruments measure exactly the same constructs (Winston and Miller, 1987).

Procedures

Participants were distributed a packet that contained the following materials: (a) a consent form (see Appendix D); (b) self-guided instructions (see Appendix E); (c) demographic questions (see Appendix F) to complete on gender, age, transfer status, number of hours of current enrollment, and total number of earned hours completed (explained only in the self-guided instruction sheet and answered on the perimeter of the NCS scoring answer sheet); (d) the certainty scale of the Career Decision Scale (CDS) (3rd revision) (Osipow, Carney, Winer, Yanico, & Koschier, 1976); and (e) the MIR, PUR, and AA tasks of the Student Developmental Task and Lifestyle Inventory (SDTLI) (Winston, Miller, & Prince, 1987).

Participants first read and then signed a consent form (attached to the front of the packet) in order to be accepted for inclusion in the study. Self-guided instructions provided general instructions and specific directions on where and how to complete the demographic questions and the assessment instruments. The test administrator's instructions (see Appendix G), self-guided instructions, and administration procedures were standardized so that

participants within and among different classes were administered a consistent set of instructions, thus insuring the same test administration experience.

Participants were instructed to record all responses on two NCS scoring answer sheets. NCS scoring answer sheets were prepared with pre-printed information prior to administration to allow for ease of administration, to reduce confusion, and to eliminate unnecessary errors which might have been made in the coding process.

Null Hypotheses

The following null hypotheses were tested:

1. There are no significant differences in the psychological and/or social development among college freshmen and sophomores classified as undecided, tentatively decided, or decided.

2. There are no significant differences in the psychological and/or social development between male and female college freshmen and sophomores.

3. There are no significant differences in the psychological and/or social development among male and female college freshmen and sophomores classified as undecided, tentatively decided, or decided.

Data Analysis

A comparison was made of the SDTLI task and subtask performance scores of college freshmen and sophomores classified into one of three career-decidedness levels

(undecided, tentatively decided, or decided) based on groupings of certainty scale scores suggested by Osipow (1987): Undecided = 2 or 3; Tentatively Decided = 4, 5, or 6; and Decided = 7 or 8.

A 3 X 2 multivariate analysis of variance (MANOVA) design with two independent variables: career-decidedness level (undecided, tentatively decided, or decided) and gender (male or female) was employed in which SDTLI tasks and subtasks were used as dependent variable measures. Specifically, this study was designed to determine whether differences could be observed in psychosocial development task and subtask variables as a function of (a) a main effect by career-decidedness level: differences observed between undecided, tentatively decided, and decided students (Null Hypothesis 1); (b) a main effect by gender: differences observed between male and female students (Null Hypothesis 2); and/or (c) an interaction effect between career-decidedness level and gender: differences observed between male and female students classified as undecided, tentatively decided, or decided (Null Hypothesis 3).

Four MANOVAs were performed for each null hypothesis to assess the combined effect observed in each of four dependent variable clusters. The first MANOVA conducted for each null hypothesis (MANOVAs 1, 5, and 9) examined the combined effect of the three tasks of the SDTLI: PUR, MIR, and AA as dependent variables (Cluster A: the SDTLI task effect). The second MANOVA conducted for each null

hypothesis (MANOVAs 2, 6, and 10) examined the combined effect of all eight subtasks of the SDTLI (EI, CP, LP, LM, CUP, PR, TOL, and EA) and the AA task, which contains no subtasks, as dependent variables (Cluster B: the SDTLI subtask effect). The third MANOVA conducted for each null hypothesis (MANOVAS 3, 7, and 11) partitioned out the combined effect of the five subtasks of the PUR task (EI, CP, LP, LM, and CUP) as dependent variables (Cluster C: subtask effect of PUR). The fourth MANOVA conducted for each null hypothesis (MANOVAs 4, 8, and 12) separated out the combined effect of the three subtasks of the MIR task (PR, TOL, and EA) as dependent variables (Cluster D: subtask effect of MIR). Multivariate and univariate tests were computed to determine significant main and interaction effects by career-decidedness level and by gender.

Three null hypotheses were tested using a three step method of analysis: (a) multivariate tests of significance (Step One), (b) univariate tests of analysis of variance (Step Two), and (c) Duncan's Multiple Range Test (Step Three).

In step one, Wilks' likelihood ratio criterion was conducted on each of the four dependent variable clusters for each null hypothesis to determine whether there were significant main and/or interaction effects, that is, whether there were significant differences within and/or between the independent variables when the combined effect of each dependent variable cluster was investigated. Wilks'

test yields a statistic called lambda which was converted to an F-statistic. Alpha was then set at $p \leq .05$ for the rejection of the null hypothesis.

In step two, univariate tests of analysis of variance were conducted for each null hypothesis that was rejected to determine which particular task or subtask of the dependent variable measures resulted in significant main and/or interaction effects. Alpha was set at $p \leq .05$ for each univariate F-test.

In step three, Duncan's Multiple Range Test was computed to determine the ordering by level of (a) a significant main effect observed as a function of career-decidedness level for Null Hypothesis 1 and/or (b) a significant interaction effect observed as a function of career-decidedness level and gender for Null Hypothesis 3. Alpha was set at $p \leq .05$ for each Duncan's test. The data were also examined to determine the source of any significant main effect obtained by gender for Null Hypothesis 2.

A multivariate analysis of variance was conducted in the present study for two reasons. First, multivariate analysis of variance is the preferred method of statistical analysis used when the dependent variables are correlated (Hair, Anderson, & Tatham, 1987). In this study, the PUR Task showed a low relationship ($r = .12$) with the MIR Task and was, therefore, independent of the MIR Task. The AA Task, on the other hand, showed a moderate relationship with both the PUR Task ($r = .42$) and the MIR Task ($r = .39$) and

was, therefore, not independent of the PUR and MIR tasks. Second, an alternative method of analysis would have been to perform a series of 11, 3 X 2 individual ANOVAs using the three tasks of the SDTLI, the five subtasks of the PUR Task, and the three subtasks of the MIR Task as dependent variable measures. This method, however, is more likely to yield false positive findings of significance when the dependent variables are correlated (Hair, Anderson, & Tatham, 1987).

Limitations

1. The assessment instruments used rely solely on the ability of test items to consistently and accurately sample the behavior domain of content of a given theoretical concept or construct. The data are limited, therefore, by the reliability and validity of the instruments used to consistently and accurately measure the constructs under investigation.

2. The assessment instruments used rely solely on the accuracy of self-reports made by research participants. As a consequence, data from the instruments are limited to the extent that the subjective nature of the responses may be distorted and, thus, deviates from the true response.

3. The ex post facto design used in this study prohibited inferences of a causal nature to be made.

Chapter 4

RESULTS

Null Hypothesis One

It was hypothesized that there are no significant differences in the psychological and/or social development among college freshmen and sophomores classified as undecided, tentatively decided, or decided.

Four MANOVAs (1 through 4) were conducted to assess the combined effect observed in each of four dependent variable clusters (A through D). Each MANOVA provided multivariate tests of significance and univariate tests of analysis of variance. Significant main effect differences as a function of career-decidedness level were observed in the first, second, and third dependent variable clusters (MANOVAs 1, 2, and 3) but not in the fourth dependent variable cluster (MANOVA 4).

Table 3 contains the means and standard deviations of college freshmen and sophomores classified as undecided, tentatively decided, and decided for the PUR, MIR, and AA tasks of the SDTLI and the results of Wilks' lambda conducted on dependent variable Cluster A.

Table 3.

Means and Standard Deviations of College Freshmen and Sophomores by Career-Decidedness Level for Cluster A (Task Effect of SDTLI)

	Career-Decidedness Level					
	Undecided (N = 27)		Tentative (N = 74)		Decided (N =34)	
Measure	Mean	SD	Mean	SD	Mean	SD
PUR	24.74	11.29	33.12	9.38	41.56	10.27
MIR	17.85	5.50	15.99	5.26	16.76	4.10
AA	3.67	2.18	4.31	2.35	5.41	2.83

One-Way Source Table for Cluster A of MANOVA 1

Source	Wilks' lambda	No. of Dep Var	df Effect	df Error	F	p
Wilks	.78807	3	6	254	5.35	.000 ***

***$p < .001$.

The data in Table 3 show that there was a significant main effect ($p < .001$) as a function of career-decidedness level when the combined effect of the three psychosocial development task variables of PUR, MIR, and AA as dependent variables was examined.

Table 4 contains the results of the univariate tests conducted on dependent variable Cluster A (PUR, MIR, and AA) to determine which subtask(s) of the SDTLI yielded significant differences as a function of career-decidedness level.

Table 4.

Univariate F-Tests of Career-Decidedness Level (Certainty) for Cluster A of MANOVA 1

DV	Source	SS	df	MS	F	p
PUR	Certainty	2999.0	2	1499.5	15.67	.000 ***
	Error	12346.5	129	95.7		
MIR	Certainty	45.9	2	22.9	.90	.408
	Error	3280.5	129	25.4		
AA	Certainty	18.3	2	9.1	1.57	.213
	Error	753.1	129	5.8		

***$p < .001$.

The data in Table 4 show that there were significant differences ($p < .001$) as a function of career-decidedness level for the Clarifying Purpose (PUR) Task. There were no significant differences as a function of career-decidedness level for the MIR ($p = .408$) or the AA ($p = .213$) tasks.

Table 5 contains the means and standard deviations of college freshmen and sophomores classified as undecided, tentatively decided, and decided for the EI, CP, LP, LM, CUP, TOL, PR, and EA subtasks and the AA Task of the SDTLI and the results of Wilks' lambda conducted on dependent variable Cluster B. The data in Table 5 show that there was a significant main effect ($p < .01$) as a function of career-decidedness level when the combined effect of the eight psychosocial development subtasks (EI, CP, LP, LM, CUP, TOL, PR, and EA) and the Academic Autonomy (AA) Task as dependent variables was examined.

Table 5.

Means and Standard Deviations of College Freshmen and Sophomores by Career-Decidedness Level for Cluster B (Subtask Effect of SDTLI)

	Career-Decidedness Level					
	Undecided (N = 27)		Tentative (N = 74)		Decided (N =34)	
Measure	Mean	SD	Mean	SD	Mean	SD
EI	4.93	3.52	7.51	2.82	9.71	3.04
CP	6.11	4.16	8.92	3.69	11.74	3.70
LP	4.63	2.71	6.04	2.31	7.47	2.22
LM	6.96	2.82	8.31	3.00	9.74	3.21
CUP	2.11	1.37	2.34	1.44	2.91	1.40
TOL	5.81	1.71	5.15	2.18	5.44	2.16
PR	8.04	2.70	6.97	2.67	7.15	2.41
EA	4.00	2.22	3.86	1.83	4.18	1.45
AA	3.67	2.18	4.31	2.35	5.41	2.83

One-Way Source Table for Cluster B of MANOVA 2

Source	Wilks' lambda	No. of Dep Var	df Effect	df Error	F	p
Wilks	.73395	9	18	242	2.25	.003 **

**p < .01.

Table 6 contains the results of the univariate tests conducted on dependent variable Cluster B (the eight subtasks and the AA Task) to determine which subtask(s) of

the SDTLI yielded significant differences as a function of career-decidedness level.

Table 6.

Univariate F-Tests of Career-Decidedness Level (Certainty) for Cluster B of MANOVA 2

DV	Source	SS	df	MS	F	p
EI	Certainty	284.9	2	142.4	15.87	.000 ***
	Error	1157.7	129	9.0		
CP	Certainty	340.3	2	170.2	12.09	.000 ***
	Error	1815.8	129	14.1		
LP	Certainty	72.6	2	36.3	6.55	.002 **
	Error	715.2	129	5.5		
LM	Certainty	70.7	2	35.4	3.97	.021 *
	Error	1148.7	129	8.9		
CUP	Certainty	7.1	2	3.5	1.77	.174
	Error	258.1	129	2.0		
TOL	Certainty	4.7	2	2.4	.55	.581
	Error	556.9	129	4.3		
PR	Certainty	21.0	2	10.5	1.54	.218
	Error	877.2	129	6.8		
EA	Certainty	2.2	2	1.1	.32	.728
	Error	441.2	129	3.4		
AA	Certainty	18.3	2	9.1	1.57	.213
	Error	753.1	129	5.8		

*$p < .05$; ** $p < .01$; ***$p < .001$.

The data in Table 6 show that there were significant differences as a function of career-decidedness level for the first four subtasks of the PUR Task: Educational Involvement (EI) ($p < .001$), Career Planning (CP) ($p < .001$), Lifestyle Planning (LP) ($p < .01$), and Life Management (LM)

($p < .05$). There were no significant differences as a function of career-decidedness level for four SDTLI subtasks: Cultural Participation (CUP) ($p = .174$), Tolerance (TOL) ($p = .581$), Peer Relations (PR) ($p = .218$), and Emotional Autonomy (AA) ($p = .728$) and the Academic Autonomy (AA) Task ($p = .213$).

Table 7 contains the means and standard deviations of college freshmen and sophomores classified as undecided, tentatively decided, and decided for the EI, CP, LP, LM, and CUP subtasks of the PUR Task and the results of Wilks' lambda conducted on dependent variable Cluster C. The data in Table 7 show that there was a significant main effect as a function of career-decidedness level (F significant at .001) when the combined effect of the five subtasks of the PUR Task (EI, CP, LP, LM, and CUP) as dependent variables was examined.

Table 8 contains the results of the univariate tests conducted on dependent variable Cluster C (EI, CP, LP, LM, and CUP) to determine which subtask(s) of the PUR Task yielded significant differences as a function of career-decidedness level. The data in Table 8 show that there were significant differences as a function of career-decidedness level for the first four subtasks of the PUR Task: Educational Involvement (EI), Career Planning (CP), Lifestyle Planning (LP), and Life Management (LM). The F values were significant at .001, .001, .01, and .05, respectively, which confirmed and duplicated the findings obtained from the

univariate tests conducted on dependent variable Cluster B (See Table 6).

Table 7.

Means and Standard Deviations of College Freshmen and Sophomores by Career-Decidedness Level for Cluster C (Subtask Effect of PUR)

	Career-Decidedness Level					
	Undecided (N = 27)		Tentative (N = 74)		Decided (N =34)	
Measure	Mean	SD	Mean	SD	Mean	SD
EI	4.93	3.52	7.51	2.82	9.71	3.04
CP	6.11	4.16	8.92	3.69	11.74	3.70
LP	4.63	2.71	6.04	2.31	7.47	2.22
LM	6.96	2.82	8.31	3.00	9.74	3.21
CUP	2.11	1.37	2.34	1.44	2.91	1.40

One-Way Source Table for Cluster C of MANOVA 3

Source	Wilks' lambda	No. of Dep Var	df Effect	df Error	F	p
Wilks	.77612	5	10	250	3.38	.000 ***

***p < .001.

Table 9 contains the means and standard deviations of college freshmen and sophomores classified as undecided, tentatively decided, and decided for the TOL, PR, and EA subtasks of the MIR Task and the results of Wilks' lambda conducted on dependent variable Cluster D. The data in

Table 8.

Univariate F-Tests of Career-Decidedness Level (Certainty) for Cluster C of MANOVA 3

DV	Source	SS	df	MS	F	p
EI	Certainty	284.9	2	142.4	15.87	.000 ***
	Error	1157.7	129	9.0		
CP	Certainty	340.3	2	170.2	12.09	.000 ***
	Error	1815.8	129	14.1		
LP	Certainty	72.6	2	36.3	6.55	.002 **
	Error	715.2	129	5.5		
LM	Certainty	70.7	2	35.4	3.97	.021 *
	Error	1148.7	129	8.9		
CUP	Certainty	7.1	2	3.5	1.77	.174
	Error	258.1	129	2.0		

*p < .05; ** p < .01; ***p < .001.

Table 9 show that there was no significant main effect as a function of career-decidedness level when the combined effect of the three subtasks of the MIR Task (TOL, PR, and EA) as dependent variables was examined. A univariate analysis of dependent variable Cluster D for MANOVA 4 was, therefore, not necessary.

Multivariate tests of the four dependent variable clusters analyzed in MANOVAs 1 through 4 showed that there were significant main effect differences in psychosocial development as a function of career-decidedness level when the combined effect of (a) the three tasks of the SDTLI (MANOVA 1, Table 3), (b) the eight subtasks (of the PUR and MIR tasks) and the Academic Autonomy Task (MANOVA 2,

Table 9.

Means and Standard Deviations of College Freshmen and Sophomores by Career-Decidedness Level for Cluster D (Subtask Effect of MIR)

	Career-Decidedness Level					
	Undecided (N = 27)		Tentative (N = 74)		Decided (N =34)	
Measure	Mean	SD	Mean	SD	Mean	SD
TOL	5.81	1.71	5.15	2.18	5.44	2.16
PR	8.04	2.70	6.97	2.67	7.15	2.41
EA	4.00	2.22	3.86	1.83	4.18	1.45

One-Way Source Table for Cluster D of MANOVA 4

Source	Wilks' lambda	No. of Dep Var	df Effect	df Error	F	p
Wilks	.95846	3	6	254	.908	.490

Table 5), and (c) the five subtasks of the PUR Task (MANOVA 3, Table 7) were separately examined, but not when the combined effect of the three subtasks of the MIR Task (MANOVA 4, Table 9) was examined. Univariate tests of the first, second, and third dependent variable clusters analyzed in MANOVAs 1 through 3 indicated that the Clarifying Purpose (PUR) Task (MANOVA 1, Table 4) and the EI, CP, LP, and LM subtasks of the PUR Task (MANOVA 2, Table 6; MANOVA 3, Table 8) were the source of the measured dependent variable effect.

The null hypothesis was rejected as a function of career-decidedness level because there was a main effect observed for the PUR Task and four PUR subtasks (EI, CP, LP, and LM). As a result, Duncan's Multiple Range Test was conducted to determine whether there was a significant main effect due to differences between (a) undecided and tentatively decided, (b) tentatively decided and decided, and/or (c) undecided and decided students for the Clarifying Purpose Task and for each of the four PUR subtasks (EI, CP, LP, and LM). Results of Duncan's Multiple Range Test showed that the Decided group scored significantly higher ($p < .001$) than the Tentatively Decided group who scored significantly higher ($p < .001$) than the Undecided group for the Clarifying Purpose (PUR) Task and four PUR subtasks: Educational Involvement (EI), Career Planning (CP), Lifestyle Planning (LP), and Life Management (LM).

Null Hypothesis Two

It was hypothesized that there are no significant differences in the psychological and/or social development between male and female college freshmen and sophomores.

Four MANOVAs (5 through 8) were conducted to assess the combined effect observed in each of four dependent variable clusters (A through D). Each MANOVA provided multivariate tests of significance and univariate tests of analysis of variance. Significant main effect differences as a function of gender were observed in dependent variable Cluster A (MANOVA 5) but not in dependent variable Cluster B (MANOVA

6). As a result, Null Hypothesis 2 was rejected.

Table 10 contains the means and standard deviations of college freshmen and sophomores by gender for the PUR, MIR, and AA tasks of the SDTLI and the results of Wilks' lambda conducted on dependent variable Cluster A.

Table 10.

Means and Standard Deviations of College Freshmen and Sophomores by Gender for Cluster A (Task Effect of SDTLI)

	Gender			
	Male (N = 49)		Female (N = 86)	
Measure	Mean	SD	Mean	SD
PUR	30.41	11.24	35.37	11.21
MIR	15.53	5.48	17.14	4.76
AA	3.92	2.34	4.77	2.56

One-Way Source Table for Cluster A of MANOVA 5

Source	Wilks' lambda	No. of Dep Var	df Effect	df Error	F	p
Wilks	.92397	3	3	127	3.48	.018 *

*$p < .05$.

There was a significant main effect ($p < .05$) as a function of gender when the combined effect of the three psychosocial development task variables (PUR, MIR, and AA) as dependent variables was examined.

Table 11 contains the results of the univariate tests conducted on dependent variable Cluster A (PUR, MIR, and AA) to determine which task(s) of the SDTLI yielded significant differences as a function of gender.

Table 11.

Univariate F-Tests of Gender for Cluster A of MANOVA 5

DV	Source	SS	df	MS	F	p
PUR	Gender	777.3	1	777.3	8.12	.005 **
	Error	12346.5	129	95.7		
MIR	Gender	80.7	1	80.7	3.17	.077
	Error	3280.5	129	25.4		
AA	Gender	11.4	1	11.4	1.96	.164
	Error	753.1	129	5.8		

**$p < .01$.

Results indicated that there were significant differences ($p < .01$) as a function of gender for the Clarifying Purpose (PUR) Task. There were no significant differences as a function of gender for the MIR Task ($p = .077$) or for the AA Task ($p = .164$).

Table 12 contains the means and standard deviations of college freshmen and sophomores by gender for the EI, CP, LP, LM, CUP, TOL, PR, and EA subtasks and the AA Task of the SDTLI and the results of Wilks' lambda conducted on dependent variable Cluster B.

Table 12.

Means and Standard Deviations of College Freshmen and Sophomores by Gender for Cluster B (Subtask Effect of SDTLI)

	Gender			
	Male (N = 49)		Female (N = 86)	
Measure	Mean	SD	Mean	SD
EI	6.67	3.37	8.05	3.34
CP	8.27	4.42	9.52	4.04
LP	5.63	2.67	6.40	2.43
LM	7.69	2.99	8.80	3.17
CUP	2.14	1.35	2.60	1.46
TOL	4.86	2.38	5.64	1.86
PR	6.78	2.69	7.49	2.57
EA	3.90	1.82	4.01	1.83
AA	3.92	2.34	4.77	2.56

One-Way Source Table for Cluster B of MANOVA 6

Source	Wilks' lambda	No. of Dep Var	df Effect	df Error	F	p
Wilks	.90175	9	9	121	1.46	.169

There was no significant main effect as a function of gender when the combined effect of the eight psychosocial development subtasks, consisting of EI, CP, LP, LM, CUP, TOL, PR, and EA and the Academic Autonomy (AA) Task, as dependent

variables was examined. As a result, univariate F-tests of dependent variable Cluster B analyzed in MANOVA 6 was unnecessary. The lack of a significant main effect as a function of gender in MANOVA 6 (Table 12) eliminated the necessity to examine and present summary tables of the multivariate and univariate tests analyzed in MANOVAs 7 and 8.

Multivariate tests of the first and second dependent variable clusters indicated significant main effect differences in psychosocial development as a function of gender when the combined effect of the three tasks of the SDTLI (MANOVA 5, Table 10) was examined but not when the combined effect of the eight subtasks (of the PUR and MIR tasks) and the Academic Autonomy (AA) Task (MANOVA 6, Table 12) was examined. Univariate tests of the first dependent variable cluster analyzed in MANOVA 6 indicated that gender differences were observed for the Clarifying Purpose (PUR) Task. Duncan's Multiple Range Test was not performed for Hypothesis 2, however, since there are only two levels of the independent variable (gender). Inspection of the data in Table 10 show that Females (Mean = 35.37) scored significantly higher ($p < .05$) than Males (Mean = 30.41) for the Clarifying Purpose (PUR) Task of the SDTLI.

Null Hypothesis Three

It was hypothesized that there are no significant differences in the psychological and/or social development among male and female college freshmen and sophomores classified as undecided, tentatively decided, or decided.

Four MANOVAs (9 through 12) were conducted to assess the combined effect observed in each of four dependent variable clusters (A through D). Each MANOVA provided multivariate tests of significance and univariate tests of analysis of variance. Significant interaction effect differences as a function of career-decidedness level and gender were not observed in either Cluster A or Cluster B analyzed in MANOVAs 9 and 10. As a result, Null Hypothesis 3 was retained.

Table 13 contains the means and standard deviations of male and female college freshmen and sophomores classified as undecided, tentatively decided, and decided for the PUR, MIR, and AA tasks of the SDTLI and the results of Wilks' lambda conducted on dependent variable Cluster A. The data in Table 13 show that there was no significant interaction as a function of career-decidedness level and gender when the three psychosocial development task variables (PUR, MIR, and AA) as dependent variables were examined. Univariate F-tests of dependent variable Cluster A analyzed in MANOVA 9 were, therefore, unnecessary.

Table 14 contains the means and standard deviations of male and female college freshmen and sophomores by career-decidedness level and the results of Wilks' lambda conducted on Cluster B. The data in Table 14 show that there was no significant interaction as a function of career-decidedness level and gender when the eight psychosocial development subtasks (EI, CP, LP, LM, CUP, TOL, PR, and EA) and the

Table 13.

Means and Standard Deviations of College Freshmen and Sophomores by Career-Decidedness Level and Gender for Cluster A (Task Effect of SDTLI)

		Career-Decidedness Level					
		Undecided (N = 27)		Tentative (N = 74)		Decided (N = 34)	
Measure	Gender	Mean	SD	Mean	SD	Mean	SD
PUR	Male	21.33	12.63	31.90	10.19	34.33	9.50
	Female	26.44	10.52	34.00	8.77	44.16	9.40
MIR	Male	16.44	5.77	15.42	5.97	15.00	3.16
	Female	18.56	5.39	16.40	4.72	17.40	4.26
AA	Male	4.11	2.57	3.84	2.25	4.00	2.69
	Female	3.44	2.01	4.65	2.39	5.92	2.75

One-Way Source Table for Cluster A of MANOVA 9

Source	Wilks' lambda	No. of Dep Var	df Effect	df Error	F	p
Wilks	.94319	3	6	254	1.26	.278

Academic Autonomy (AA) Task as dependent variables were examined. Univariate analysis of dependent variable Cluster B analyzed in MANOVA 10 was, therefore, unnecessary. The inability to observe a significant interaction effect between career-decidedness level and gender because of the combined effect of the eight subtasks and the AA Task analyzed in MANOVA 10 (Table 14) also eliminated the necessity to examine the third and fourth dependent variable clusters for the subtask effect of: (a) the PUR Task (MANOVA 11)

Table 14.

Means and Standard Deviations of College Freshmen and Sophomores by Career-Decidedness Level and Gender for Cluster B (Subtask Effect of SDTLI)

		Career-Decidedness Level					
		Undecided (N = 27)		Tentative (N = 74)		Decided (N =34)	
Measure	Gender	Mean	SD	Mean	SD	Mean	SD
EI	Male	3.67	3.77	7.00	2.78	8.56	3.21
	Female	5.56	3.31	7.88	2.83	10.12	2.93
CP	Male	5.00	4.42	8.87	4.10	9.44	4.42
	Female	6.67	4.04	8.95	3.42	12.56	3.10
LP	Male	4.67	3.24	5.77	2.53	6.11	2.67
	Female	4.61	2.50	6.23	2.15	7.96	1.86
LM	Male	6.22	2.39	8.10	2.93	7.78	3.60
	Female	7.33	3.01	8.47	3.08	10.44	2.81
CUP	Male	1.78	.97	2.16	1.44	2.44	1.42
	Female	2.28	1.53	2.47	1.44	3.08	1.38
TOL	Male	5.00	1.87	4.81	2.59	4.89	2.32
	Female	6.22	1.52	5.40	1.81	5.64	2.12
PR	Male	7.56	2.60	6.81	2.91	5.89	1.83
	Female	8.28	2.78	7.09	2.51	7.60	2.47
EA	Male	3.89	2.37	3.81	1.80	4.22	1.39
	Female	4.06	2.21	3.91	1.87	4.16	1.49
AA	Male	4.11	2.57	3.84	2.25	4.00	2.69
	Female	3.44	2.01	4.65	2.39	5.92	2.75

One-Way Source Table for Cluster B of MANOVA 10

Source	Wilks' lambda	No. of Dep Var	df Effect	df Error	F	p
Wilks	.89252	9	18	242	.787	.715

and/or (b) the MIR Task (MANOVA 12). As a result, summary tables of the multivariate and univariate tests are not presented for either MANOVA 11 or 12.

Multivariate tests of the first and second dependent variable clusters examined in MANOVAs 9 and 10 indicated that significant interaction effect differences did not exist as a function of career-decidedness level and gender when the combined effect of: (a) the three tasks of the SDTLI (MANOVA 9, Table 13) and/or (b) the eight subtasks (of the PUR and MIR tasks) and the Academic Autonomy Task (MANOVA 10, Table 14) were examined.

Discussion

Null Hypothesis One

A significant main effect as a function of career-decidedness level was observed on the Clarifying Purpose Task and four of its subtasks: Educational Involvement, Career Planning, Lifestyle Planning, and Life Management. This finding is consistent with Gedner's (1989) research from which she reported that the Clarifying Purpose Task was part of a discriminant function (e.g., Clarifying Purpose and Academic Autonomy) which correctly classified 52.8 percent of students into undecided, tentatively decided, and decided groups. This finding is also consistent with the research of Winston and Polkosnik (1986), who reported a moderate relationship ($r = .49$) between Clarifying Purpose and career development.

One explanation of the current finding is that psychological development of Educational Involvement, Career Planning, Lifestyle Planning, and Life Management may mediate the certainty of a major and a career since students who scored high on these task measures of development were more likely to be career-decided than were students who scored low on these task measures. A second and related explanation is that career-decided students have already completed the developmental tasks of Educational Involvement, Career Planning, Lifestyle Planning, and Life Management, while the undecided and tentatively decided have yet to complete such tasks. A third explanation is that career decision certainty may mediate development. Reporting certainty (of the choice of a major and/or a career) may facilitate commitment to and satisfaction with the choice while expressing uncertainty may foster dissastisfaction with the choice made.

The lack of significant differences among undecided, tentatively decided, and decided students on the Peer Relations and Emotional Autonomy subtasks is inconsistent with Thomas' (1984) finding that providing adequate encouragement, sponsorship, and support facilitate students' career aspirations and attainment. One explanation for no differences is that participants in the current study may not have had relationships which contained these factors.

It would appear that the lack of significant differences among undecided, tentatively decided, and decided

students on the Academic Autonomy Task occurred because college freshmen and sophomores have not yet developed academic autonomy and the self-discipline necessary for independent study which might differentiate career-decided juniors from undecided and tentatively decided juniors.

Null Hypothesis Two

Females scored significantly higher than males on the Clarifying Purpose (PUR) Task. This finding is consistent with the research of Gatica (1982), who reported that females outscored males on the Clarifying Purpose Task. The simplist explanation of this result is that women's psychological development of Clarifying Purpose is higher than that of similar males and reflects a real developmental difference.

Male and female students did not score differently on other tasks and subtasks, indicating that the differential development of women appears to be limited in domains. The finding of a lack of differences is inconsistent with other research which reported that females outscored male students (a) on the the Developing Mature Interpersonal Relationships Task (Pollard, Benton, & Hinz, 1983), (b) on the Tolerance subtask (Hinz, Benton, Pollard, & Jerrolds, 1983), and (c) on the Emotional Autonomy subtask (Hinz et al., 1983) of the Student Developmental Task Inventory (rev., 2nd ed.) (SDTI-2).

Reasons to account for these inconsistencies may be (a) the sample used in the current study differed from those of

other reseachers; (b) the SDTI-2 (used by researchers mentioned above) differs from the SDTLI (used in this research) in ways which assessed different constructs; (c) gender differences may develop later during the collegiate socialization experience; and (d) the task and subtask measures of the Developing Mature Interpersonal Relationships Task of the SDTLI are not sufficiently sensitive and/or are not appropriate for use to differentiate college freshmen and sophomores by gender.

Null Hypothesis Three

Male and female students classified as undecided, tentatively decided, or decided were not differentiated on (a) the Clarifying Purpose (PUR) Task and its subtasks, (b) the Establishing Mature Interpersonal Relationships (MIR) Task and its subtasks, and (c) the Academic Autonomy (AA) Task. The finding of no differences between career-decidedness level and gender for the Clarifying Purpose Task and its subtasks is inconsistent with the findings of Super (1984) who reported that social traditions (such as sex-role stereotyping, biases, the opportunity structure, and individual differences) are determinants of preferences for career and life roles, indicating that career development is different for males and females. The finding of no interaction differences between career-decidedness level and gender suggests that the developmental process of male and female college freshmen and sophomores is essentially the same. On the other hand, psychological development may

mediate career decision certainty among college freshmen and sophomores but may take longer (not until the junior year) for the impact of the collegiate experience to exert an effect on gender differences in the psychological development of undecided, tentatively decided, and decided students. A final explanation for the finding of no significant interaction between career-decidedness level and gender may be a function of small cell sizes, specifically, too few undecided males (10) and too few decided males (9). The responses of a few participants in either of these cells could have affected the outcome of the interaction effect.

Chapter 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This study was an investigation of the relationship between psychosocial development as a function of career-decidedness level and/or gender. Three research questions were posed: (a) Do college freshmen and sophomores classified as career undecided, tentatively decided, or decided score differently on measures of psychological and/or social development? (b) Do male and female college freshmen and sophomores score differently on measures of psychological and/or social development? (c) Do male and female college freshmen and sophomores classified as career undecided, tentatively decided, or decided score differently on measures of psychological and/or social development?

Three null hypotheses were tested for differences which could be observed in psychosocial development task and sub-task performance scores as a function of career-decidedness level, gender, and career-decidedness level and gender. Four MANOVAs were performed for each null hypothesis to assess the combined effect observed in each of four

dependent variable clusters (a) the three tasks of the SDTLI, (b) the eight subtasks and the Academic Autonomy Task, (c) the five subtasks of the Clarifying Purpose Task, and (d) the three subtasks of the Developing Mature Interpersonal Relationships Task. Each null hypothesis was tested using a three step method of analysis (a) multivariate tests of significance (Wilks' lambda) (Step One), (b) univariate tests of analysis of variance (Step Two), and (c) Duncan's Multiple Range Test (Step Three).

A sample of 135, full-time, traditional, freshman and sophomore, nontransfer, male and female college students (between 18 and 20 years of age) was recruited from general education courses among sections of Introductory Psychology, Introductory Sociology, and Career and Life Planning courses at Indiana State University.

The Certainty scale of the Career Decision Scale was used to classify students into undecided, tentatively decided, and decided groups. The Clarifying Purpose (PUR) Task, the Developing Mature Interpersonal Relationships (MIR) Task, and the Academic Autonomy (AA) Task of the SDTLI measured three of Chickering's seven vectors which were identified as being most essential to advance college students' level of psychosocial development. These three vectors are (a) Clarifying Purpose, measured by the Clarifying Purpose (PUR) Task and defined to be comprised of five subtasks: Educational Involvement, Career Planning, Lifestyle Planning, Life Management, and Cultural Participation;

(b) Freeing Interpersonal Relationships, measured by the Developing Mature Interpersonal Relationships (MIR) Task and defined to be comprised of three subtasks: Tolerance, Peer Relations, and Emotional Autonomy; and (c) Becoming Autonomous, measured by the Academic Autonomy (AA) Task and defined to be a single-factor measure. The usefulness of a developmental approach in differentiating undecided, tentatively decided, and decided freshman and sophomore college students was investigated.

Null Hypothesis One. There were no significant differences in either psychological or social development among college freshmen and sophomores classified as undecided, tentatively decided, or decided. Multivariate tests of Wilks' lambda conducted on dependent variable clusters A, B, and C indicated that there were significant main effect differences in psychological but not social development as a function of career-decidedness level. These data provided sufficient evidence to reject Null Hypothesis 1.

Null Hypothesis Two. There were no significant differences in either psychological or social development between male and female college freshmen and sophomores. Multivariate tests of Wilks' lambda conducted on dependent variable clusters A and B indicated that there were significant main effect differences in psychological but not social development as a function of gender. These data provided sufficient evidence to reject Null Hypothesis 2.

Null Hypothesis Three. There were no significant differences in either psychological or social development among male and female college students classified as undecided, tentatively decided, or decided. Multivariate tests of Wilks' lambda for dependent variable clusters A and B indicated that there were no significant interaction differences in psychosocial development as a function of career-decidedness level and gender. These data did not provide sufficient evidence to reject Null Hypothesis 3.

Conclusions

Within the scope of the limitations presented in Chapter 3, the following conclusions seem to be warranted.

1. Career-decided college underclassmen have attitudes and behaviors which differ from tentatively decided and undecided students, but only in a limited number of areas. Specifically, decided students (a) have developed well-defined educational goals and plans, (b) are task-oriented career planners, (c) have direction and have made personal and life plans, and (d) have managed life tasks and academic demands.

2. Female underclassmen have attitudes and behaviors which differ from male underclassmen, but only in a limited number of areas. Specifically, female students (a) have developed well-defined educational goals and plans, (b) are task-oriented career planners, (c) have direction and have made personal and life plans, and (d) have managed life tasks and academic demands.

3. Male and female underclassmen develop career decidedness and psychological and/or social development in much the same manner.

Implications

Literature in career decision has been reported to be characterized by conflicting, negative, or negligible findings (Holland & Holland, 1977). Research in career decision has been reported to have failed to identify factors which differentiate the decided from the undecided for two reasons: (a) as a result of using too simplistic a definition and a measure of the construct of career decidedness, e.g., declared vs. undeclared major status, (Taylor, 1982) and (b) as a result of overlooking the potential of psychosocial development variables to produce factors which differentiate the two groups (Gedner, 1989). The following implications emerge from the findings of this study.

1. In making interventions with college freshmen and sophomores, career counselors should be aware that Educational Involvement, Career Planning, Lifestyle Planning, and Life Management are salient factors which facilitate an awareness that more information and experience with the world of work is needed before a well-developed and formulated decision can be made. Integrating these four factors into interventions should enhance the intervention's effectiveness in increasing career decidedness.

2. Programs and courses designed to increase students' Educational Involvement, Career Planning, Lifestyle

Planning, and Life Management should stimulate further the career development of college freshmen and sophomores.

3. Career counselors should design and implement programs with the awareness that undecided and tentatively decided students may not have completed the developmental tasks of Educational Involvement, Career Planning, Lifestyle Planning, and Life Management. Declaring an academic major, for these students, may serve as a mere paper distinction rather than as a sign of more complex development.

Recommendations

The following recommendations are offered in consideration of future research with regard to expanding the sample, using other instruments, employing different methodology, and investigating other variables.

1. This investigation should be replicated using a larger sample of college students classified as undecided and a larger overall sample of randomly selected participants.

2. It is recommended that an investigation be conducted using the SDTLI with different groups of undecided, tentatively decided, and decided college students (e.g., stayers vs. leavers, changers, delayers, sit-outers, and avoiders).

3. An investigation should be conducted which utilizes the Clarifying Purpose (PUR) Task and four PUR subtasks: Educational Involvement (EI), Career Planning (CP), Lifestyle Planning (LP), and Life Management (LM) of the SDTLI

in an effort to investigate the relationship of career decision certainty (via career-decidedness level) and/or gender to psychological development by class standing (freshmen, sophomores, juniors, and seniors) and by lower and upper, class standing (between freshmen or sophomores and juniors or seniors).

4. It is recommended that an investigation be conducted which utilizes different measures of the Developing Mature Interpersonal Relationships (MIR) Task and the Academic Autonomy (AA) Task of the SDTLI to determine whether relationships can be demonstrated between career decision certainty (via career-decidedness level) and Chickering's vectors of Freeing Interpersonal Relationships and Becoming Autonomous. Alternate measures of MIR and AA should be investigated which might differentiate the undecided, tentatively decided, and decided among a group of college freshmen and sophomores.

5. An investigation should be conducted to examine the relationship of the four factors of career indecision, via the Indecision scale of the Career Decision Scale, and college students' psychological and social development, via the Clarifying Purpose (PUR) Task, the Developing Mature Interpersonal Relationships (MIR) Task, and the Academic Autonomy (AA) Task of the SDTLI.

6. Future investigations should be conducted in which (a) experimental treatment(s) are administered to research participants, (b) participants are randomly assigned to

treatments, and (c) a control group is employed so that inferences of a causal nature can be made about the relationships observed among the variables investigated in the study.

7. It should be sought to determine whether college students classified as: (a) low, medium, or high on the EI, CP, LP, and LM subtasks of the PUR Task of the SDTLI and (b) undecided, tentatively decided, or decided on the Certainty scale of the CDS (in which, Undecided = 2 or 3; Tentatively Decided = 4, 5, or 6; and Decided = 7 or 8) score differently on measures of identity, dependency, and anxiety.

8. Emphasis in the research should be placed on the certainty about one's choice of an academic major and/or a vocational occupation and the corresponding components of career decision certainty which may serve as more relevant factors in career decision than the initial declaration of one's choice and/or antecedent factors to the choice. Among variables that should be included in future investigations of career choice are: (a) certainty of one's choice, (b) satisfaction with one's choice, (c) congruency of the choice with one's values, (d) urgency of the choice, (e) internal and external conflict associated with or generated by a particular choice, (f) durability of the choice in the face of competing alternatives, and (g) stability of choice.

APPENDIXES

APPENDIX A

Chickering's (1969, pp. 8-19) Seven Vectors (from Vieselmeyer, 1989, pp. 32-33)

1. Achieving Competence. Competence involves the development of intellectual competence, physical and manual skills, and social and interpersonal competence. It involves also a sense of competence, defined as "the confidence one has in his ability to cope with what comes and to achieve successfully what he sets out to do."

2. Managing Emotions. The young adult's first task is to become aware of feeings and to trust them more, to recognize that they provide information relevant to contemplated behavior or to decisions about future plans. As a larger range of feelings are fully expressed, new and more useful patterns of expression and control can be achieved.

3. Becoming Autonomous. Mature indepedence requires both emotional and instrumental independence and the recognition of one's interdependencies. To be emotionally independent is to be free of continual and pressing needs for reassurance and approval. Instrumental independence has two components, the ability to carry on activities and to cope with problems without seeking help, and the ability to be mobile in relation to one's needs. Interdependence is recognizing that loving and being loved are complementary, or that one cannot receive benefits of a social structure without contributing to it.

4. Establishing Identity. Identity is confidence in one's ability to maintain inner sameness and continuity and involves clarification of conceptions concerning physical needs, characteristics, and personal appearances, and clarification of sexual identification, and of sex appropriate roles and behaviors.

5. Feeing Interpersonal Relationships. Relationships should shift toward greater trust, independence, and individuality and should become less anxious, less defensive, less burdened by inappropriate past reactions, more friendly, more spontaneous, more warm, and more respectful. Developing tolerance for a wide range of persons is a significant aspect of this task.

6. Clarifying Purposes. Development of purpose requires formulating plans and priorities that integrate avocational and recreational interests, vocational plans, and life style considerations.

7. Developing Integrity. Developing integrity is defined as "the clarification of a personally valid set of beliefs that have some internal consistency and provide a guide for behavior." Such development involves the humanizing of values, the personalizing of values, and the development of congruence. Humanizing of values describes the shift from a literal belief in the absoluteness of rules to a more relative view. Personalizing values occurs as values are first examined and then selected by an individual. The development of congruence is the achievement of behavior consistent with the personalized values held.

APPENDIX B

Subtasks of the PUR Task of the SDTLI

The Establishing and Clarifying Purpose (PUR) Task is defined (Winston, 1990) by the following five subtasks:

Educational Involvement (EI) (16 items) subtask is designed to measure ". . . the extent to which students have developed well-defined and thoroughly explored educational goals and plans and are active, self-directed learners" (p. 109).

Career Planning (CP) (19 items) subtask is designed to measure ". . . the degree to which students have synthesized knowledge about themselves and the world of work into appropriate career plans, both making an emotional commitment and taking steps now to allow realization of career goals" (p. 109).

Lifestyle Planning (LP) (11 items) subtask is designed to assess ". . . the extent to which students have established a personal direction to their lives and made plans for their futures that take into account personal, ethical and religious values, future family plans, and vocational and educational objectives" (p. 109).

Life Management (LM) (16 items) subtask is designed to measure ". . . the degree to which students structure their lives and manipulate the environment in ways that allow them to satisfy daily needs, meet personal responsibilities, manage personal finances appropriately, and satisfactorily meet academic demands" (p. 109-110).

Cultural Participation (CUP) (6 items) subtask is designed to assess ". . . a range of cultural interests and the degree to which students participate in traditional cultural activities" (p. 110).

APPENDIX C

Subtasks of the MIR Task of the SDTLI

The Developing Mature Interpersonal Relationships (MIR) Task is defined (Winston, 1990, p. 110) by the following three subtasks (each of which is described below):

Peer Relationships (PR) (13 items) subtask is designed to measure ". . . the extent to which students have developed relationships with peers characterized by independence, frankness, and trust and the degree to which they appreciate individual differences among friends and feel pressured to conform to peer-group norms or to conceal differences of opinion."

Tolerance (TOL) (9 items) subtask is designed to measure ". . . the degree to which students relate to members of different cultures, races, and backgrounds and show respect and acceptance."

Emotional Autonomy (EA) (8 items) subtask is designed to assess ". . . the degree to which students express a need for continous reassurance and approval from others and the extent of independence from parents for direction in decision making."

APPENDIX D

Consent Letter

Dear Student:

I am a Ph.D. candidate conducting a study for a doctoral dissertation to examine the relationship of career decision certainty to student psychosocial development. Your cooperation throughout the next fifty minutes during today's class period to complete a Demographic Questionnaire, the Certainty scale of the Career Decision Scale (CDS), and three task measures from the Student Developmental Task and Lifestyle Inventory (SDTLI) is valuable and appreciated.

No deception is involved in this study. Confidentiality of responses will be maintained. Participants will upon request be provided with a copy of the final results.

Before participating in this study to provide data about the relationship between career decision and student psychosocial development, please print and sign your name in the blanks below.

Sincerely,

Michael D. Zlatos
Doctoral Candidate
Principal Investigator
Department of Counseling
Indiana State University
Terre Haute, IN 47809

Dr. William R. Barratt
Asst. Prof. Counseling
Dissertation Adviser
Department of Counseling
Indiana State University
Terre Haute, IN 47809

_____
Participant's Name
(please print)

_____
Participant's Signature

_____
Today's Date

APPENDIX E

Self-Guided Instructions

On Side 1 of the green NCS scoring answer sheet, you will see the section for "name" in the upper left-hand corner. Please note the following:

(a) Do not list your social security number in the section marked "student identification number".
(b) Do not fill in data for any section on your answer sheet unless instructed to do so.

Print your name in the boxes provided in the following order; last name, first name, and middle initial. If you have no middle initial, write a "0" in the box and blacken in the circle which corresponds to "0". Now, blacken in the circles which correspond to the letters of your name. Refer to the verticle sections marked "class", "sex", and "term" but only complete the section marked "sex". Blacken in an "M" if you are a "male" or an "F" if you are a "female".

Fill in boxes 1 to 4 in the lower left-hand corner of side 1 of your answer sheet by blackening in those circles which correspond to the following sections:

For box 1, blacken in the "0" in the 1st column and then blacken in those circles in the 2nd and 3rd columns which correspond to your age. For example, if you are 19 years of age, then blacken in those circles which correspond to 0, 1, and 9.

For box 2, blacken in three "zeroes" if you have not attended another college prior to your enrollment at ISU; but, blacken in three "ones" if you have attended another college prior to your enrollment at ISU.

For box 3, blacken in the "0" in the 1st column and then blacken in those circles in the 2nd and 3rd columns which correspond to the number of hours your are currently enrolled in. For example, if you are currently enrolled in 12 hours, then blacken in those circles which correspond to 0, 1, and 2.

For box 4, blacken in those circles which correspond to the total number of "earned" hours you have completed at ISU. Do not include course hours which you have tested out of. Also, do not include the hours you have listed in box 3 (current hours) in box 4 (completed hours). For example, if you have completed 26 semester hours at ISU, then blacken in those circles which correspond to 2 and 6.

General Instructions

Do not write or make marks anywhere in the test booklets given you and do not bend, fold, or tear these materials because they have to be reused. In addition, take special care:

(a) to erase any and all stray marks made on your answer sheet,
(b) not to bend, fold, or crumple your answer sheet in any way, and
(c) to completely and neatly blacken in the circle of your choice for each item (that is, do not blacken in just half of the circle and try not to make marks outside of the circle);

otherwise, this will distort the information which is read from it by the computerized scanners.

Test Instructions

Record your responses to the first two items of the Career Decision Scale (CDS) on the GREEN answer sheet. Items not used in this test have been marked out. Place your green answer sheet inside the test booklet of the CDS and put it aside when you have finished.

Record your responses to items of the Student Developmental Task and Lifestyle Inventory (SDTLI) on the BLUE answer sheet. Items not used in this test and on your answer sheet have been marked out. Make sure that SDTLI item responses correspond to the numbers on your blue answer.

When you have completed the CDS and the SDTLI, examine your answer sheets for completeness and correctness. On your "GREEN" answer sheet, make sure that you have:

(a) listed and blackened in the letters of your name,
(b) marked your gender ("M" or "F"),
(c) completed boxes 1 to 4,
(d) completed only the first two items of the CDS, and
(e) marked only one choice for each item.

On your "BLUE" answer sheet, make sure that you have:

(a) listed and blackened in the letters of your name,
(b) completed the remaining items of the SDTLI, and
(c) marked only one choice for each item.

When completed, turn in the CDS and SDTLI booklets, the green and blue answer sheets, the self-guided instructions, and any pencils provided for you by the test administrator.

APPENDIX F

Demographic Questions

Name (Blacken in the circles which correspond to the letters of your name.)

Gender (Blacken one circle): (M) Male (F) Female

(Blacken in the appropriate circles which correspond to you.)

Box 1- Age

Box 2- Transfer status

Box 3- Number of hours currently enrolled

Box 4- Total number of (earned) hours completed

APPENDIX G

Test Administrator's Instructions

Read the consent letter attached to the first page of your packet as I will now read it to you (see Appendix D, Consent Letter).

If you agree to participate, please pass your signed consent forms forward. If you do not want to participate, please pass your packets forward.

Those who agree to participate may now examine your packets. Each packet contains self-guided instructions. Do not write in your test booklets. Record all responses on the separate answer sheets provided for you. Please read and carefully follow the instructions in your packet. Test-taking speed is not as important as is following the instructions as directed and accurately recording your responses.

You may now begin reading the self-guided instructions in your packet and follow them as directed. Feel free to ask any questions during the test administration procedure.

When you have completed the CDS and the SDTLI, examine your answer sheets for completeness and correctness. On your "GREEN" answer sheet, make sure that you have:

(a) listed and blackened in the letters of your name,
(b) marked your gender ("M" or "F"),
(c) completed boxes 1 to 4,
(d) completed only the first two items of the CDS, and
(e) marked only one choice for each item.

On your "BLUE" answer sheet, make sure that you have:

(a) listed and blackened in the letters of your name,
(b) completed the remaining items of the SDTLI, and
(c) marked only one choice for each item.

When completed, turn in the CDS and SDTLI booklets, the green and blue answer sheets, the self-guided instructions, and any pencils provided for you by the test administrator. Thank you for your participation!

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