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Relations Between Social-Environmental Characteristics of Families and Career Decision/Indecision of Secondary Tech Prep Students

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RELATIONS BETWEEN SOCIAL-ENVIRONMENTAL CHARACTERISTICS OF FAMILIES AND CAREER DECISION/INDECISION OF SECONDARY TECH PREP STUDENTS

by

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CERTIFICATE OF APPROVAL

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DEDICATION

This dissertation is dedicated to the memory of my parents and the future of my children.

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TABLE OF CONTENTS

APPENDICES:

LIST OF TABLES

ABSTRACT

Relations Between Social-Environmental Characteristics
of Families and Career Decision/Indecision
of Secondary Tech Prep Students

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The study examined the relations of social-environmental characteristics of families and demographic variables on career decision/indecision of 425 secondary Tech Prep students in North Florida. Career decision/indecision was the dependent variable, measured by the Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1987). Predictor independent variables included social-environmental characteristics of families as measured by the Family Environment Scale (Moos & Moos, 1981). Other predictor independent variables included academic achievement (reading comprehension and mathematics), gender, economic disadvantage and race.

No significant mean differences were found by gender and by grade of Tech Prep students on the Certainty Scale or the Indecision Scale of the Career Decision Scale. There was no significant interaction between gender and grade level of Tech Prep students. The means indicated a middle range of certainty and a middle range of indecision. The expectation that the sample group of Tech Prep students would be more career decided by virtue of their selection of Tech Prep programs was not supported. It can not be known if without their Tech Prep participation, these students would have

been in a lower range of career certainty. The lack of significant differences by grade of Tech Prep students on the Certainty Scale and Indecision Scale gives rise to the concern that 12th-grade students are no more prepared than 11th-grade students to follow specific plans for their future careers.

The means of the students on the subscales of the Family Environment Scale indicated the highest mean on the subscale of Moral-Religious Emphasis and lowest mean on the subscale Intellectual-Cultural Orientation. The students' scores on the Family Environment Scale were in the middle range.

The profile of demographic variables was as follows. The Reading Comprehension normal curve equivalent scores (NCE) was 51.21 for the 11th-grade and 12th-grade Tech Prep students. The Mathematics mean NCE score was 50.95 for the students. The mean scores of students in this study were in the average range. These scores are not unexpected in that students in Tech Prep are recruited most heavily from the general education track. However, the Tech Prep benefit of higher level academic courses is not clearly indicated in these average GTAT scores.

The total sample was 66.8% female and 33.2% male. The total sample was 76.2% White, 20.0% African American and 3.7% other. More than 70% of the sample either did not qualify or did not apply for free or reduced lunch, and could not, therefore, be classified as economic disadvantaged. Tabulation of gender, racial and economic distribution for Tech Prep students in Florida is needed.

Stepwise multiple regression analyses were used to explore the predictive ability of demographic variables on career decision/indecision and to explore the predictive ability of the ten subscales of the Family Environment Scale on career decision/indecision.

There were similarities in the predictor demographic variables in the prediction formula for career certainty and career indecision. Regarding the predictive ability of the demographic variables on Career Certainty Scores, a multiple R of .26 was computed and accounted for 6.5% of the variance. Race entered on the first step, correlated .20 with Career Certainty and accounted for 4.4% of the variance. White students had a slight tendency to be more certain regarding career decision-making. The relations of culture-specific variables of racial minorities on career decision/indecision was not examined in this study. All tests are, at least to some extent, culture-bound. Therefore, test scores by minorities can be negatively affected by White, middle class cultural contexts. Reading Comprehension was loaded on the second step and contributed 2.1% additional variance. Reading Comprehension correlated -.16 with Certainty. Students with higher reading scores tended to be slightly less certain of their career decisions. This study did not examine realism of career decisions. This study also did not examine the appropriateness of career choice with aptitude or achievement levels.

Regarding the predictive ability of the demographic variables on Career Indecision Scores, a multiple R of .21 was computed and accounted for 4.6% of the variance. The Mathematics Scores correlated .12 with

Indecision Scores and accounted for 1.2% of the variance. Race contributed an additional 1.7% of the variance. Class (grade) contributed 1.6% additional variance. African American students and 11th-grade students had a very slight tendency to be less sure of their career decisions.

There were similarities in the predictor variables in the prediction formula for career certainty and career indecision. Race contributed a significant amount of the variance in predicting career certainty and career indecision. There was a tendency for African American Tech Prep students to have more indecision and less certainty than White Tech Prep students. Cognitive variables contributed a significant amount of the variance. GTAT Reading Comprehension scores predicted career certainty while Mathematics scores were the variables predicting career indecision.

Regarding the predictive ability of the ten subscales of the Family Environment Scale on Career Certainty Scores, a multiple R of .273 was computed and accounted for 7.46% of the variance. Intellectual-Cultural Orientation contributed 5.37% of the variance and correlated .23 with Certainty. Achievement Orientation contributed 2.1% unique variance. Achievement Orientation correlated .17 with Certainty. Both the Achievement Orientation and Intellectual-Cultural Orientation scales were subscales measuring Personal Growth Dimensions.

Regarding the predictive ability of the ten subscales of the Family Environment Scale on Career Indecision Scores, Intellectual-Cultural Orientation correlated -.212 with Career Indecision and accounted for 4.5%

of the variance. Therefore, only one of the ten subscales of the Family Environment Scale accounted for variance regarding career indecision. The mirror image indicated higher scores on the Intellectual-Cultural Orientation subscale predicted career certainty and lower scores on Intellectual-Cultural Orientation predicted indecision.

The results of this study provided limited support for the predictive ability of demographic variables and family subscales on career certainty and career indecision. Clearly, a deeper and boarder understanding of the processes involved in adolescent career decision-making is needed.

CHAPTER I

INTRODUCTION TO THE STUDY

Individuals possess elements of choice regarding career decisions. Though the variety of work from which any given individual may choose varies from broad to narrow, one of the most highly prized freedoms in American culture is the right to decide what kind of work one will do.

It is expected in American society for individuals to choose their careers. The broad significance of work is recognized, including the social, cultural, and economic values of work to the individual and to society (Gowler & Legge, 1989; Osipow, 1983).

Familial influences are thought to be among the major factors affecting the career decision-making process (Lopez & Andrews, 1987; Osipow, 1983; Roe, 1956; Super, 1957). Career-undecided, as well as career-decided students are a heterogeneous group and many variables from decision-making, values, maturity, anxiety, to name just a few, can be examined in relation to career-decided/undecided students. Initiating, organizing, and implementing career planning programs and services for complex and hard-to-define students is a challenge for any educational leader (Gordon, 1981).

In our competitive global marketplace, educational programs are being developed for students in order to address the gap between job requirements

and the ability of the workforce to meet them (Florida Department of Education, 1991). A responsive strategy is Tech Prep. Tech Prep is a model that links school and work. Goals of this model include relating classroom learning to occupational needs and improving the quality of both education and the workforce ("Models That Link," 1991; Wonacott, 1992). Summaries of reform efforts, documentation of the need for Tech Prep, and steps to initiate Tech Prep are well substantiated (Oregon Tech Prep, 1992; Preparing Michigan, 1991; Western Illinois, 1991).

Students choose/decide to participate in secondary and postsecondary Tech-Prep programs. It is expected that Tech-Prep students are a heterogeneous group in many ways, including their statuses in the decision-making process. In this study, career decision/indecision is the dependent variable, measured by the Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1987). Predictor independent variables include social-environmental characteristics of families as measured by the Family Environment Scale (Moos & Moos, 1981). The Family Environment Scale is composed of ten subscales assessing three dimensions or domains of social-environmental characteristics of families. The three dimensions are (a) Relationship Dimensions with subscales of Cohesion, Expressiveness and Conflict, (b) Personal Growth Dimensions with subscales of Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, and Moral-Religious Emphasis, and (c) System Maintenance Dimensions with subscales of Organization and Control.

Other predictor independent variables include academic achievement, gender, economic disadvantage, and race. The preponderance of research has indicated career decidedness, career orientation, and career choice are predicted by academic ability (Luzzo, 1993; O'Brien & Fassinger, 1993).

The additional independent variables were selected because their effects are unclear. A proportion of research has indicated gender is not a predictive variable in determining career decidedness or career selection (Lunneborg, 1978; Niece & Bradley, 1979; Rojewski, 1994). However, other research has noted the effects of gender in considering or rejecting specific occupations (Church, Teresa, Rosebrook, & Szendre, 1992; Gottfredson, 1981), the effects of gender on career decision-making skills (Luzzo, 1993), career choice (O'Brien & Fassinger, 1993), and career decidedness (Graef, Wells, Hyland, & Muchinsky, 1985).

Some research has indicated economic status and race have no significant effects on career decision-making (Rojewski, 1994), whereas other research has found economic status (Krau, 1987; Gottfredson, 1981), and race to be related in complex ways to career dynamics (Thomas & Alderfer, 1989). The lack of clarity points to the need for investigating these factors.

Significance of the Research

The importance of career development is widely recognized. Career development occurs as a natural part of a child's general development. Thus, just as families exert a strong influence on a child's general growth, families

also exert a strong influence on a child's career decisions (Kinnier, Brigman, & Noble, 1990; Lopez & Andrews, 1987; Meekison, 1982).

The increasing complexity of society, in general, and the world of work, specifically, makes it more challenging for students to have the maximum freedom to choose a career that will enable them to be happy, self-sufficient adults, making positive contributions to society (Hoyt, 1984). Tech Prep is a curriculum model or strategy designed to address the career goals of the middle majority students, as well as the career needs of business and the larger society (Hull & Parnell, 1991).

Secondary Tech Prep students are worthy of separate research because these students have, with varying degrees of certainty, selected (decided) a Tech Prep career cluster. Tech Prep is a new curriculum model and is the subject of limited exploratory research. Some of the research has emphasized the characteristics of the model and neglected the characteristics of the population. The adaptiveness of decision-making styles may differ in relation to the limitations and advantages of a given population. Also, characteristics of a population may influence the success or failure of specific career development interventions (Blustein, 1987). Better appreciation of the Tech Prep population is important as career education programs are increasingly developed and implemented in schools.

Clearer understanding of the effects of social-environmental characteristics of families on career decision/indecision is of paramount importance. Social-environmental characteristics have a strong influence on

each family member (Moos, 1994). Family systems theory is an attempt to help further understanding of the familial influence on career decision-making (Bratcher, 1982). Two basic assumptions underlie family systems theory. First, the family is the primary and, except in rare cases, the most powerful emotional system individuals ever belong to, which shapes and continues to determine the course and outcomes of individual lives, and, secondly, family relationships are inclined to be extremely reciprocal, patterned and repetitive, and to have circular motion rather than linear motion (Carter & Orfanidis, as cited in Bratcher, 1982).

The advantage of viewing theory, research and practice in career decision-making from a perspective that explicitly incorporates relevant attributes of a given population is receiving recognition and emphasis (Blustein, 1987). In addition, students considering career goals while in school or nearing completion of their secondary education are likely more vulnerable than any other group to family systems forces (Bratcher, 1982).

Statement of Purpose

The purpose of the study was to assess, describe, and identify the relations between demographic variables and career decision/indecision and the relations between the ten dimensions or subscales of family environment, as determined by the students' perceptions, and career decision/indecision of 11th-grade and 12th-grade secondary Tech Prep students in selected high schools in North Florida.

Delimitation and Limitations

The following delimitation is associated with the study:

The participants are Tech Prep students in selected high schools in North Florida, making data applicable only to that population and sample.

The following limitations are associated with the study:

1. The meaning of key constructs held by the test developers may differ from the meanings held by students using a self-report method.

2. A portion of vocationally undecided students may view a vocational choice and a career as lacking salience to them (Jones & Chenery, 1980).

3. Many variables intervene between childhood experiences in the family and adolescent or adult behavior. Therefore, the relationships are often obscured and may be overdetermined (Orlansky, 1949).

4. Criteria for eligibility to participate in the school free or reduced lunch program is established by the United States Department of Agriculture and is an acceptable measure of economic disadvantage. However, not all eligible students apply to participate in the school free or reduced lunch program and can, therefore, be classified as economic disadvantaged in this study. Therefore, it is likely there are additional students in this category that were not identified because they did not make application to participate in the school free or reduced lunch program.

5. The sample Tech Prep students met the definition of Florida Tech Prep Students as determined by the respective school districts. Some variation exists among the districts in interpretation of the State definition.

Definitions of Terms

The following definitions of terms used in this study correspond to terms found in the literature:

1. Career choice or vocational choice: A process that takes place over an extended period of time and encompasses a series of related decision events, generally resulting in the elimination of some alternatives and the retention of others until, in due course, the narrowing down process results in a career choice or vocational choice (Crites, 1969).

2. Career development or vocational development: A construct which is inferred from the systematic changes that can be observed in vocational behavior over time (Crites, 1969).

3. Economic disadvantage: Determined by eligibility to participate in school free or reduced lunch program.

4. Florida Tech Prep student: A student in an articulated, sequential program of study, at grade level or above by grade 11 in mathematics, science, and communications (enrolled in level 2 or above courses) including a technical component, which leads to a minimum of a two-year postsecondary certificate or degree and/or apprenticeship program (Florida Department of Education, 1994).

5. Grade Ten Assessment Test (GTAT): A nationally normed achievement test designed to test achievement in the two basic areas of reading comprehension and mathematics (Florida Department of Education, 1995b).

6. Social-environmental attributes of families: A score measuring students' subjective appraisal of their family environment as determined by the Family Environment Scale (Moos & Moos, 1981).

7. Status in the decision-making process: Certainty and indecision scores/types as determined by the Career Decision Scale (Osipow, et al., 1987).

8. Tech Prep Program: A systematic educational reform initiative designed to assure that the middle majority of students, who typically fall into the "general education" track, are provided an enhanced academic program combined with technical job skills. Tech Prep education programs are established to (a) link local educational agencies and community colleges for the development of Tech Prep education programs which are designed as seamless "4 + 2" academic and vocational education programs leading to a 2-year associate degree, a 2-year vocational certificate, or apprenticeship program; (b) develop strong, comprehensive articulated links between secondary schools and postsecondary schools; (c) ensure the integration of higher level academic skills with technical job skills are part of a specific career program of studies; and (d) facilitate a system wide change based on

the Tech Prep instructional concepts of applied learning and occupational relevancy (Florida Department of Education, 1994).

Statement of Research Questions

The intent of this research was to examine the following research questions:

1) Question: Are there mean differences by gender and by grade of Tech Prep students on the Certainty Scale of the Career Decision Scale?

   Question: Is there a significant interaction between gender and grade level of Tech Prep students?

2) Question: Are there mean differences by gender and by grade of Tech Prep students on the Indecision Scale of the Career Decision Scale?

   Question: Is there a significant interaction between gender and grade level of Tech Prep students?

3) Question: What is the profile of scores on the ten subscales of Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, Moral-Religious Emphasis, Organization and Control as measured by the Family Environment Scale among 11th-grade and 12th-grade students in the Tech Prep program?

4) Question: What is the profile of Tech Prep students' demographic variables, including reading comprehension and mathematics, gender, economic disadvantage and race among 11th-grade and 12th-grade students in the Tech Prep program?

5) Question: Are Tech Prep students' demographic variables predictive of career certainty scores as measured by the Career Decision Scale?

6) Question: Are Tech Prep students' demographic variables predictive of career indecision scores as measured by the Career Decision Scale?

7) Question: Are 11th-grade and 12th-grade Tech Prep students' scores on the ten subscales of the Family Environment Scale predictive of career certainty scores as measured by the Career Decision Scale?

8) Question: Are 11th-grade and 12th-grade Tech Prep students' scores on the ten subscales of the Family Environment Scale predictive of career indecision scores as measured the Career Decision Scale?

Summary

Chapter I has presented significance of the research, statement of purpose, delimitation and limitations of the study, definitions and terms, and statement of research questions. The research examined the relations between demographic variables and career decision/indecision, and the

relations between the ten dimensions or subscales of family environment, as determined by the students' perceptions, and career decision/indecision of 11th-grade and 12th-grade secondary Tech Prep students in selected high schools in North Florida. The 425 students in the sample completed the Career Decision Scale (Osipow, et al., 1987) and the Family Environment Scale (Moos and Moos, 1981). Also, demographic data were collected.

Chapter II contains the literature review pertinent to the study. The review of literature is organized into three categories. First, the impetus to the development of Tech Prep programs and the target population are explored. Next, the multi-dimensional construct of career decision/indecision is examined with an emphasis on types of indecision, career decision-making taxonomies, career decision-making self-efficacy and vocational identity status. Finally, the role of the family in career development is considered. Also, a conclusion is provided.

Chapter III presents the research methodology and procedures. The design of the study, selection of site and sample, instruments, analysis procedures and summary are discussed.

Chapter IV reports the research findings. In addition, the research questions are presented with a summary.

Chapter V includes the conclusions. Discussion, implications and recommendations are addressed. Also, future directions are explored.

CHAPTER II

REVIEW OF RELATED LITERATURE

Career education in schools is a process that has gained momentum since the early 1970's and has reset instructional priorities. The goal of career education is to prepare individuals to select and engage in productive satisfying work throughout life. This process is called career development (Evans & Burck, 1992; Wonacott, 1992).

The following conclusion from the first Nationwide Study of Student Career Development (N = 32,000) addressed the statuses of career indecision that are costly both to individuals and to society:

> ...student-expressed need for help with career planning is in sharp contrast to the amount of help students feel they receive. This discrepancy is reflected in what students have (and more often, have not) done to prepare for the difficult career decisions that they face. Their lack of knowledge about the world of work and about the career planning process also testifies to their need for help...these vantage points for viewing student career development--what students say, do, and know--provide a consistent and dismal picture. If we were speaking of physical development, rather than career development, we would describe American youth as hungry, undernourished, and physically retarded. (Prediger, Roth, & Noeth, 1974, p. 103)

A later study summarized the trends in 1983 (N = 15,432) and concluded that, in general, schools are having a greater impact on student career development than they were in 1973. However, over 70% of the students in the 1983 survey said they want still more help with making career plans (Prediger & Sawyer, 1986). According to the Secretary's Commission on Achieving Necessary Skills (SCANS), more than half of U.S. high school students leave school without the knowledge or foundation required to find and hold a job. Ultimately, these students and businesses that employ them pay a very high price. Many of these students will never be able to earn a decent living and this will severely damage the quality of life in America. Lynn Martin, former Secretary of Labor, and the Commission (SCANS, 1991) composed of representatives from schools, businesses, and government drew three major conclusions:

1. All American high school students must develop a new set of competencies and foundation skills if they are to enjoy a productive, full, and satisfying life.
2. The qualities of high performance that today characterize our most competitive companies must become the standard for the vast majority of our companies, large and small, local and global.
3. The nation's schools must be transformed into high-performance organizations in their own right. (p. vi)

A further SCANS report (1992) spelled out the implications for educators who wish to provide their students with the SCANS competencies and foundation skills:

1. Teaching should be offered "in context," that is, students should learn content while solving realistic problems. "Learning in order to know" should not be separated from "learning in order to do."
2. Improving the match between what work requires and what students are taught requires changing how instruction is delivered and how students learn.
3. High performance requires a new system of school administration and assessment.
4. The entire community must be involved. (p. xvi)

The SCANS competencies, foundations, and implications encompass two key tenets of career education. The first tenet is infusion. Prerequisite knowledge and skills needed in the world of work should not be taught in isolation, but infused throughout the curriculum. Career information, career decision-making skills, academic basic skills, technological skills, information skills, and interpersonal skills should pervade all of education. The second tenet is a strong careers emphasis. Students should be able to see the direct relevance of instruction to their own future in the world of work. Relevance will increase motivation and learning.

A strategy responsive to those issues is Tech Prep (Wonacott, 1992). The Carl D. Perkins Vocational and Applied Technology Act of 1990

mandated the integration of academic and vocational education as a prerequisite for other federal vocational funding, including funding through the Tech Prep Education Act (Congressional Record, 1990). Tech Prep is a model that links school and work. Goals of this model include making education more relevant to employment and improving the quality of both education and the workforce ("Models That Link," 1991). Summaries of reform efforts, documentation of the need for Tech Prep, and steps to initiate Tech Prep are well substantiated (Oregon Tech Prep, 1992; Preparing Michigan, 1991; Western Illinois, 1991). The National Center for Research in Vocational Education (1994) labeled Tech Prep as "perhaps the most significant secondary and postsecondary initiative to develop in the United States in recent years." (p. 2)

Vocational choice and career development can be conceptualized as a decision-making process in which individuals seek out information, generate alternatives, and make decisions. Research in this area focuses on the process of decision-making and the characteristics of effective decision-makers. Of particular interest to researchers has been the question of what prevents effective vocational decision-making at the individual and group level (Meier, 1991). Why are some individuals uncertain/undecided regarding career choice and others are firmly committed? Are students who select Tech Prep programs decided or undecided? The theory that family patterns contribute in some way to career decisiveness/indecisiveness has long been acknowledged by most vocational theorists (Osipow, 1983). However,

theory and research focusing on clarifying the impact of current family process (social-environmental characteristics) on the career-related behavior of individual family members is sparse (Lopez & Andrews, 1987). If the theory and research are sparse, the practice is without a clear direction and the theory and research cannot be successfully operationalized in career development programs.

The review of literature is organized into three categories. First, the impetus to the development of Tech Prep programs and the target population are explored. Next, the multi-dimensional construct of career decision/indecision is examined with an emphasis on types of indecision, career decision-making taxonomies, career decision-making self-efficacy and vocational identity status. Finally, the role of the family in career development is considered.

Tech Prep's Target Population: The Middle Majority

Education has been compartmentalized into academic subjects removed from everyday life and built on blocks going from the concrete to the abstract. Students often do not learn in that linear mode, and if students are to be prepared for the world of work in the 1990's and beyond, different models, such as Tech Prep, must be implemented and appropriately evaluated (Anderson, 1990).

Tech-Prep/Associate Degree (TPAD) programs combine competency-based teaching, articulated programs between secondary and postsecondary institutions, and a solid foundation of applied academics. Delaware, Florida,

North Carolina, Oregon, Rhode Island, South Carolina, Wisconsin, and others are developing TPAD programs on a state-wide basis. Such programs draw upon the shared resources of high schools, community colleges, and the business community and can help to develop a world-class workforce in the United States. The prevailing recommendation is that high schools eliminate the unfocused general education program and replace it with a TPAD applied academics program to work alongside the college prep degree program and the high school diploma/vocational education program (Parnell, 1992).

Tech Prep/Associate Degree programs target the two middle quartiles of the typical high school student body in terms of academic talents, learning styles and interests. This so-called middle majority is also sometimes called the neglected majority (Hull & Parnell, 1991). Tech Prep/Associate Degree programs emphasize preparation for the middle range of occupations that require some postsecondary education and training, but not necessarily a baccalaureate degree. Of the 20 fastest growing occupations in the 1990's--nursing, computer science, law enforcement, office-machine service and repair, engineering technician, insurance and banking--all will require some form of postsecondary education and training, but only two will require baccalaureate degrees for entry. In addition to integrating academic and vocational subjects, the Tech Prep program places strong emphasis on articulation from secondary to postsecondary education (Hull, 1992).

Career Decision/Indecision: A Multidimensional Construct

It is accepted that career decision/indecision is a multidimensional construct. It is appropriate that individuals' career choices be in the fields of their interests and the appropriate aptitude levels. Indecision refers to the inability to select or commit to a particular course of action which will eventuate in preparing for and entering a specific occupation (Crites, 1969). Problems of indecision and categories or types of career indecision have been topics of many research studies. Specific problems of indecision include (a) the multipotential individual who makes too many choices and cannot designate one as a goal, (b) the undecided individual who cannot make any choice from among the alternatives, and (c) the uninterested individual who has made one choice but is uncertain about it, because it is not supported by an appropriate interest pattern.

Three categories of career indecision (Fuqua & Hartman, 1983) can be identified: (a) developmental career indecision in which the task is to facilitate and, perhaps, accelerate a natural developmental process involving self-exploration, exposure to career alternatives, and effective decision-making; (b) acute situational indecision resulting directly from environmental stresses and indirectly from an ineffective reaction to the environment in which the task often is to focus on the environmental stressor and the student's response to it while providing individual counseling of a problem-solving nature; and (c) chronic career indecision characterized by underlying

psychological dysfunction in which the task is to provide long-term therapeutic treatment.

Another classification (Lucas, 1993) contains five clusters/types of undecided students with variations in anxiety, salience given to work, relationship activities, locus of control, and decision-making styles. The paramount purpose of clustering undecided individuals is to provide differential career development intervention strategies for individuals with unique indecision patterns.

An additional typology of career indecision is called the Vocational Decision Status Model (Jones & Chenery, 1980; Wanberg & Muchinsky, 1992). The Vocational Decision Status Model categorized undecided individuals according to three dimensions: (a) the degree of individuals' indecision; (b) how comfortable individuals are with their levels of indecision; and (c) what reasons individuals have for their indecision. The Vocational Decision Scale was developed to measure these three dimensions. Decidedness was viewed as a continuous variable ranging from self-perception of thoroughly decided to thoroughly undecided. Also, comfort was viewed as a continuous variable. Individuals are undecided for distinctive reasons, and those reasons suggest distinctive causal patterns and interventions.

A further typology, which is derived from the Career Decision Scale, was used to investigate career indecision in adolescents from rural areas (Rojewski, 1994). Three types were developed to classify the variations in

career indecision. The three indecision types were tentatively decided-crystallizing preferences, transitional indecision, and chronic indecision. These types appeared to be applicable to young adolescents from rural areas who are in the early stages of career exploration, as well as to older adolescents.

The type one (tentatively decided-crystallizing preferences) was composed of adolescents who were engaged in vocational tasks considered developmentally appropriate and consistent with theory-based expectations for the exploration stage. The exploration stage (ages 14-24) is exemplified by an increasing examination of self and of self in context. Adolescents experiencing type one indecision had narrowed (crystallized) their career choices around a few career fields, but they were still uncertain about making explicit choices. Adolescents in type two (transitional indecision) were beginning to consider possible career alternatives and were moderately engaged in broad exploration. They reported relatively high levels of indecision, exhibited immature career competence, and were somewhat overwhelmed and concerned with the prospect of choosing a career. From a career development perspective, type two may comprise adolescents who are making a transition from the growth-awareness stage to the exploration stage. With time, these adolescents should be able to successfully handle vocational exploration tasks, but they may do so in a generally inferior manner without reinforcement, guidance, and support. Approximately 25% of the adolescents in this sample were categorized as chronically indecisive.

Type three individuals (chronic indecision) had not given a great deal of consideration to potential careers and experienced considerable concern and discouragement at the prospect of having to identify potential career options. These adolescents were affectively and cognitively immature, which compounded their difficulties. On the basis of these characteristics, adolescents in this group could be considered developmentally delayed or impaired (Rojewski, 1994).

Career Decision-Making Taxonomies

Several taxonomies have been developed from research and used in research in order to describe and examine individual differences in decision-making (Blustein & Phillips, 1990). Often emphasized is the understanding of career decision-making needs within the context of career development (Harren, 1979). Career decision-making models focus on the characteristics of the decision-maker and the developmental tasks confronting the individual at each stage or period of life. Career development models are broader in scope, and as a result, pay less attention to the internal psychological process the individual uses to successfully resolve developmental tasks.

A comprehensive, descriptive-prescriptive taxonomy (Harren, 1979), limited in its application to typical undergraduate college students, is composed of three distinct decision-making styles. The first two, rational and intuitive, each involve an internal locus of responsibility. The rational decision-making style is characterized by systematic and planful strategies with the ability to recognize the consequences of earlier decisions for later

decisions. The intuitive style is characterized by the use of fantasy, attention to present feelings, and a propensity to decide rapidly without much deliberation or information gathering. The third style, known as the dependent decision-making style, involves those strategies in which the person projects responsibility for decision-making toward others, generally family, friends, and authority figures.

Another often referenced taxonomy (Johnson, 1978) is based on the premise that most demographic and cultural factors are not very predictive of career choice, and that the unique styles of collecting and processing data may be the best predictors of career choice. This model or taxonomy has been used to describe and explain the process individuals use to make decisions. In this taxonomy, the gathering of information ranges across a continuum from systematic to spontaneous. Individuals who are systematic tend to use deliberate, planful, and logical decisional strategies. Characteristics of the systematic style include collective reaction to events, cautious psychological commitment and methodical goal orientation. Individuals who are spontaneous generally are global, affectively oriented, and nondeliberate in their decision-making. Characteristics of the spontaneous style include holistic reaction to events, quick psychological commitment and a flexible goal orientation. Individuals may exhibit differences in the means by which they process information in the decision-making process; at one end of the continuum, they tend to use internal or private means of analyzing information, whereas those at the other end of

the continuum prefer to "think out loud" in an external fashion. Therefore, there are four categories of decision-making styles in this taxonomy. The categories are (a) external-spontaneous, (b) internal-spontaneous, (c) internal-systematic, and (d) external-systematic.

Career Decision-Making Self-Efficacy

Research has related vocational self-efficacy to constructs such as perceived career options, career indecision, grades, career salience, and locus of control (Brown, Lent, & Larkin, 1989; Luzzo, 1993; Taylor & Betz, 1983; Taylor & Popma, 1990). Study exploring the relationship between career decision-making self-efficacy and vocational indecision has indicated that career decision-making self-efficacy is moderately and negatively related to vocational indecision indicating that the more undecided students are, the lower their career decision-making self-efficacy expectations. Career decision-making self-efficacy has also been moderately and negatively related to locus of control whereas a moderate positive relationship has been found between career decision-making self-efficacy and vocational decidedness and occupational self-efficacy. This moderately strong and positive relationship indicates that students who are more vocationally decided also express more confidence in their ability to complete career decision-making tasks. The moderately positive relationship found between the two measures of career self-efficacy indicate that confidence in one's ability to finish the educational and training requirements for occupational

entry coincides to some degree with confidence in one's ability to conclude career decision-making tasks (Taylor & Popma, 1990).

Self-efficacy theory (Bandura, 1977, 1986) has been examined in relationship to career development (Brown, et al., 1989; Church, et al., 1992). Self-efficacy theory (Bandura, 1977, 1986) hypothesizes that self-efficacy expectations, that is personal beliefs about one's ability to successfully perform particular behaviors, influence initiation of behavior, persistence in the face of obstacles, effort, and achievement. Therefore, self-efficacy will impact activity choices, effort, and persistence if one perceives that important incentives or values will be met by choosing or performing the activity. The moderating effects of academic self-efficacy beliefs on the relationship of scholastic aptitude to academic achievement (grade point average) and persistence (retention) has been explored with secondary and postsecondary students. Self-efficacy beliefs generally have facilitative effects on academic performance and persistence, although the nature of these effects depended on how self-efficacy was operationalized (Brown, et al., 1989; Church, et al., 1992).

Among the conclusions drawn from research (Church, et al., 1992) are the following: (a) self-efficacy relationships and gender differences exist at both the level of specific occupations and the aggregate level; (b) students' self-efficacy expectations (i.e., beliefs about their ability to learn to successfully do specific occupations), interests and perceived incentives satisfaction for specific occupations predict their willingness to consider the

occupations; (c) students' generality of self-efficacy (i.e., the range of occupations for which they feel efficacious) are related to the range of occupations they deliberated but not to their aptitude; and (d) both males and females report greater self-efficacy and willingness to consider occupations dominated by their own gender, with females showing a greater tendency to reject occupations dominated by the opposite gender.

Secondary students have been the subject of less career development research than postsecondary students. However, a recent study with eighth grade students examined the way in which they systematically organize vocational aspirations within circumscribed attitudinal boundaries (Lapan & Jingeleski, 1992). In this study, self-efficacy research was linked with a developmental theory of occupational aspirations (Gottfredson, 1981) to examine how junior high school students systematically constrict career expectations and decisions within circumscribed attitudinal boundaries. Three boundary-conditions, sex type, prestige level, and effort, were used to demarcate an area in which an individual is more willing to consider vocational alternatives. The "self-defined social space" was studied at the level of naturally occurring clusters across possible fields of employment. This may represent systematic ways in which eighth graders orient themselves to the world of work and embrace or rule out career opportunities (Lapan & Jingeleski, 1992).

Vocational Identity Status

Support has been provided (Blustein & Phillips, 1990) for the proposition that variations in decision-making style are associated in meaningful ways with differences in ego identity status in late adolescence. Individuals who have achieved a stable identity tend to use rational, planful, and systematic decision-making strategies. Those individuals whose identity status is foreclosed tend to rely on dependent strategies and do not endorse systematic and internal strategies but rely on nondeliberate solutions to decision-making. Individuals in the diffusion status tend to rely on intuitive and dependent styles exhibiting an absence of systematic and internal styles and an inclination to avoid decision-making situations. The moratorium status was not consistently associated with variations in decision-making styles for individuals but was modestly associated with intuitive and dependent decisional strategies. The findings offer some potentially useful implications for intervention. For example, findings provide a conceptual framework for the treatment of dependent decision-making, which has been most consistently associated with maladaptive vocational outcomes. Given the strong relationship between the foreclosure status and dependent decision-making, one plausible direction for intervention may be to assess the breadth of dependency and to provide an integrative intervention, encompassing both vocational and nonvocational domains of one's identity, that addresses a client's unexamined adoption of parental beliefs. The unexamined adoption of parental attitudes in the identity formation process is thought to have a

deleterious influence on decision-making. Systematic and internally derived decisional strategies are facilitated by deliberate psychological interventions.

The relationship between vocational identity and the concepts of consistency and differentiation has been the emphasis of research (Holland, 1985; Leung, Conoley, Scheel, & Sonnenberg, 1992). Vocational identity is the degree to which an individual possesses a clear and stable picture of goals, interests and abilities. A clear vocational identity is exhibited by the narrowing of aspirations to a few occupational goals and having confidence in career decision-making related to vocational choice. A poor vocational identity is related to the presence of multiple, disparate occupational goals, and a lack of confidence in decision-making related to vocational choice. Correlation techniques have been used to examine the relationship among vocational identity, consistency, and differentiation. The results indicated that vocational identity was not related to consistency or differentiation. There are at least three possible explanations for the lack of a relationship between vocational identity, consistency, and differentiation: (a) the three constructs may actually measure different phenomena; (b) the instruments used may be inaccurate; (c) the sample population used (academically superior high school juniors) in the study could be at a unique developmental point that caused their vocational identity, consistency, and/or differentiation to be unstable.

The relationship between individual differences among adolescents in their identity exploration and the interaction patterns of their families has also been the emphasis of research. The focus is based on the developmental conception of the family that emphasizes the importance of individuation, comprised of individuality and connectedness. Both individuality and connectedness are seen as important for the emotional health, well being, and competence of the family members (Grotevant & Cooper, 1985).

Role of the Family

Prior to the 1900's, career decision-making was characterized by a strongly deterministic view of individuals. Part and parcel of this deterministic perspective was that vocational decision-making was considered a discrete event, and limited attention was directed to antecedents and consequences of a given career decision, to changes over time, or to the decision-making process itself (Phillips & Pazienza, 1988, chap. I).

The deterministic view was radically revised when the dictum was issued that a wise choice of career depended on the following three factors:

(1) a clear understanding of yourself, your attitudes, abilities, interests, ambitions, resources, limitations, and their causes;

(2) a knowledge of the requirement and conditions of success, advantages and disadvantages, compensation, opportunities and

prospects in different lines of work; (3) true reasoning of the relations of these two groups of facts. (Parsons, 1909. p. 5)

It was stressed that an adolescent needs help on all three of these factors (Parsons, 1909). An expansion of this dictum led to increased attention directed to the antecedents and consequences of career decisions (Phillips & Pazienza, 1988, chap. 1).

A responsive, comprehensive career development model (Super, 1957) delineated a continuous process of development characterized by a succession of career patterns and life stages. The model included five life stages with approximate age limits — growth (birth to age 14), exploratory (ages 15-24), establishment (ages 25-45), maintenance (ages 45-64) and decline (age 65 and up). It is during the exploration stage many young people make career decisions. The processes of exploration, establishment, maintenance and decline are not only vocational, but involve all aspects of living. For example, adolescent exploration includes not only choosing an occupation but developing an understanding of self, trying adult roles, and finding a place for one's self in the community. The home is considered the first social institution contributing to vocational exploration and youth development. The family plays social, psychological and economic roles in the vocational development of its members. The family consistently has an important influence on the vocational development of the children.

A later model (Super, 1980) of career development, called the Life-Career Rainbow, highlighted the continuous interplay among the variety of

roles played by an individual in the different arenas of life throughout the lifespan. Nine major roles of child, student, leisurite, citizen, worker, spouse, homemaker, parent and pensioner were distinguished. Decision points occur (a) before and at the time of assuming a new role, (b) at the time of relinquishing an old role, and (c) at the time of making significant changes in the nature of an existing role. Four major theaters or arenas in which these roles are enacted are home, community, school, and workplace. The fact that individuals play several roles simultaneously in several theaters means that occupation, family, community, and leisure roles impact each other. Success in one role facilitates success in others, and difficulties in one role are likely to lead to difficulties in other roles. The model focused on how the combination and sometimes overlapping of various roles and theaters may have conflictual or enriching effects.

The deterministic emphasis on earlier views has been replaced with a developmental perspective of the career decision-making process. Research related to career decision-making implies that certain individuals should produce higher quality decisions and encounter less decisional difficulty than others. Commonly hypothesized is the theory that the most debilitating cause of vocational indecision is the indecisive personality. The indecisive personality is the result of a life history of conflicting learning experiences which prevents the formation of a clear sense of self, and consequently, the inability to proceed in any type of decision-making. Research toward identifying and explaining these characteristics and situational factors that

affect the quality and ease of decision-making is receiving increased emphasis and priority. Of great importance are the individual and situational factors that may impede or facilitate decisional and developmental progress (Phillips & Pazienza, 1988, chap. 1).

Members of individuals' immediate families make up their primary reference groups and exert the most pervasive and durable influences on development. The time-extended impact of the family experience has a relevance for career development that becomes more distinct as the growing child moves beyond the home into the competitive school environment, enters peer group settings, and approaches career decision-making points. Establishing dependable empirical relationships between family experience and subsequent career decision-making is not straightforward. A matrix of interacting causal variables generally exists, and isolating the effects of predictors of career patterns is difficult (Borow, 1984). However, the role of the family cannot be over-estimated. Parents are the first and most significant models of behavior. The influence of parents endures and is often ineradicable. Parents play pervasive roles in the lives of their malleable children (Cohen, 1980).

Family systems theory is a conceptual way of viewing the family that is gaining widespread attention because the theory helps to further understanding of the interrelatedness of many factors that influence essentially every aspect of an individual's life, including career choice and career decision-making. Family systems theory is rooted in general systems

theory and combines elements of both psychological and sociological approaches. The family is viewed as a unit and the family establishes and maintains a type of character or predictable structure. Issues of separation, individuation, personal autonomy, religion, prestige, status and service to others are part of the character or climate of the family. These issues are seen as influences or variables on career decision-making (Bratcher, 1982). The patterns of family relationships are akin to all other patterns in relationships. The differences are displayed in intensity (Bowen, 1978).

The character or social climate of a particular family is unique and gives the family unity and coherence. The family social climate has strong influences on family members and affects each member's behavior, feelings and growth. The Family Environment Scale is an example of a social climate scale. The dimensions of the Family Environment Scale (Relationship, Personal Growth and System Maintenance) are related to outcome criteria including adaptation to transitions. Generally, environments promote qualities that correspond with their dominant aspects. For example, children in families that value achievement, independence, intellectual and recreational pursuits are likely to display more personal and social competence (Moos, 1994).

Differences in family environment or family climate may serve as predictors of career decision-making. From an applied point of view, inquiry about these differences and how best to facilitate decision-making and development is needed for occupational wellness. Achievement of

occupational wellness involves the integration of career identity and personal identity because an interdependent relationship exists between career identity and personal identity (Dorn, 1992). Counselors do not have to be family therapists to use a family systems approach. Also, the family systems approach does not require the presence of additional family members to be effective (Zingaro, 1983).

Differences in family environments of high and low-trait angry (the general tendency to become easily angered) college students has been examined. Trait Anger Scale scores have been found to be significantly correlated with independent measures of anxiety, hostility, and neuroticism among male and female college students. Students classified as high-trait angry described their family environments as significantly less emotionally expressive, less cohesive, more disorganized and more conflictual than did the low-trait angry counterparts, as measured by the Family Environment Scale (Lopez & Thurman, 1993).

The identity formation process has been related to adjustment and development for adolescents. Agreement seems to be emerging regarding the contributions of family relationship factors on the identity formation process. Specifically, study of the role of adolescent separation and parental attachment in the identity formation process is receiving emphasis and with varying consistency seen as predictors of identity formation, and of varying strength as predictors for males and females (Schultheiss & Blustein, 1994a).

Problems in vocational identity development may be viewed as an outcome of student anxiety and academic difficulties occurring within an existing family environment which is unable to provide appropriate support and influence due to its current level of emotional reactivity. However, there may be a reciprocal interaction in which low vocational identity causes parent-student conflict, student anxiety and performance difficulties, rather than vice-versa (Lopez, 1989). The contention that a balance between enmeshment and disengagement in the family is associated with healthy adolescent development has been examined with college students. Results of study provided limited support for Minuchin's assertion that a balance between enmeshment and disengagement in the family is associated with the development of a stable identity and the use of positive coping strategies by young adults. It is considered important that the total family profile be considered in order to understand family structural dynamics. A family milieu in which members are able to express and resolve conflict may be a central dynamic related to identify formation and the use of positive coping skills (Perosa & Perosa, 1993).

Contrary to previous findings supporting assumptions of structural family theory, (Lopez, Campbell, & Watkins, 1988) attitudinal dependence (sharing similar attitudes and beliefs with one's parents), and not attitudinal independence, have been positively associated with development and adjustment for females. For males, a different pattern was found. This nonsignificant finding, when considered in view of the significant results for

the females, provides evidence for the need for additional study of gender differences in psychosocial development. Neither psychological separation nor parental attachment was found to be significantly related to adjustment. These are unusual findings, given the importance of these family relationship factors for development that have previously been identified both in theory and in research. For males, marginal support has been found for the conjoint relationship of psychological separation and parental attachment. The most salient factor in college student adjustment for males was conflictual independence (Schultheiss & Blustein, 1994b). This is in contrast to study supporting the relation of conflictual independence and personal adjustment within both male and female groups (Lopez, et al., 1988).

Research regarding the relationship between career indecision and family-of-origin enmeshment has indicated familial dynamics affect the decision-making process of individual family members. Enmeshment refers to an environment in which family members are undifferentiated from or overly dependent on each other. Enmeshment should not be misconstrued for emotional closeness. Individuation or differentiation is the process leading to the development of autonomous self-identities. Individuation is the opposite of fusion. Individuation from family-of-origin accounted for a significant but modest amount (2.8%) of the variance in career indecision. Triangulation is a form of fusion, in which one person is pulled in two different directions by the other two members of the triangle. Family-of-origin issues are related to career decision-making, but better understanding is needed (Kinnier, et al.,

1990). A study has reported no evidence for the general hypothesis that career indecision is related to family interaction patterns. Instead, the study reported that adolescents may develop an ability to make career decisions in two different kinds of family systems. The two different kinds of family systems are: (a) a flexible structure with strong emotional attachments that promotes early, stable decision making; or (b) an authoritarian structure with an emotional bonding pattern that permits individual freedom (Eigen, Hartman, & Hartman, 1987).

The effectiveness of a program for parents to help their adolescent sons and daughters develop a sense of agency regarding a career has been examined. The conclusion is that career planning with parents enables adolescents in grade 12 gain greater career certainty, less indecision, more career salience, and stronger ego identity (Kush & Cochran, 1993).

The application of a family systems perspective to the understanding of career decision/indecision is gaining momentum. This perspective is thought to be a more contextually sensitive view, requiring careful consideration of the interactional nature of career decision-making, particularly as decision-making occurs in the context of the family. The family environment is regarded as a primary and on-going context for the individuals' social and emotional growth. A primary premise of family systems theory is that certain family interactions enhance career decision-making, and others inhibit career decision-making (Lopez & Andrews, 1987; Lopez & Thurman, 1993).

Conclusion

Students often report that they need more help with making career decisions and with making the transition from school to work. The jobs of today and the jobs of tomorrow require higher level skills. Tech Prep is a model that links school and work as well as emphasizes higher level skills.

A review of the literature reveals that career decision/indecision is a multidimensional construct. There are several ways to categorize career indecision. In addition, several taxonomies have been developed in order to describe and examine individual differences in decision-making. Self-efficacy theory, as well as vocational identity status, have been examined in relation to career development.

Family systems theory holds that the family has a type of environment, predictable structure or climate. This environment is thought to influence aspects of family members' lives, including career choice and career decision-making. Differences in family environment may serve as predictors of career decision or career indecision.

CHAPTER III

RESEARCH METHODOLOGY AND PROCEDURES

This chapter describes the research methodology and procedures used in this study. The chapter is divided into design of the study, selection of site and sample, instruments, data analysis, and summary.

Design of the Study

This study utilized correlational design to assess the relations between demographic variables and career decision/indecision and the relations between the constructs of social-environmental characteristics of families and career decision/indecision. Correlational research is a nonexperimental design. The relations between the constructs are examined, without suggesting direct cause-and-effect relationships. The constructs (variables) are not manipulated (McMillan & Schumacher, 1993).

Selection of Site and Sample

Meier (1991) concluded from his extensive review of the literature related to vocational behavior that college students constitute most of the samples used in vocational research. Three of his recommendations are the study of vocational choice variables in non-college populations should be a high priority; large enough sample sizes should be used to detect the effects commonly found in vocational behavior research; and valid behavioral measures of vocational constructs, such as career indecision, should be used

instead of developing new self-report scales. These recommendations were followed in designing this study.

Caution must be exercised and consideration given to the impact the study may have on the students and the families in which they live. Some students and families have described family systems or family climate research itself as interventions in their lives, destructive for some and beneficial for others (Bussell, Matsey, Reiss, & Hetherington, 1995). In efforts to counterbalance those risks, information was given regarding why the students were selected and why the information was being collected. Students were informed that they may withdraw their consent and discontinue participation in the study at any time without any penalties or explanations required. Students were advised that while a profile of each student is compiled, the profile itself is anonymous. Students were told that when the study is completed, written feedback would be provided to the Tech Prep school contact individuals. Students were treated with respect and informed that it is hoped the study will contribute to program improvement in career development and assist future students in meeting their personal and career goals. However, students were told frankly that the study would probably not change the way career development services are delivered to them.

The sample for this study included 425 students in 11th-grade and 12th-grade who have applied for and are participating in a Tech Prep program. Robert Smith, Executive Director of the Northeast Florida

Educational Consortium, and Tim Starling, Baker County School District Superintendent, facilitated the study by making initial contacts with the superintendents in the selected school districts (Appendix A and Appendix B). The sample Tech Prep students met the definition of Florida Tech Prep Students as defined on page seven of this report and determined by the respective school districts. Tech Prep students were selected in the following ten North Florida counties: Alachua, Baker, Bradford, Clay, Columbia, Dixie, Flagler, Gilchrist, Hamilton, and Putnam. Nonprobability sampling (i.e., convenience or availability sampling) was used. The number and percentage of the sample by the twelve secondary schools are shown in Table 1:

Table 1

Number and Percentage of Sample by Secondary School

School	n	P
Bell High School	28	6.6
Baker County High School	90	22.2
Bradford-Union Vo-Tech	18	4.2
Clay County High School	11	2.6
Columbia County High School	11	2.6
Dixie County High School	17	4.0
Flagler-Palm Coast High School	62	14.6
Hamilton County High School	37	8.7
Middleburg High School	28	6.6
Newberry High School	15	3.5
Palatka High School	73	17.2
Santa Fe High School	35	8.2
Total	425	100.0

Participating students were self-classified into eight Tech Prep programs as shown in Table 2:

Table 2

Grade Number and Percentage of Sample by Tech Prep Program

TECH-PREP PROGRAM	n		P	
	11	12	11	12
Agribusiness	25	22	5.9	5.2
Business Technology	122	75	28.8	17.7
Construction Technology	0	5	0	1.2
Electronics	5	6	1.2	1.4
Family & Consumer Science	9	6	2.1	1.4
Health Occupations	39	61	9.2	14.4
Public Service	13	9	3.1	2.1
Technology Education	15	12	3.5	2.8

Instruments

Self-Report Scales

Both instruments used in the study are self-report scales. The Career Decision Scale (Osipow, et al.,1987) is an individual's report of personal feelings toward career decision-making. The Family Environment Scale (Moos & Moos, 1981) is an individual's report as a knowledgeable informant and family member of family relationships. There are advantages to utilizing family members as sources of information concerning the dynamics of family relationships. According to Cook and Goldstein (1993),

> Family members see each other behave in a variety of situations and may be able to differentiate cross-situational stabilities from situational effects on each others' behavior. Family members also observe each other over an extended period of time and therefore may be able to differentiate temporally stable from temporally unstable behaviors. Finally, family members observe behaviors that are not displayed in public and that are therefore not available to outside observers. (p. 1377)

A latent variable modeling approach to evaluate rater reliability and bias in mother, father and child ratings of negative parent-child relationships has been used. Conclusions are that ratings by family members hold a significant "true score" component that correlates with observer ratings of parental behavior. However, other research (Waterman, 1982) has concluded that self-report measures from adolescents and/or parents are subject to errors of memory, defensive distortion, and conscious impression management. Adolescents are, of course, not immune to subject effects and may alter their responses. There may be positive self-presentation, social desirability, or a belief that certain responses are expected, which may affect the results. The novelty effect may also influence results (McMillan & Schumacher, 1993).

A pilot study was conducted at Baker County High School to ascertain whether there were any problems in the use of the instruments or procedures. None of the students seemed to experience any difficulty, lack

of understanding, or anxiety in completing the instruments. The instruments were completed in approximately forty minutes.

Passive Parental Consent

To obtain parental consent, a local contact as each site distributed the student permission forms/informed consent to prospective participating students for delivery to parents asking them to give written notification if they did not want their children to participate (Appendix C). The forms indicated students were free to withdraw their consent and discontinue participation in the study without penalty. Giving parents the opportunity to forbid their children's participation was selected instead of written consent for participation because several recent students have documented that parents often fail to sign and return written consent forms because they do not have or take the time to read the forms, sign and return them, not because they object to their children's participation in research (Levine, 1995). It was believed requiring written consent of each parent would severely limit the sample in number, make the sample less representative, and significantly increase the costs of this study.

Administration of Instruments

Uniform procedures for administering the instruments were followed. The testing was completed within a three-month period. The instructions were read to ensure limited variation in administration of the instruments. Also, a form to gather demographic information, including Grade Ten Assessment Test (GTAT) scores, gender, economic disadvantage and race,

was used (Appendix D). GTAT scores and economic disadvantage statuses were provided by the respective school districts.

The two instruments were administered to the sample in a setting of no more than forty students. Students completed the two instruments in their Tech Prep classroom settings or in spaces at the school sites designated by the schools. To enhance reliability, standard testing conditions were maintained. All subjects received the same directions. The instruments were administered by the same person. Counterbalancing of the instruments was not utilized for several reasons. The Family Environment Scale was administered first in all testing sessions because the answer sheets are more complex and students do not write in the testing booklets. However, students do record their answers in the Career Decision Scale test booklets. The total testing time, including directions, is less than one hour. The instruments are designed for distinct domains. At the conclusion of the testing, students received a complementary snack.

Career Decision Scale

The Career Decision Scale was used to assess career decision/indecision. The Career Decision Scale total score has been used by researchers and practitioners to assess the quantitative trait of career indecision, not to indicate the qualitative type of undecided student (Savickas & Jarjoura, 1991). The Career Decision Scale was developed by Osipow, and his students, Carney, Winer, Yanico, and Koschier (1987). The scale is composed of nineteen items, the first eighteen items are of the Likert

type and response ratings range from 1-4, with a rating of 1 indicating low similarity of the student with the items and a rating of 4 indicating high similarity. Item 19 is an open-ended question which provides the participant with an opportunity to clarify or expand on prior items.

The Career Decision Scale is presented in a booklet which contains items and ratings. Scoring required the calculation of the total ratings for each of the two scales. To obtain the raw score for the Certainty Scale, items 1 and 2 were added and entered in the scoring box at the bottom of the booklet. The Indecision Scale of the Career Decision Scale consists of items 3-18. The ratings for items 3-18 are added and entered under the heading Total 3-18 as shown in Table 3 (Osipow, 1987).

Table 3

Sample Scoring Box

	Total 1-2	Total 3-18	Normative Group	Percentile
Certainty			High school	
Indecision			11th/female	

Normative group data are available by grades 9 through 12, college freshmen through seniors, and by gender. Normative group data for 11th-grade and 12th-grade students and males and females were used in this study. The summing of the numerical values that were circled for items 3-18 yielded an objective overall score for career indecision with higher numerical values representing higher degrees of career indecision. Items 1 and 2 indicated decidedness and were not included in the career indecision score.

Items 1 and 2 were scored in the opposite direction with higher numerical values representing greater decidedness. Items 3-18 have been found to be almost all negatively correlated with items 1 and 2, providing support for the construct and concurrent validity of the scale and its individual items (Slaney, 1985).

Scoring was tabulated and recorded in the test booklet. Referencing norms are contained in the manual, including normative information for high school students. The Career Decision Scale was appropriate for use with high school students of both sexes. According to Osipow (1987), the required reading level is modest and students making normal academic progress should have no difficulty in completing the scale in approximately fifteen minutes. It is appropriate to administer the Career Decision Scale in either individual or group situations.

As part of the interpretation, examination was first made of the Certainty Scale percentile score. High scores on the Certainty Scale indicated certainty of choice of career and school major. Certainty Scale scores which are at the 15th percentile or less were considered significant, indicating that the student is uncertain about the selection of career, major, or both. High scores on the Indecision Scale indicated indecision with regard to career choice. Scores which equal or exceed the 85th percentile were considered significant, suggesting a serious level of indecision. Combinations of high, low, and middle range scores and interpretive hypotheses for each combination are presented in Table 4 (Osipow, 1987).

Table 4

Interpretive Hypotheses for Certainty and Indecision Scores

Certainty	Indecision: High >84th percentile	Indecision: Middle 16-84th percentile	Indecision: Low >16th percentile
High >84th percentile	Possible invalid test data	Further need for assessment	Little felt need for intervention
Middle 16-84th percentile	Further need for assessment	Further need for assessment	Further need for assessment
Low >16th percentile	High likelihood of need for intervention	Further need for assessment	Possible invalid test data

Regarding reliability, two test-retest correlations of .90 and .82 for the Indecision Scale for two separate samples of college students have been reported. Item correlations for the Certainty and Indecision Scales ranged from .34 to .82, with the majority of correlations falling in the .60 to .80 range, according to the manual (Osipow, 1987). Test-retest reliabilities over a six-week period for the Certainty and Indecision Scale Items have shown item correlations ranging from .19 to .70, with total Career Decision Scale scores yielding a correlation of .70.

According to the manual, the Career Decision Scale has been employed in a large number of studies which have examined, directly or indirectly, various aspects of its validity. These studies generally fall into four major methodological approaches: group comparisons and correlations with

instruments measuring the construct of indecision; treatment studies; relationships with other personality variables of interest; and relationships with demographic variables. These studies have supported the validity of the Career Decision Scale.

The Career Decision Scale has received many positive reviews. In Test Critiques, (Slaney, 1985) the following is stated:

> ...measure seems likely to become one of a very small number of carefully developed measures that are available for use in studies on career indecision and intervention....Almost all the studies have used the scale as an unidimensional measure of career indecision by deriving a scale score by summing items 3-18. Used in this way, the scale has received a truly impressive amount of research attention since its initial development. The fact that the research support has provided substantial support for the test-retest reliability of the instrument and for its construct and concurrent validity is even more impressive. (pp. 141,142)

The Career Decision Scale was used in this study as an unidimensional measure of career indecision. A scale score was derived by summing items 1 and 2. Higher numerical values represented greater decidedness. Items 3-18 were summed with higher numerical values representing higher degrees of career indecision. Low numerical values represented the opposite, meaning higher levels of decidedness.

Family Environment Scale

The second instrument used in this study was the Family Environment Scale. The Family Environment Scale developed by Rudolf H. Moos and Bernice Moos (1981), was selected to measure familial characteristics. Norms for the Family Environment Scale were derived from 1000 normal families. The scale is a ninety item true/false instrument designed to measure the social-environmental attributes of various kinds of families. The Family Environment Scale contains ten subscales designed to appraise attributes and assess three underlying domains of Relationship dimensions, Personal Growth dimensions, and System Maintenance dimensions (see Table 5). Respondents did not assess each family member separately, but instead, gave an overall assessment of the entire family.

Table 5

Family Environment Scale: Subscales and Dimension Descriptions

		Relationship Dimensions
1.	Cohesion	the degree of commitment, help and support family members provide for one another
2.	Expressiveness	the extent to which family members are encouraged to act openly and to express their feelings directly
3.	Conflict	the amount of openly expressed anger, aggression, and conflict among family members
		Personal Growth Dimensions
4.	Independence	the extent to which family members are assertive, self-sufficient, and make their own decisions
5.	Achievement Orientation	the extent to which activities (such as school and work) are cast into an achievement-oriented or competitive framework
6.	Intellectual-Cultural Orientation	the degree of interest in political, social, intellectual and cultural activities
7.	Active-Recreational Orientation	the extent of participation in social and recreational activities
8.	Moral-Religious Emphasis	the degree of emphasis on ethical and religious issues and values
		System Maintenance Dimensions
9.	Organization	the degree of importance of clear organization and structure in planning family activities and responsibilities
10.	Control	the extent to which set rules and procedures are used to run family life

Cronbach's alpha was used to compute internal consistency reliability coefficients for each of the ten Family Environment Scale subscales. The lowest correlations respectively were .61 and .64 for Independence and Achievement Orientation. Cohesion, Intellectual-Cultural Orientation, and Moral-Religious Emphasis yielded correlations of .78, the highest measures of internal consistency. Conflict and Organization respectively yielded correlations of .75 and .76. All of these subscale coefficients are considered satisfactory according to Caldwell in Test Critiques (1985). Contradictory correlations were found by Roosa and Beals (1990). They found the internal consistency reliabilities of five subscales (Cohesion, Expression, Conflict, Organization and Control) of the Family Environment Scale to be below the acceptable level for research.

Test-retest reliabilities were computed for the 10 subscales for intervals of eight weeks, four months and twelve months periods. Reliability coefficients for six subscales ranged between .76 and .89 for the 12-months periods. Reliability coefficients for the remaining four subscales were .52, .63, .69 and .69. These coefficients are considered adequate.

Intercorrelations were also calculated for each subscale. The subscales that were positively correlated were Organization with Cohesion and Active-Recreational Orientation with Intellectual-Cultural Orientation. The negatively correlated subscales were Control with Independence and Cohesion with Conflict. Judging from the intercorrelations the subscales assess distinct, yet

related, characteristics of family social environments, according to Test Critiques (Caldwell, 1985).

In this study, a template was used for scoring the answer sheets, resulting in a separate score on each of the ten subscales. Appendix A, "Form R Raw Score to Standard Score Conversion Table," found in the manual, was used. Form R is the Real Form and is designed to help family members describe their current families as they perceive them. The Ideal Form and Expectations Form were not be used in this study. The manual is required in order to convert individual subscores to standard scores.

Demographic Data

In addition to the two instruments, Grade Ten Assessment Test (GTAT) scores were provided by the respective school districts. The GTAT is a norm referenced, nationally standardized achievement test. The GTAT measures the performance levels of Florida tenth graders in the areas of Reading Comprehension and Mathematics. The GTAT contains multiple choice tests, 60 items in Reading Comprehension and 48 items in Mathematics. The skills measured by the GTAT Reading Comprehension test include: constructing factual meaning; constructing inferential/interpretive meaning; and constructing evaluative meaning. The skills measured by the GTAT Mathematics test include: number and numeration theory; arithmetic operations and procedures; algebraic functions, operations, and procedures; geometric operations and procedures; probability and statistics; and mathematical reasoning.

The GTAT is administered in a designated testing period in Florida. Five scores are used in reporting GTAT results. The five scores are raw score, standard score, national percentile rank, normal curve equivalent and percent correct (Florida Department of Education, 1995a). Raw scores and normal curve equivalents were reported in this study.

The raw scores indicate the questions answered correctly and can be interpreted only by comparing the raw score with some standard such as the total number of questions for a test or with the raw scores earned by a comparison group. The raw scores are converted into norm-related scores such as standard scores and national percentile ranks. Standard scores are most often used to measure the achievement growth of students from year to year, and was, therefore, not reported in this study. The percentile rank scores, ranging from 1-99%, indicate percentage of students in the norm group whose scores fell below a particular student's raw score. Percentile rank scores state performance in relationship to the norm group. While the percentile rank is a useful and readily understood score for interpreting student achievement, the limitations are that percentile rank magnifies small differences in middle raw scores and reduces differences in very high and very low raw scores (Florida Department of Education, 1995a). Therefore, percentile ranks were not reported in this study.

The normal curve equivalent scores (NCEs) are derived from national percentile ranks and are normalized standard scores with a mean of 50. NCEs are equal interval scores, resulting from dividing the normal curve into

99 equal units. NCE units at various positions on the scale are equidistant. NCEs are within-grade standard scores, as opposed to across-grade standard scores. Percent correct scores denote the percentage of test questions students answer correctly (Florida Department of Education, 1995a) and were not collected in this study.

In addition to the two instruments and GTAT scores, gender, economic disadvantage and racial information were gathered. Demographic forms were developed.

Analysis Procedures

Descriptive statistics were computed on all of the independent and dependent variables included in the study. Correlational and multiple regression analyses were completed. Career decision/indecision was the dependent variable, measured by the Career Decision Scale. Predictor independent variables included social-environmental characteristics of families as measured by the Family Environment Scale. Other predictor independent variables included academic achievement as measured by GTAT, gender, economic disadvantage and race.

In order to evaluate the relative contribution of the ten subscales of the Family Environment Scale and the demographic variables, regression analyses were conducted. Each of the ten subscales and the each of the demographic variables were entered into the regression equation first using a stepwise method. The interaction term was entered after the other variables were evaluated for inclusion in the regression equation. The Statistical

Package for Social Sciences (SPSS) regression routine was used and variables were selected for inclusion based on a F-to-enter of .05 (Norusis, 1990). Stepwise multiple regression was used because of the lack of hierarchical ordering of the predictor variables.

Summary

The purpose of the study was to examine the relations between demographic variables and career decision/indecision and the relations between social-environmental characteristics of families and career decision/indecision of 425 secondary Tech Prep students in North Florida. Nonprobability sampling and passive parental consent were used. This study utilized correlational design to assess the relations between the constructs of social-environmental characteristics of families and career decision/indecision.

The Career Decision Scale (Osipow, et al., 1987) was used to assess career decision/indecision. The Family Environment Scale (Moos & Moos, 1981) was selected to measure familial characteristics. The Family Environment Scale contains ten subscales designed to appraise attributes and assess three domains of Relationship Dimensions, Personal Growth Dimensions, and System Maintenance Dimensions.

Descriptive statistics were computed on all of the independent and dependent variables included in this study. Correlational and multiple regression analyses were completed.

The presentation and analysis of the data are presented in Chapter IV. The research findings and research questions are discussed. The conclusions and discussion along with implications and recommendations are presented in Chapter V. Future directions are also explored.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The study examined the relations of social-environmental characteristics of families on career decision/indecision of secondary Tech Prep students. The Career Decision Scale and Family Environment Scale were used to gather quantitative data from the sample. Career decision/indecision were the dependent variables. Independent variables included social-environmental characteristics of families, level of academic achievement, gender, economic disadvantage, and race. Analysis included correlational and multiple regression analysis.

Career decision-making may be an extension of the family drama. The interactional patterns and interpersonal dynamics learned within the family environment are thought to be translated into the work environment. Work is anchored in the meaningful dramas of growing up in a family (Chusid & Cochran, 1989). If this is a true reflection, the value of understanding the effects of social-environmental characteristics of families is evident. Career development and career intervention must be responsive to the characteristics and special needs of the target population. The family may, indeed, provide not only the primary context, but also the on-going context for career decision-making (Dorn, 1992; Lopez & Andrews, 1987; Lopez & Thurman, 1993).

Research Questions

The purpose of the study was to assess, describe and identify the relations between the ten dimensions or subscales of family environment, as determined by the students' perceptions, and career decision/indecision of 11th-grade and 12th-grade secondary Tech Prep students in selected high schools in North Florida. Each research question is stated and the appropriate data are presented.

Question 1

1) Question: Are there mean differences by gender and by grade of Tech Prep students on the Certainty Scale of the Career Decision Scale?

Question: Is there a significant interaction between gender and grade level of Tech Prep students?

A two-way analysis of variance was computed with gender and grade level as the variates. An F of 0.11 was computed on the main effects of gender and was not significant at the .05 level. An F of 2.34 was computed on the main effects of grade level and also was not significant at the .05 level. The results of ANOVA are presented in Table 6.

Table 6

Analysis of Variance of Certainty by Grade and by Gender

Source	df	SS	MS	F	p
Main Effects	2	2291.46	1145.73	1.25	.287
Gender	1	97.54	97.54	.11	.744
Grade	1	2138.28	2138.28	2.34	.127
Gender x Grade	1	1913.07	1913.07	2.09	.149
Explained	3	4204.53	1401.51	1.53	.206
Residual	421	385449.29	915.56		
Total	424	389653.82	918.10		

There was no significant interaction between grade level and gender of the Tech Prep students.

The means for the Certainty Scale of the Career Decision Scale by grades 11 and 12 and by gender are shown in Table 7.

Table 7

Means for Certainty Scale by Grade and by Gender

	Grade 11	Grade 12	Total
Male	66.88 (81)	68.48 (60)	67.56 (141)
Female	69.89 (147)	62.42 (137)	66.29 (284)
Total	68.82 (228)	64.26 (197)	66.71 (425)

The mean Certainty score for 11th-grade students corresponds to a range of approximately 76-80 percentile. The mean Certainty score for the 12th-grade students corresponds to a range of approximately 68 percentile. Tech Prep students appear to be slightly more decided than the normative

samples of 11th-grade and 12th-grade students. However, these means indicate a middle range of certainty. Scores percentile 84 or higher indicate high certainty of choice of career. Certainty Scale Scores of percentile 15 or less indicate the student is uncertain about the selection of career and is considered low certainty.

Question 2

2) Question: Are there mean differences by gender and grade of Tech Prep students on the Indecision Scale of the Career Decision Scale?

Question: Is there a significant interaction between gender and grade level of Tech Prep students?

The analysis of variance of indecision by grade and gender are presented in Table 8. An F of 2.38 was computed on the main effects of gender and was not significant at the .05 level. An F of 3.79 was computed on the main effects of grade level and also was not significant at the .05 level. The results of the ANOVA are presented in Table 8.

Table 8

Analysis of Variance of Indecision by Grade and by Gender

Source	df	SS	MS	F	p
Main Effects	2	6010.67	3005.36	2.94	.054
Gender	1	2428.59	2428.59	2.38	.124
Grade	1	3875.52	3875.52	3.79	.052
Gender x Grade	1	11.19	11.19	.01	.917
Explained	3	6021.87	2007.29	2.00	.119
Residual	419	428177.07	1021.90		
Total	422	434198.94	1028.91		

The means for the Indecision Scale of the Career Decision Scale by grades 11 and 12 and by gender are shown in Table 9.

Table 9

Means for Indecision Scale by Grade and by Gender

	Grade 11	Grade 12	Total
Male	50.04 (81)	55.65 (60)	52.43 (141)
Female	44.64 (147)	50.95 (135)	47.66 (282)
Total	46.56 (228)	52.39 (195)	49.25 (423)

These means indicate a middle range of indecision. Scores percentile 85 or higher indicate serious levels of indecision with regards to career choice. Scores between the 16th and the 84th percentile indicate a middle range of indecision.

Question 3

3) Question: What is the profile of scores of Tech Prep students on the ten subscales of the Family Environment Scale?

The raw scores on the Family Environment Scale were converted to T scores. T scores have a fixed mean of 50 and a standard deviation of 10. The means and standard deviations of the Tech Prep students are presented in Table 10.

Table 10

Means and Standard Deviations of the Tech Prep Students on Subscales of Family Environment Scale

TOTAL	n	M	SD
Relationship Dimensions			
Cohesion	425	47.11	17.15
Expressiveness	425	45.36	11.50
Conflict	425	50.57	13.07
Mean Subtotal		47.68	
Personal Growth Dimensions			
Independence	425	48.14	12.17
Achievement Orientation	425	55.18	8.77
Intellectual-Cultural Orientation	425	43.31	12.30
Active-Recreational Orientation	425	51.62	10.62
Moral-Religious Emphasis	425	55.90	10.64
Mean Subtotal		50.83	
System Maintenance Dimensions			
Organization	425	51.24	11.30
Control	425	50.57	13.07
Mean Subtotal		50.91	

The highest mean was 55.90 on the subscale Moral-Religious Emphasis. The second highest mean was 55.18 on Achievement Orientation. The lowest mean was 43.31 on the subscale Intellectual-Cultural Orientation. The second lowest mean was 47.11 on Cohesion. The mean for the Relationship Dimensions was 47.68. The Relationship Dimensions measure how involved people are in a setting such as the family setting, how much they help each other, and how freely they express feelings. Low expressiveness of feelings may indicate closure or distortion in expressing

feelings. The mean for the Personal Growth Dimensions was 50.83. The Personal Growth Dimensions are related to encouragement or discouragement of personal growth. The mean for the System Maintenance Dimensions was 50.91. The System Maintenance Dimensions indicate how orderly and organized the family setting is, how clear it is in its expectations, how much control it maintains, and how responsive it is to change. The System Maintenance Dimensions may indicate how much change is accepted and the personal costs associated with change. However, caution should be exercised in examining means of the three dimensions because all scoring and interpretation of the Family Environment Scale is based on the subscales, not the dimensions (Moos, 1994; Moos & Moos, 1981).

Question 4

4) Question: What is the profile of demographic variables, including academic achievement (reading comprehension and mathematics), gender, economic disadvantage and race among 11th-grade and 12th-grade students in the Tech Prep program? The GTAT Scores by grade are presented in Table 11.

Table 11

GTAT Scores by Grade

	11TH GRADE			12TH GRADE			TOTAL		
	n	M	SD	n	M	SD	n	M	SD
Reading Comp.									
Raw Score	149	37.70	11.67	87	43.14	9.79	236	39.70	11.30
NCE	188	48.32	16.97	139	55.10	16.58	327	51.21	17.11
Mathematics									
Raw Score	149	21.45	7.76	89	24.83	8.01	238	22.71	8.01
NCE	188	49.63	17.22	141	52.71	17.39	329	50.95	17.33

The Reading Comprehension mean NCE score was 51.21 for 11th-grade and 12th-grade Tech Prep students. The Mathematics mean NCE score was 50.95 for 11th-grade and 12th-grade Tech Prep students. The normal curve equivalent scores (NCE), derived from national percentile ranks, are normalized standard scores with a mean of 50. Therefore, Tech Prep students' scores were slightly above the mean on the GTAT Reading Comprehension and Mathematics Tests.

The gender and racial demographic characteristics of the sample are presented in Table 12.

Table 12

Demographic Characteristics of Sample

	Gender			Race	
	Male	Female	Total		
Grade 11	81 19.1%	147 34.6%	228	White African American Other	176 (41.4%) 47 (11.1%) 5 (1.1%)
Grade 12	60 14.1%	137 32.2%	197	White African American Other	148 (34.8%) 38 (8.9%) 11 (2.5%)
Total	141 33.2%	284 66.8%	425	White African American Other	324 (76.2%) 85 (20.0%) 16 (3.70%)

The total sample was 66.8% female and 33.2% male. The total sample was also 76.2% white, 20.0% African American and 3.7% Asian American, Hispanic and Turkish. The percentage male and female and the racial composition for 11th-grade is fairly similar to the percentages for the 12th-grade Tech Prep students.

The economic disadvantage characteristics of the sample are presented in Table 13.

Table 13

Economically Disadvantaged as Determined by Free or Reduced Lunch

Grade	Recipient	Non-Recipient
Grade 11	61 (14.5%)	163 (38.7%)
Grade 12	51 (12.1%)	146 (34.7%)
Total	112 (26.6%)	309 (73.4%)

The percentage of economically disadvantaged 11th-grade students (14.5%) and the percentage of 12th-grade students (12.1%) result in a total of 26.6%. More than 70% of the sample either did not qualify or did not apply for free or reduced lunch.

Question 5

5) Question: Are 11th-grade and 12th-grade Tech Prep students' demographic variables predictive of career certainty as measured by the Career Decision Scale?

A stepwise multiple regression was computed with the demographic variables as the independent variables and the Career Certainty Scores as the dependent variables as shown in Table 14. A multiple R of .26 was computed and accounted for 6.5% of the variance. Race entered on the first step, correlated .20 with Career Certainty and accounted for 4.4% of the variance. White students had a slight tendency to be more certain regarding career decision-making. Reading Comprehension was loaded on the second step and contributed 2.1% additional variance. Reading Comprehension correlated -.16 with Certainty. Students with higher reading scores tended to be slightly less certain of their career decisions. No other variables met the criteria for inclusion in the analysis.

Table 14

Regression Analysis for the Prediction of Career Certainty

Step	Predictor Variable	df	F	R^2	R^2 Change	Simple *r*	β	p
1	Race	1, 316	14.577	.0441	.044	.20	.1810	.0002
2	Reading Comp.	2, 315	11.033	.0654	.021	-.16	-.1490	.0000

6) Question: Are 11th-grade and 12th-grade Tech Prep students demographic variables predictive of Career Indecision as measured by the Career Decision Scale?

Stepwise multiple regression was computed with Career Indecision as the dependent variable and the demographic and achievement variables as the independent variables. The results are shown in Table 15. A multiple R of .21 was computed and accounted for 4.6% of the variance. The math test was loaded on the first step and correlated .12 with Indecision and accounted for 1.2% of the variance. Race was loaded at step 2 and contributed an additional 1.7% of the variance. Class was entered on Step 3 and contributed 1.6% additional variance. No additional variables met the criteria for entering. GTAT Mathematics scores predicted career indecision in that higher GTAT Mathematics scores were associated with more indecision. However, this result is statistically significant, but probably not of practical significance. Also, African American students and 11th-grade students had a very slight tendency to be less sure of their career decisions.

Table 15

Regression Analysis for the Prediction of Career Indecision

Predictor Variable	df	F	R^2	R^2 Change	Simple *r*	β	p
Math	1, 316	4.022	.0125	.013	.123	.1581	.0457
Race	2, 315	4.924	.0303	.029	-.114	-.1477	.0078
Class	3, 314	5.068	.0461	.016	.091	.1270	.0019

There were similarities in the predictor demographic variables in the prediction formula for career certainty and career indecision. Race contributed a significant amount of the variance in predicting career certainty and career indecision. There was a tendency for African American Tech Prep students to have more indecision and less certainty than White Tech Prep students. Cognitive variables contributed a significant amount of the variance. GTAT Reading Comprehension scores predicted career certainty while GTAT Mathematics scores were the variables predicting career indecision. There was a slight tendency for Tech Prep students who had higher scores on GTAT to also have less certainty and more indecision regarding career decision-making. This study did not examine realism of career decisions. Also, this study did not examine the appropriateness of career choice with aptitude or achievement levels.

7) Question: Are 11th-grade and 12th-grade Tech Prep students' scores on the ten subscales of the Family Environment Scale predictive of career certainty scores as measured by the Career Decision Scale?

A stepwise regression was utilized with the ten subscales of the Family Environment Scale serving as the independent variables and the Certainty Scale of the Career Decision Scale serving as the dependent variable as shown in Table 16. A multiple R of .273 was computed and accounted for 7.46% of the variance. Intellectual-Cultural Orientation was entered on the first step and contributed 5.37% of the variance and correlated .23 with Certainty. Achievement Orientation was entered on the second step and contributed 2.1% unique variance. Achievement Orientation correlated .17 with Certainty. No other scales met the .05 level necessary for inclusion in the predictive formula. The Intellectual-Cultural Orientation corresponds to the degree of interest in political, social, intellectual and cultural activities. An example is how often family members talk about social problems. The Achievement Orientation is related to the extent to which activities (such as school and work) are cast into an achievement oriented or competitive framework. An example is how important individuals feel it is to do their best and "get ahead." Both the Achievement Orientation and Intellectual-Cultural Orientation scales were subscales measuring Personal Growth Dimensions. The Personal Growth Dimensions primarily reflect the linkages between the family and the larger social context. These scales are developed to measure the major ways in which a family encourages or inhibits personal growth (Moos & Moos, 1994).

Table 16

Regression Analysis for the Prediction of Career Certainty

Step	Predictor Variable	df	F	R^2	R^2 Change	Simple *r*	β	p
1	Intellectual-Cultural Orientation	1, 423	24.01	.054	.05	.23	.2129	.00
2	Achievement Orientation	2, 422	17.02	.075	.02	.17	.1459	.00

8) Question: Are 11th-grade and 12th-grade Tech Prep students scores on the ten subscales of the Family Environment Scale predictive of Career Indecision on the Career Decision Scale?

A stepwise multiple regression was computed with career indecision as the dependent variable and the ten subscales of the Family Environment Scale as independent variables as shown in Table 17. Only one score was included in the equation. Intellectual-Cultural Orientation correlated -.212 with Career Indecision and accounted for 4.5% of the variance.

Table 17

Regression Analysis for the Prediction of Career Indecision

Predictor Variable	df	F	R^2	Simple *r*	β	p
Intellectual-Cultural Orientation	1, 421	19.80	.04	-.21	-.2119	.00

In predicting career certainty and career indecision, the variable that was significant in both situations was Intellectual-Cultural Orientation, accounting for approximately 5% of the variance in predicting career certainty and approximately 4% of the variance in predicting career

indecision. Low correlation was found between Intellectual-Cultural Orientation and total scores on career certainty. There was a negative correlation between Intellectual-Cultural Orientation and career indecision. Achievement Orientation added significant amount of variance in predicting career certainty. The scales of Intellectual-Cultural Orientation and Achievement Orientation were subscales of the Personal Growth Dimension.

Summary

The purpose of the study was to assess, describe, and identify the relations between demographic variables and career decision/indecision and the relations between the ten dimensions or subscales of family environment, as determined by the students' perceptions, and career decision/indecision of 11th-grade and 12th-grade secondary Tech Prep students in selected high schools in North Florida. Each research question was stated and the appropriate data were presented.

Mean differences by gender and by grade of Tech Prep students on the Certainty Scale of the Career Decision Scale were not significant at the .05 level. There were no significant interaction between grade level and gender. In addition, mean differences by gender and grade on the Indecision Scale of the Career Decision Scale were not significant at the .05 level. There were no significant interaction between grade level and gender.

The means of Tech Prep students on the subscales of the Family Environment Scale were computed. The highest mean was 55.90 on the

subscale Moral-Religious Emphasis. The lowest mean was 43.31 on the subscale Intellectual-Cultural Orientation.

The profile of demographic variables, including academic achievement (reading comprehension and mathematics), gender, economic disadvantage and race among the 11th-grade and 12th-grade Tech Prep students was determined. The Reading Comprehension means for the 11th-grade and 12th-grade students were higher than the means for Mathematics. The 12th-grade students achieved higher means for Reading Comprehension and Mathematics than the 11th-grade Tech Prep students on the Grade Ten Assessment Test (GTAT). The total sample was 66.8% female and 33.2% male. The total sample was 76.2% White, 20.0% African American and 3.7% other. More than 70% of the sample either did not qualify or did not apply for free or reduced lunch.

In order to determine whether 11th-grade and 12th-grade Tech Prep students' demographic variables were predictive of career decision/indecision, multiple regression was completed. A stepwise multiple regression was computed with the demographic variables as the independent variables and the Certainty score as the dependent variable. A multiple R of .26 was computed and accounted for 6.5% of the variance. Race entered on the first step correlated .20 with Certainty and accounted for 4.4% of the variance. Reading Comprehension was loaded on the second step and contributed 2.1% additional variance.

Stepwise multiple regression was computed with Indecision as the dependent variable and the demographic and achievement variables as the independent variables. A multiple R of .21 was computed and accounted for 4.6% of the variance. The math test was loaded on the first step and correlated .12 with Indecision and accounted for 1.2% of the variance. Race was loaded at step 2 and contributed an additional 1.7% of the variance. Class was entered on Step 3 and contributed 1.6% additional variance.

In order to determine whether scores on the ten subscales of the Family Environment Scale were predictive of career decision/indecision, multiple regression was completed. A stepwise regression was also utilized with the ten subscales of the Family Environment Scale serving as the independent variables and the Certainty Scale of the Career Decision Scale serving as the dependent variable. A multiple R of .273 was computed and accounted for 7.46% of the variance. Intellectual-Cultural Orientation was entered on the first step and contributed 5.37% of the variance and correlated .23 with Certainty.

Stepwise multiple regression was computed with career indecision as the dependent variable and the ten subscales of the Family Environment Scale as independent variables. Only one score was included in the equation. Intellectual-Cultural Orientation correlated -.212 with Indecision and accounted for 4.5% of the variance.

Chapter V contains the conclusions and discussion. Implications and recommendations are also discussed. Future directions are explored.

CHAPTER V

CONCLUSIONS AND DISCUSSION

The study examined the relations of demographic variables and social-environmental characteristics of families on career decision/indecision of 425 secondary Tech Prep students in North Florida. Career decision/indecision was the dependent variable, measured by the Career Decision Scale (Osipow, et al., 1987). Predictor independent variables included social-environmental characteristics of families as measured by the Family Environment Scale (Moos & Moos, 1981). Other predictor independent variables included academic achievement, gender, economic disadvantage, and race. Correlational and multiple regression analyses were completed.

In order to evaluate the relative contribution of the ten subscales of the Family Environment Scale and the demographic variables, regression analyses were conducted. Each of the ten subscales and the each of the demographic variables were entered into the regression equation first using a stepwise method. The interaction term was entered after the other variables were evaluated for inclusion in the regression equation. The Statistical Package for Social Sciences (SPSS) regression routine was used and variables were selected for inclusion based on a F-to-enter of .05 (Norusis, 1990). Stepwise multiple regression was used because of the lack of hierarchical ordering of the predictor variables.

Profile of Tech Prep Students

Conclusions

The Tech Prep students in the study tended to be in the middle range regarding career certainty and career indecision. Significant mean differences by gender and by grade of Tech Prep students were not found on the Certainty Scale or the Indecision Scale of the Career Decision Scale. Also, there was no significant interaction between grade level and gender of the Tech Prep students on the Certainty Scale or the Indecision Scale.

The mean Certainty score for 11th-grade students corresponds to a range of approximately 76-80 percentile. The mean Certainty score for 12th-grade students corresponds to a range of approximately 68 percentile. Tech Prep students appear to be slightly more decided than the normative samples of 11th-grade and 12th-grade students. However, these are considered middle range scores.

The Certainty Scale and the Indecision Scale are inversely correlated (Osipow, et al., 1987). Therefore, finding a lack of significance on one scale and not the other would have been unusual. The Career Decision Scale was used in this study and has been used most often as a measure of degree of indecision, not as a classification of types of indecision. The mean indecision score for 11th-grade students corresponds to a range of approximately 45-50 percentile. The mean Indecision score for 12th-grade students corresponds to a range of 55-59 percentile. The Indecision percentiles are considered middle range scores.

The expectation that the sample group of Tech Prep students would be more career decided by virtue of their selection of Tech Prep programs was not supported. The students in this sample tended to be in the middle range regarding career certainty and career indecision. The lack of significant differences by gender may indicate gender equity but not in the most positive light because males and females were equally middle range in terms of career certainty.

The profile of scores of Tech Prep students on the ten subscales of the Family Environment Scale revealed the following. The highest mean on Moral-Religious Emphasis is perhaps typical of a conservative, religious rural North Florida or indicative of " impression management" -- the desire to "look good." The second highest mean on the subscale Achievement Orientation may indicate the students are more directed in their academic and/or vocational pursuits. It can not be known from this study if this sample of students is more achievement oriented than students who continue in a general curriculum track.

The students' scores on the Family Environment Scale were in the middle range. The Family Environment Scale has a mean of 50 and a standard deviation of 10. Therefore, the mean scores in this sample were approximately one-half standard deviation above the mean on the Moral Religious Emphasis subscale and on the Achievement Orientation subscale.

Regarding the profile of demographic variables, including academic achievement (reading comprehension and mathematics), gender, economic

disadvantage and race among 11th-grade and 12th-grade students in the Tech Prep program, the following information is aggregated. The GTAT Reading Comprehension scores and the GTAT Mathematics scores of the 11th-grade students correspond to a stanine of five. The GTAT Reading Comprehension scores and the Mathematic scores of the 12th-grade students also correspond to a stanine of five (Florida Department of Education, 1995a). The scores of students in this study were in the average range.

Over 66% percent of the sample was female. Over 76% were White and 20% were African Americans. Over 26% of the sample were recipients of free or reduced lunch, and therefore, classified as economic disadvantaged.

Discussion

Tech Prep programs are designed for the so-called middle majority or neglected majority of students. These middle majority students are the two middle quartiles of the typical high school student body and are not as well served by most secondary schools as the college prep/baccalaureate degree bound students. These students graduate from secondary schools without a clear direction and the competencies required to secure entry-level employment in a rapidly changing work environment (Hull & Parnell, 1991).

The expectation that the sample group of Tech Prep students would be more career decided by virtue of their selection of Tech Prep programs was not supported. It was not among the goals of this study to measure the

indicators of success of Tech Prep. However, a typical success indicator is the number of secondary students who complete sequential programs of study, combining high-level academic preparation in math, science and language arts with completion of a technical component leading to post-secondary training and viable careers. The students in this sample tended to be in the middle range regarding career certainty and career indecision. It can not be known if without their Tech Prep participation, these students would have been in a lower range of career certainty or if Tech Prep had influenced their career certainty or career indecision in any way.

Significant differences by gender were not found. Males and females were equally middle range in terms of career certainty. The lack of significant differences by grade of Tech Prep students on the Certainty Scale and the Indecision Scale gives rise to the concern that 12th-grade students are no more prepared that 11th-grade students to follow specific plans for their future careers. However, as previously stated, the sample Tech Prep students met the definition of Florida Tech Prep Students as determined by the respective school districts. Variation exists among the districts in interpretation and application of the State definition.

The GTAT Reading Comprehension scores and the GTAT Mathematics scores of the students in this study were in the average range. These scores are not unexpected in that students in Tech Prep are recruited most heavily from the general educations courses. However, the Tech Prep benefit of

higher level academic courses is not clearly indicated in these average range GTAT scores.

The FY 1994-95 Numbers Report: Division of Applied Technology and Adult Education (Florida Department of Education, 1996) reported 64,070 secondary students were enrolled in Tech Prep programs in Florida. No gender, racial or economic information is provided for the Tech Prep program. However, the ethnic distribution for all secondary students in Applied Technology programs indicated the following: (a) 807,108 White; (b) 315,841 African American; (c) 172,818 Hispanic; (d) 22,899 Asian/Pacific Islander; and (e) 3,316 American Indian/Alaskan Native. The Tech Prep sample in this study had less diversity and proportionately less African Americans than the Florida breakdown for all Applied Technology programs. Tabulation of gender, racial and economic distribution for Tech Prep programs is needed.

Implications

The Tech Prep model should facilitate students in following programs of study that will prepare them for specific career clusters. The programs of study should blend appropriate academics and appropriate skills with knowledge in particular career clusters (Hull & Parnell, 1991). In order for the Tech Prep model to prepare students for specific career clusters, students should have higher levels of certainty regarding career choice. Career development leading to career choice should be extended and flexible

(Crites, 1969) but students should be preparing for life and work (Hull & Parnell, 1991).

Goals of the Tech Prep model include relating classroom learning to occupational needs and improving the quality of both education and the workforce ("Models That Link," 1991; Wonacott, 1992). The partnership between and among schools, businesses and families should be strengthened if the goals of Tech Prep are to be achieved.

Tech Prep is founded on a solid academic foundation and students who meet the Florida Tech Prep State Definition must be enrolled in level two or above academic courses (Florida Department of Education, 1994). Higher academic achievement is part of increasing options and opportunities for the middle majority students. Schools districts should comply with the State definition. Educational leaders must be "keepers of the vision" and make sure everyone involved has a clear vision of what the Tech Prep program is intended to accomplish (Hull & Parnell, 1991).

Tech Prep, like all educational initiatives, should be equally open and available to males and females, all races, and students from all economic backgrounds. In order to determine if this openness and availability exist, tabulation of gender, racial and economic distribution of students is needed.

Recommendations

Replication of the present study with different groups of adolescents and different methodology is needed. Replication with Tech Prep students who have confirmation that they meet the State Tech Prep Definition is

needed. A total family profile involving all family members has merit. Great variability is possible and common across samples.

Replication of the present study with different methodology is needed. Longitudinal research strategies are recommended. This study examined students' perceptions at one point in time. Perhaps less reliance on self-report methodology or a way to offer anonymity are called for in future study. One of the goals of this study was to create a profile of students, which necessitated the use of student names. The demographic variables of economic disadvantage and academic achievement could be deleted in exchange for student anonymity. However, this would be a compromise. Social desirability remains an important issue with most people, and certainly no less so with adolescents.

Other assessments in conjunction with self-report could be used to assess career decision/indecision and family climate. The precise measurement of subtle dimensions is challenging. Also, other forms of operationalization of the variables could be used. However, the Career Decision Scale and the Family Environment Scale are among the very most respected instruments in the fields of career development and family study. However, the Career Decision Scale examines career decision/indecision, not realism of career decisions. The Career Decision Scale is well-established, objectively scored and considered psychometrically sound (Fuqua, Seaworth, & Newman, 1987; Jepson & Prediger, 1981) as is the Family Environment Scale (Boake & Salmon, 1983; Kronenberger & Thompson, 1990; Moos,

1990). All family assessment procedures, including the Family Environment Scale, need to be adapted and updated to keep abreast of changing times, family compositions, and cultural and value contexts (Moos, 1990). However, as previously noted, the internal consistency reliabilities of five subscales (Cohesion, Expression, Conflict, Organization and Control) of the Family Environment Scale were found to be below the acceptable level for research use by Roosa and Beals (1990).

Conclusions

In this study of 11th-grade and 12th-grade Tech Prep students, demographic variables explained a small portion of the variance and were not found to be strong predictors of career certainty as measured by the Career Decision Scale. Stepwise multiple regression was computed with demographic variables as the independent variables and the Career Certainty Scores as the dependent variables. A multiple R of .26 was computed and accounted for 6.5% of the variance. Race correlated .20 with career certainty and accounted for 4.4% of the variance. White students had a slight tendency to be more certain regarding career decision-making. The relations of culture-specific variables of racial minorities on career decision/indecision was not examined in this study. Reading Comprehension as measured by GTAT accounted for 2.1% of the variance related to Career Certainty. Reading Comprehension correlated -.16 with Certainty. Students with lower reading scores tended to be slightly more certain of their career decisions. All tests are, at least to some extent, culture-bound. Therefore,

test scores by minorities can be negatively affected by White, middle class cultural contexts (Walsh & Osipow, 1995). No variables other than race and Reading Comprehension met the criteria for inclusion in the analysis.

Stepwise multiple regression was computed with Career Indecision as the dependent variable and the demographic and achievement variables as the independent variables. A multiple R of .21 was computed and accounted for 4.6% of the variance. Mathematics accounted for 1.2% of the variance, race accounted for 1.7% additional variance, and grade accounted for 1.6% variance with regards to Career Indecision as measured by the Career Decision Scale. African American students and 11th-grade students had a very slight tendency to be less sure of their career decisions.

Discussion

There were similarities in the predictor demographic variables in the prediction formula for career certainty and career indecision. Race contributed a significant amount of the variance in predicting career certainty and career indecision. There was a tendency for African American Tech Prep students to have less certainty and more indecision than White Tech Prep students. Race does appear to influence career dynamics. Less career certainty and more indecision is likely reflected in the time-dependent outcomes of career selection. While this study did not examine other racial minorities because of the low numbers, noteworthy is the awareness that there are many similarities in the experiences of racial minorities, but also there are significant differences (Thomas & Alderfer, 1989).

Cognitive variables contributed a significant amount of the variance. The preponderance of research has indicated career decidedness is predicted by academic ability (Luzzo, 1993; O'Brien & Fassinger, 1993). GTAT is an achievement test, not an aptitude test, and the purpose of achievement tests is to measure what has been learned rather than to predict future performance (McMillan & Schumacher, 1993). GTAT Reading Comprehension scores predicted career certainty while GTAT Mathematics scores were the variables predicting career indecision. This study did not examine realism of career decisions. Also, this study did not examine the appropriateness of career choice with aptitude or achievement levels.

Implications

Independent variables accounted for a small proportion of variance in career decision/indecision of these Tech Prep students. Even though the effects of some variables were nonsignificant, it is premature and unwise to discount their influence on career decision/indecision. A possible explanation is the possible omission of important variables and the dynamic, changing nature of career decision/indecision.

Race and cognitive variables contributed a significant amount of the variance in predicting career certainty and career indecision. Many career development theories emphasize definable patterns, stages or sequences that individuals progress through (Thomas & Alderfer, 1989; Super, 1959) but none of these theories takes into account the influence of race on the

developmental process (Thomas & Alderfer, 1989). Research is needed to improve understanding of the influence of race on career dynamics.

Research has indicated career decidedness is predicted by academic ability (Luzzo, 1993; O'Brien & Fassinger, 1993). The middle majority students need solid academic foundations so that they can achieve at the highest level possible (Hull & Parnell, 1991).

Ethical educational leaders should take a self-reflective perspective on decisions, interventions and processes regarding career development. Classification of students as Tech Prep who do not meet the State definition constrains the measurement of the authentic impact of the Tech Prep program. Efforts must be made to ensure that Tech Prep, as well as other programs, are not identifiable by gender, race or economic disadvantage.

Recommendations

Additional research is needed to understand racial differences that may influence the rate at which individuals progress through the career developmental stages and how minorities cope with the issues of each successive phase (Thomas & Alderfer, 1989). Cultural differences, including within-group differences, should be acknowledged and valued in career counseling. The goal of career development is not to have all students make the same choices but to help students make career choices that are culturally appropriate and the best career decisions possible for the individual (Walsh & Osipow, 1995).

Research suggests that given adequate time and context for learning, and favorable learning conditions, 95% of students can achieve mastery of any basic skill, particularly if students understand the "why" of their learning (Hull & Parnell, 1991). Research also suggests that a student does not function at a single cognitive level across all settings and tasks, but rather the level of function varies with an individual's experience or expertise in a specific domain (Chi as cited in Goetz, Alexander, & Ash, 1992). Greater development and increased utilization of abilities are among the goals of Tech Prep.

Conclusions

A stepwise regression was utilized to determine if 11th-grade and 12th-grade Tech Prep students' scores on the ten subscales of the Family Environment Scale were predictive of career certainty as measured by the Career Decision Scale. The ten subscales of the Family Environment Scale served as the independent variables and the Certainty Scale of the Career Decision Scale served as the dependent variable. A multiple R of .273 was computed and accounted for 7.46% of the variance. Intellectual-Cultural Orientation contributed 5.37% of the variance and correlated .23 with Certainty. Achievement Orientation contributed 2.1% unique variance. Achievement Orientation correlated .17 with Certainty.

Stepwise multiple regression was computed with Career Indecision as the dependent variable and the ten subscales of the Family Environment Scale as independent variables. Intellectual-Cultural Orientation correlated

-.212 with Career Indecision and accounted for 4.5% variance. Therefore, only one of the ten subscales of the Family Environment Scale accounted for variance regarding career indecision. The mirror image indicated higher scores on the Intellectual-Cultural Orientation subscale predicted career certainty and lower scores on Intellectual-Cultural Orientation predicted indecision.

Discussion

In this study, family environmental or climate characteristics explained a small portion of the variance. Family environmental characteristics were not found to be strong predictors of career certainty or career indecision. However, family environmental characteristics should not be discounted in exploring career decision/indecision.

A possible explanation for the failure of most of the predictive variables to reach significance in the prediction of career decision/indecision is that the predictive variables may be intercorrelated. The ten subscales may measure overlapping, yet distinct aspects of the family climate. The unique variance contributed by the other variables may not be great enough to significantly add to the predictive equation. The direct effects may be subsumed under more powerful interaction effects. Also, other variables may mediate the predictive ability. Another explanation is that decided and undecided high school students are very much alike and have relatively few significant differences (Holland & Holland, 1977).

Research has indicated differences in family environment or family climate may serve as predictors in career decision-making (Dorn, 1992, Lopez & Andrews, 1997, Lopez & Thurman, 1993). In this study, the predictor independent variables of social-environmental characteristics of families explained a small amount of the variance associated with career certainty and career indecision. A proportion of research has reported no evidence that career indecision is related to family interaction patterns (Eigen, et al., 1987).

Implications

The relationship of family environment on the career certainty and career indecision of Tech Prep students is unclear. Research is needed to increase understanding. Better comprehension is needed for insight into students' actions and feelings so that interventions can be provided to help improve their lives (Moos, 1994).

Recommendations

Counseling with students regarding their responses to the Family Environment Scale was beyond the scope of this study. However, the Family Environment Scale can give students a framework for thinking about their families. Instead of viewing the family as "good" or "bad" students can learn to think of their families in terms of the dimensions of Relationship, Personal Growth, and System Maintenance. Also, students can learn to think of their families in terms of the subscales of Cohesion, Expression, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation,

Active-Recreational Orientation, Moral-Religious Emphasis, Organization and Control. Thinking of the family in terms of dimensions or subscales encourages flexibility by pointing out different ways to plan change. The subscales may encourage students to participate in designing their own future families and exerting more control over the influence of their present families (Moos, 1994).

Family systems and person-environment research and theories may lead to better understanding of individuals' preferences for occupations and the relationship of the degree of congruence and the beneficial/nonbeneficial outcomes of that degree of congruence (Walsh & Osipow, 1995). Person-environment theory has roots in the Parson's dictum of matching individuals and careers discussed earlier. Part and parcel of the person-environment congruence theoretical models of career choice is family orientation. Family orientation is seen as one of several predictor independent variables, as it is in this study, and career orientation is one of several dependent variables influencing career choice (Betz & Fitzgerald, 1987). The work-family interface is an important issue for males and females, all ages, all economic background, and all races. Theory construction and research are needed.

Child psychologists as well as leadership theorists agree that while heredity plays a role in leadership development, it is childhood conditioning that lays the more important groundwork for leadership. The family cultivates the child's intellect, interests, and talents, and family members are the first role models for interpersonal skills. Also, the family sets

expectations for the child's later achievements and success. By influencing the child's sense of self-esteem, the family may prove to be the source for the motivation to lead. Some permutations of family environments may be more conducive to the development of leadership drive and ability than others (Conger, 1992).

Family environments influence leadership in positive and negative ways. Educational leaders should support family environments and educational initiatives that strengthen families. Ethical and moral leaders have responsibilities toward the communities in which they live. The spirit of community is one of responsibility for others and teamwork.

Future Directions

Research related to career decision-making implies that certain individuals should produce higher quality decisions and encounter less decisional difficulty than others. While the quality or realism of decisions was not examined in this study, decisional difficulty or indecision was examined. The theory that the most debilitating cause of vocational indecision is the indecisive personality, caused by life history of conflicting learning experiences, is related to family systems theory. Of great importance in both theories is that individual and situational factors impede or facilitate decisional and developmental progress (Phillips & Pazienza, 1988, chap. 1).

The results of this study provided limited support for the predictive ability of demographic variables on career certainty and career indecision as measured by the Career Decision Scale. However, demographic variables did

explain part of the variance. Academic achievement, gender, economic disadvantage and race can not be discounted when considering career planning and career decision-making. Gender and racial differences, and unfortunately, bias and stereotyping are part of the work world and should not be ignored (Walsh & Osipow, 1995).

The results of this study provided limited support for the predictive ability of family subscales and dimensions as measured by the Family Environment Scale for career certainty and career indecision. Families provide the setting for career decision-making and the impact of that setting is difficult to measure. In extreme cases, the predictive ability of demographic variables and the subscales of the Family Environment Scale may increase. Clearly, a deeper and boarder understanding of the processes involved in adolescent career decision-making is needed.

The results should be considered in the context of the limitations associated with this study. The sample was nonrandom, not representative of the general population. The sample Tech Prep students met the definition of Florida Tech Prep Students as determined by the respective school districts. Variation exists among the districts in interpretation and application of the State definition. While the students had no difficulty and limited discomfort with the instruments, the key constructs held by the test developers may have differed from the meanings held by the students. Also, total family profiles involving all family members have merit.

Career decision/indecision is a multidimensional construct. There are multiple subtypes of undecided students. There are distinct forms of indecision. In terms of application, classifying students can never be the goal itself. The goal must be the development and delivery of differential intervention strategies. Interventions that strengthen families are needed. Parents must continue to support their children in making career choices and in facilitating that decision. The most important challenge is to broaden career possibilities and be attuned to attitudes and other factors that limit career possibilities for students.

Interventions should be viewed as efforts to change something that is already changing without these special efforts (interventions). The efforts to change must be systematic and deliberate, yet flexible. Career development interventions, like all human development interventions, should be dynamic. Intervention does not strive to influence the static point in life, but rather to affect a change trajectory, with potential to change the individual's entire life course. The premise of this developmental approach is that any given individual can follow a number of different possible developmental trajectories (Vondracek, Lerner, & Schulenberg, 1986).

Developmental theories should take into account the influence of race on the developmental process. This is not to say that African Americans do not experience the career developmental stages defined by researchers concerned primarily with White populations but merit is placed on understanding how minorities cope with the issues at each developmental

phase (Thomas & Alderfer, 1989). Grappling with issues of inclusion and identity may slow progression from one stage to another for minorities (Dickens & Dickens, as cited in Thomas & Alderfer, 1989).

This study does not strongly confirm or disconfirm the effects of social-environmental characteristics on career decision/indecision of students. It is impossible to completely unravel the complex causal effects present in any relationship of long duration. Family relationships are no exception (Waterman, 1982). The search of a better theory will continue. Micro-theory approaches have much to offer (Harren, 1979). The search for antecedent influences on career decision/indecision should continue to focus on family variables, with a continuing emphasis on developmental characteristics of adolescents. Career development may be best viewed as a complex life-span process whose substance is determined by developing persons in interaction with their environments (Super, 1980).

The culturally approved time for making career choice is rapidly changing. Younger students are expected to make career choices. As a vocational educator, I am deeply concerned that the educational system in Florida is demanding career decisions at developmentally too early ages. The attachment of severe penalties for what is seen is procrastination or indecision raises moral issues. The delay may be within normal developmental spans for many middle, secondary and college students. The delay may be influenced by social-environmental characteristics and other factors beyond the direct control of the young person. While occupational

inheritance in terms of following in father's career path is less common, occupational inheritance in terms of range of salary earned may not be uncommon. There is a great need to broaden what Gottfredson (1981) called the zone of acceptable alternatives for all young people.

We need understanding. We need complex understanding of how students differ in their decision-making and acceptance of differences in personal growth and development. We need a comprehensive knowledge base that encourages an integrated view of the whole person, operating in complex socio-cultural and physical contexts. Both the person and the context (environment) should be viewed as changing over time and as dynamically interactive (Vondracek, et al., 1986). The family systems perspective of career decision/indecision recognizes the changing nature of the family and the changing nature of career decision-making.

Appendix A
Letter from Northeast Florida Education Consortium

DATE

FIELD(name and address)

Dear FIELD(Name):

Garlon Webb, Director of Vocational, Adult, and Community Education, is completing her doctoral degree at the University of North Florida. Her dissertation is entitled, "Relations of Social-Environment Characteristics of Families on Career Decision/Indecision of Secondary Tech Prep Students". It is her goal that intact classrooms of Tech Prep students in our Northeast Florida Educational Consortium's twelve districts serve as the sample. I believe that Garlon's research would contribute to program improvement in career development, especially Tech Prep, and further our understanding of the kinds of interventions secondary students need to meet their personal and career goals. Garlon's research may help to broaden our understanding of how students select careers and vocational programs, as well as expand our understanding of the familial and other demographic influences on career choice and career decision-making. We would glean information that would assist us in program planning and providing counseling services to more effectively meet the needs of our students. In the sense of professional collegiality, I applaud the opportunity for us to work together in furthering research and expanding the knowledge base that ultimately have both direct and indirect impact on our students.

If you agree to allow Garlon to conduct research in the high school(s) in your district, Garlon would make the arrangements with the vocational director and the high school principal. The projected date for testing is DATE. The selected class of eleventh and twelfth grade Tech Prep students would complete two instruments. A total of 400 students would participate in the sample. This will be 30-60 students per County. One instrument is the Career Decision Scale developed by Osipow, Carney, Winer, Yanico, and Koschier. The test takes approximately fifteen minutes. The second instrument is the Family Environment Scale, developed by Moos & Moos. This test takes approximately twenty minutes. Both instruments would be completed in one classroom period. Students would receive permission slips prior to the testing. In addition, Garlon would need to work with your guidance personnel to gather GTAT scores and free/reduced lunch information on each student who completed the testing instruments. All information will be confidential. Information cannot be linked to any particular student.

I personally endorse Garlon's research and hope that you will allow her the opportunity to conduct testing and collect information in your district. I request that you let me know, in writing, if you would allow your high school(s) to participate. If so, please list the name, address, phone number of the high school and principal. Garlon would make direct contact with the principal.

Again, I am pleased that Garlon has selected our twelve counties and I am excited about working with her on her dissertation. She has offered to share a summary of the findings with us in writing and/or orally at one of our Board of Directors' meetings.

If you have questions and would like to contact Garlon directly, her home phone is (904) 259-6225 and her work phone is (904) 259-6251, Ext. 102 or SunCom 821-5354. I look forward to hearing from you.

Sincerely,

Robert E. Smith,
Executive Director, NEFEC

Appendix B
Letter from Baker County School Superintendent

DATE

FIELD(name, address, and zip)

Dear FIELD(Name):

Garlon Webb, Director of Vocational, Adult, and Community Education, is completing her doctoral degree at the University of North Florida. Her dissertation is entitled, "Relations of Social-Environment Characteristics of Families on Career Decision/Indecision of Secondary Tech Prep Students". It is her goal that intact classrooms of Tech Prep students in eleven districts serve as the sample. I believe that Garlon's research would contribute to program improvement in career development, especially Tech Prep, and further our understanding of the kinds of interventions secondary students need to meet their personal and career goals. Garlon's research may help to broaden our understanding of how students select careers and vocational programs, as well as expand our understanding of the familial and other demographic influences on career choice and career decision-making. We would glean information that would assist us in program planning and providing counseling services to more effectively meet the needs of our students. In the sense of professional collegiality, I applaud the opportunity for us to work together in furthering research and expanding the knowledge base that ultimately have both direct and indirect impact on our students.

If you agree to allow Garlon to conduct research in the high school(s) in your County, Garlon would make the arrangements with the vocational director and the high school principal. The projected date for testing is DATE. The selected class of eleventh and twelfth grade Tech Prep students would complete two instruments. A total of 400 students would participate in the sample. This will be 30-60 students per County. One instrument is the Career Decision Scale developed by Osipow, Carney, Winer, Yanico, and Koschier. The test takes approximately fifteen minutes. The second instrument is the Family Environment Scale, developed by Moos & Moos. This test takes approximately twenty minutes. Both instruments would be completed in one classroom period. Students would receive permission slips prior to the testing. In addition, Garlon would need to work with your guidance personnel to gather GTAT scores and free/reduced lunch information on each student who completed the testing instruments. All information will be confidential. Information cannot be linked to any particular student.

I personally endorse Garlon's research and hope that you will allow her the opportunity to conduct testing and collect information in your district. I request that you let me know, in writing, if you would allow your high school(s) to participate. If so, please list the name, address, phone number of the high school and principal. Garlon would make direct contact with the principal.

FIELD(Name)
DATE
Page 2

Again, I am pleased that Garlon has selected our eleven counties and I am excited about working with her on her dissertation. She has offered to share a summary of the findings with us in writing.

If you have questions and would like to contact Garlon directly, her home phone is (904) 259-6225 and her work phone is (904) 259-6251, Ext. 102 or SunCom 821-5354. I look forward to hearing from you.

Sincerely,

Tim Starling,
Superintendent of Schools

TS:ab

Appendix C
Informed Consent

STUDENT PERMISSION FORM
INFORMED CONSENT

We have given consent and support for Garlon Webb, Baker County Vocational Director and University of North Florida doctoral student, to gather information for her research study. Her research study involves Tech Prep students in eleven counties. We are asking your permission for _____ _____to participate in this study. Students will complete two brief tests. Both tests can be completed in approximately thirty minutes. Mrs. Webb will conduct the testing in your student's Tech Prep class. In addition, Mrs. Webb will gather some information from the student data information files. The purpose is to explore the influences on career decision/indecision of secondary Tech Prep students. All information will be confidential. No individual scores will be reported and no names will be revealed.

We hope you will allow your child to participate. Students are free to withdraw their consent and to discontinue participation in the study without penalty. Students are not paid to participate. However, it is expected that this study will contribute to program improvement in career development and assist students in meeting their personal and career goals. If you have questions or concerns, please call Mrs. Webb at home at (904) 259-6225 or at work at (904) 259-6251.

If you DO NOT wish for your son/daughter to participate, please give written notification to _____ no later than _____.

Appendix D
Demographic Sheet

Name of School

Name of Student _____ Assigned No. _____

GTAT
Reading Comp
Math

Social Security Number _____

Raw/Possible Score _____
Standard Score _____

Nat'l %ile Rank _____
Race_____ Sex _____
Free or reduced lunch _____

NCE _____
Test Date: _____
Norm: _____

Name of Program _____

CAREER DECISION SCALE

	TOTAL 1-2	TOTAL 3-18	NORMATIVE GROUP	% ILE
Cer				
Ind				

FAMILY ENVIRONMENT SCALE

	C	Ex	Con	Ind	AO	ICO	ARO	MRE	Org	Ctl
R/S										
S/S										

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VITA

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Garlon has been recognized by the Department of Education for Exemplary Community Education Programs, Model Comprehensive GED Awareness Campaign, and Exemplary GED Testing Program. She has served on several Department of Education Tasks Forces, including Lifelong Learning and Gold Seal Vocational Endorsement Program. She was also selected to participate in the Florida Academy for School Executives, sponsored by the Florida Association of District School Superintendents.

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