

**CAREER SELF-EFFICACY AND CAREER DECISION  
OF AFRICAN-AMERICAN, HISPANIC, AND ANGLO STUDENTS  
ENROLLED IN SELECTED RURAL TEXAS HIGH SCHOOLS**

A Dissertation

by

MARTHA LEONORA OWRE

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2005

Major Subject: Educational Psychology

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May 2005

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**ABSTRACT**

Career Self-Efficacy and Career Decision

of African-American, Hispanic, and Anglo Students

Enrolled in Selected Rural Texas High Schools. (May 2005)

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The study was designed to obtain information that would be of value to secondary school personnel who provide career counseling and guidance to high school students preparing for post-secondary education, training, and employment. The study attempted to determine if African-American, Anglo, and Hispanic students varied significantly on characteristics that could potentially inhibit career decision-making. The characteristics investigated included career indecision and self-efficacy.

Participants included 74 sophomore and senior students from three rural high schools in South Central Texas. Two research questions were investigated to determine if there were significant differences among Anglo, African-American, and Hispanic students on measures of career indecision and self-efficacy. A third research question was investigated to determine if significant differences existed on measures of career indecision and self-efficacy by ethnicity, gender, and grade level, as well as for the interaction of ethnicity, gender, and grade level. A supplementary analysis of the three research questions was conducted including school as an independent variable. The

Career Decision Scale and Career Decision Self-Efficacy Scale were administered to the participants and the data were analyzed with ANOVA and MANOVA statistical tests.

No significant differences were obtained for the three research questions. When the school variable was included in the data analysis, significant main effects differences were found for grade level on self-efficacy and for school on career indecision. The combination of ethnic groups, genders, and grade levels indicated significant differences for the interaction of gender and grade level on self-efficacy and for the interaction of ethnicity and gender on self-efficacy. Middle to high levels of career indecision were reported by 90% of the seniors and 79% of all students in the study. The researcher recommended that career interventions would be valuable to sophomores and seniors in helping them prepare for post-secondary career choices.

## DEDICATION

This dissertation is dedicated to my mother, Martha Leonora Palm Owre Cannon, and to my sister, Deirdre Virginia Cannon. Deirdre gave up many hours of her own time to help me prepare, type, and edit this manuscript. I am very thankful that she knew how to prepare tables! “Headers” and “page breaks” were simply terms to me, but Deirdre knew what they meant and she could use what she knew to produce results. I am forever grateful for that fact that she is a technical whiz with computers and that she was willing to share this expertise. Deirdre was there with me through every one of the countless revisions and she never murmured when we found something else that needed to be edited. Without her technical support and emotional encouragement, the preparation of this manuscript would not have been possible.

Mom has always been there for me and she has been a powerful influence in my life. She refused to allow me to forget that I should finish what I started, and without her I never would have completed this project. Through her own educational achievements, mom created a respect for education in our home. Although she earned an advanced degree and professional certificates, mom never had the opportunity to complete her own doctoral research. I wish circumstances would have allowed her to complete this level of her education. I hope that by completing my doctorate, I can give something back to her and let her know how valued she is in my life. Mom is the greatest person I have ever known. This one is for you, mom!

## ACKNOWLEDGMENTS

The path toward the achievement of this doctoral degree has been long and circuitous. I am indebted to my faculty co-chairs, Dr. Linda Parrish and Dr. Gonzalo Garcia. Both of these individuals have consistently been there when I needed them and they have “gone the extra mile” to help me attain this degree. Dr. Garcia was exceptional in his ability to help me understand statistics, which could easily have remained a foreign language to me. Dr. Parrish was instrumental in motivating me to apply for the program and in helping me navigate the academic system. Both have certainly been positive influences in my life and excellent role models.

My committee members, Dr. James Christiansen and Dr. David Erlandson, have attended meetings, worked with me in class and offered helpful suggestions in the design of my study. They have also guided me through the years and been very supportive of all my efforts. I enjoyed meeting Dr. Timothy Hughbanks, my GCR. Although university policy changed and he was not required to continue in this role, I appreciated the contributions he made during my oral examination.

I also wish to extend a special note of appreciation to the school districts, superintendents, administrators, teachers, parents, and students who made this research possible. My supervisor, Mr. Jim Copeland, was very understanding and encouraging. Without Mr. Copeland’s support, and the assistance of the staff members with whom I work, this research would not have been possible.

My family has been my lifeline during this process. My son, Jack, consistently reminded me that “I could do this” and always told me I was too close to quit. Jack has

supported me and reminded me that I would “regret it if I didn’t finish.” His encouragement has certainly made a difference to me! Jack gave me the emotional boosts that I needed to continue, and he was always a positive influence when I was tired and grumpy. My sister, Sabra, provided many forms of encouragement. Sabra and my brother-in-law, Stephen, loaned me a computer. Sabra also organized my statistics notes, ran errands for me, washed my clothes and even mowed my yard. My nephew, Patric, was a great delivery boy when material needed to be dropped off on campus! My twin nieces, Martha Leonora and Samantha Margaret, have followed my progress and encouraged me to continue.

I would also like to extend a very special word of thanks to my friend and former Anson Jones School parent, Mrs. Ann Hart. Her technical assistance facilitated clearing this dissertation through the thesis clerk’s office. When I finally finished all of the revisions, it was a great relief to give it to someone else to begin the submission process!

My father, Dr. Alfred Owre, Jr., (“Gramps”), has always been proud of my accomplishments. Gramps passed away a few years ago, and he is with me in spirit now. I know he will be there, with his trademark grin, when I walk across the stage at graduation. Although I never knew my paternal grandfather, Dr. Alfred Owre, his literary and professional accomplishments established a proud tradition in our family. I am thankful for the encouragement I received from my stepmother, Christene, and my Washington family. My sister, Jane, my brother-in-law, Andy, and my nephew, Simon, have been very supportive during this process. Although I have completed the



requirements for this degree, I still haven't been too successful in helping Andy understand that the Aggie War Hymn is a beautiful piece of music!

My maternal grandparents, Martha Leonora Meachum and Edward Joel Palm, attended the University of Texas at Austin. When grandmother graduated from the University of Texas, it wasn't popular for women to earn an advanced degree. She taught me that women can do anything and everything!

Lastly, I wish to acknowledge my mentor, the late Dr. Bz Cobb, founder of the Rehabilitation Counselor Training Program at Texas Tech University. Bz was a pioneer in the field of rehabilitation counseling, but I shall remember her most for the love and unconditional acceptance that she exhibited toward her students and their families. She touched the lives of everyone who knew her and I will never forget the influence that she had upon my life. I am proud to say that I will always be one of "Bz's children."

## TABLE OF CONTENTS

	Page
ABSTRACT.....	iii
DEDICATION.....	v
ACKNOWLEDGMENTS.....	vi
TABLE OF CONTENTS.....	ix
LIST OF TABLES.....	xiii
 CHAPTER	
I INTRODUCTION.....	1
Background.....	1
Statement of the Problem.....	1
Purpose of the Study.....	6
Research Questions.....	7
Research Question One.....	7
Research Question Two.....	7
Research Question Three.....	7
Definition of Terms.....	8
Anglo.....	8
African-American.....	8
Career Indecision.....	8
Hispanic.....	8
Rural Schools.....	8
Self-Efficacy.....	8
Population and Sample.....	9
Instrumentation.....	9
Limitations.....	9
Importance of the Study.....	10
Organization of the Dissertation.....	10
II REVIEW OF THE LITERATURE.....	11
Introduction.....	11
Self-Efficacy.....	11
Career Self-Efficacy.....	15
Measurement of Career Self-Efficacy.....	21
Career Decision-Making.....	25
Career Decisiveness and Adolescent Development.....	28

CHAPTER	Page
Measurement of Career Decision.....	30
Literature Review Summary .....	35
<b>III METHODOLOGY .....</b>	<b>37</b>
Population and Sample .....	37
Description of Independent and Demographic Variables Examined.....	42
High School .....	42
Grade Level.....	42
Gender.....	42
Ethnicity .....	42
Age.....	46
Average Grades.....	46
Future Plans .....	46
Mother’s Education.....	47
Father’s Education .....	47
Dependent Variables.....	48
Career Decision Scale.....	48
Career Decision Self-Efficacy Scale (Short Form).....	50
Procedure .....	51
Permission to Conduct Research .....	51
Utilization and Reproduction of Instruments.....	52
Identification of Potential Subjects.....	52
Language Considerations.....	53
Parent Contacts .....	54
Parent Responses .....	56
Acknowledgement of Parent Contacts.....	57
Student Contacts .....	58
Acknowledgment of Student Contacts.....	60
Research Sessions .....	61
Administration of Instruments .....	62
Scoring of Instruments.....	64
Data Analysis .....	65
Communication of Results.....	66
<b>IV RESULTS .....</b>	<b>67</b>
Introduction.....	67
Research Questions.....	67
Research Question One.....	67
Research Question Two .....	69
Research Question Three .....	69
Supplementary Analysis .....	72
Supplementary Research Question One.....	72

CHAPTER	Page
Supplementary Research Question Two.....	73
Supplementary Research Question Three.....	77
Summary Statement of Findings.....	81
 V SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS .....	 86
Introduction.....	86
Summary .....	86
Research Question One.....	87
Research Question Two .....	87
Research Question Three .....	87
Supplementary Analysis .....	87
Conclusions.....	90
Discussion.....	93
Implications.....	94
Recommendations.....	95
Recommendations for Future Research .....	97
 REFERENCES .....	 100
 APPENDIX A: DATA INFORMATION FORM .....	 105
 APPENDIX B: RESEARCH SUMMARY GIVEN TO SCHOOL DISTRICTS .....	 106
 APPENDIX C: LETTER TO DR. BETZ.....	107
 APPENDIX D: PERMISSION TO USE CAREER DECISION SELF-EFFICACY SCALE.....	 108
 APPENDIX E: FIRST LETTER TO PARENTS (ENGLISH).....	109
 APPENDIX F: FIRST LETTER TO PARENTS (SPANISH) .....	110
 APPENDIX G: SECOND LETTER TO PARENTS (ENGLISH).....	111
 APPENDIX H: SECOND LETTER TO PARENTS (SPANISH) .....	112
 APPENDIX I: PARENT CONSENT FOR (ENGLISH).....	114
 APPENDIX J: PARENT CONSENT FORM (SPANISH).....	116
 APPENDIX K: ACKNOWLEDGEMENT OF PARENT CONSENT FORM.....	118

APPENDIX L: STUDENT ASSENT FORM (ENGLISH) .....119

APPENDIX M: STUDENT ASSENT FORM (SPANISH).....121

APPENDIX N: ACKNOWLEDGEMENT OF STUDENT ASSENT FORM .....123

APPENDIX O: LETTER TO SUPERINTENDENTS .....125

APPENDIX P: LETTER TO PARTICIPATING STUDENTS.....126

APPENDIX Q: SUMMARY OF RESULTS FOR STUDENTS .....127

VITA.....128

## LIST OF TABLES

Table		Page
1	Students by Grade Level in Birch, Elm, and Oak High Schools, 2002-2003 .....	39
2	Student Participation.....	41
3	Parent Return of Consent Forms.....	43
4	Data Information Form Results .....	44
5	Means and Standard Deviations for Career Indecision by Ethnicity .....	68
6	Analysis of Variance Results for Career Indecision by Ethnicity .....	68
7	Means and Standard Deviations for Self-Efficacy by Ethnicity.....	70
8	Analysis of Variance Results for Self-Efficacy by Ethnicity .....	70
9	Multivariate Analysis of Variance Results for Self-Efficacy and Career Indecision by Gender, Grade Level, and Ethnicity .....	71
10	Means and Standard Deviations for Career Indecision by High School .....	74
11	Analysis of Variance Results for Career Indecision by High School and Ethnicity.....	74
12	Means and Standard Deviations for Career Indecision by the Two Largest High Schools.....	75
13	Analysis of Variance Results for Career Indecision by the Two Largest High Schools.....	75
14	Means and Standard Deviations on Self-Efficacy by High School .....	76
15	Analysis of Variance Results on Self-Efficacy by High School and Ethnicity.....	76
16	Means and Standard Deviations for Self-Efficacy by the Two Largest High Schools.....	78
17	Analysis of Variance Results on Self-Efficacy by Ethnicity for the Two Largest High Schools .....	78

Table		Page
18	Multivariate Analysis of Variance Results for Self-Efficacy and Career Indecision by School, Gender, Grade Level, and Ethnicity .....	79
19	Multivariate Analysis of Variance Results for Self-Efficacy and Career Indecision by School, Gender, Grade Level, and Ethnicity for the Largest Schools .....	82
20	Levels of Career Indecision .....	84

## CHAPTER I

### INTRODUCTION

#### Background

One of the tasks that is currently faced by high school students involves the need to identify a potential career. In addition to identifying a potential career, students also begin to prepare for the career they are considering and to evaluate the post-secondary options associated with their choice. In an effort to identify students who were most in need of career counseling and guidance, particularly those in rural areas, this study investigated several specific dimensions of career-related behavior among sophomores and seniors representing three major ethnic groups of high school students in three rural high schools in Texas in 2004. The career behaviors investigated in this study included career indecision, the rationale that a finite number of relatively discrete problems prevent individuals from reaching closure for educational and vocational decisions (Osipow, 1987), and self-efficacy, an individual's belief in his/her ability to perform a given task or behavior successfully (Bandura, 1977).

#### Statement of the Problem

The 2.8 million students who graduate from high school each year (Gray & Herr, 2000) are faced with a myriad of choices concerning their future careers (Zunker, 2002). Careers are viewed as the pathway to a good life. A career determines social status, salary, leisure activities, vacations, the type of activities performed at work, and working

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This dissertation follows the style of *Journal of Vocational Education Research*.



conditions (Herr & Cramer, 1992). Because students are making choices that lead to a career when they are leaving high school, they are actually choosing a career without knowing the outcome of their choices (Heckhausen, 2002). The students' lack of knowledge concerning the outcome of their choices affects their economic and psychological well-being, as well as society's ability to manage the productivity of the talents and resources of its members. The choices can also lead to both downward and upward mobility, therefore bearing significant consequences for adult life (Heckhausen & Tomasik, 2002, p. 200).

The consequences for adult life associated with career choice also contribute to anxiety and confusion. In Western cultures, individuals have considerable potential for self-expression in their work, a freedom to choose from a variety of career options, and the opportunity to satisfy personal goals through work (Osipow, Walsh & Tosi, 1980). As a result of the variety of career options available, the choice of a career often elicits anxiety. Individuals may make choices impulsively without any serious effort to relate significant personal attributes to the relevant aspects of work, and without adequate data. The impulsivity of making a choice without adequate data is related to the belief that once a choice is made, the individual will be moving toward a goal, and therefore no anxiety will be experienced. According to Osipow, Walsh, and Tosi (1980), choices that are made in an impulsive manner often cause even greater anxiety than would have been faced initially if time had been taken to think seriously about the career choice.

The impulsiveness that is often associated with a career choice and the anxiety associated with making the choice can also lead to a fear of failure (Osipow, Walsh &

Tosi, 1980). Because the need to choose a career wisely often means improving social status, many people are afraid they will fail to advance their social, educational, and vocational status in life. This fear of failure can be debilitating, particularly if the choice of a career leads to unsatisfying vocational activities or presents an individual with tasks for which there is limited potential for success (Osipow, Walsh & Tosi, 1980). The possibility of limited success in a chosen career can be debilitating, and it can also make the choice of a career very difficult.

Difficulty in making a career choice is closely related to career maturity and is one of the primary challenges facing students. The high school years are considered as a time of learning to prepare for the future when students are expected to take independent actions and accept responsibility for their decisions (Zunker, 2002). However, according to Gray (2000), developing career maturity has not been a priority of schools, or of the nation. Consequently, students have not been taught to make realistic decisions, teens and parents postpone dealing with reality, and many students delay making a career decision by attending college. In Gray's (2000) opinion, career decisions are actually discouraged, career uncertainty is viewed as usual and therefore not a cause for concern, and teenagers are often allowed to drift because others do not want to discourage the teenagers' dreams. When allowed to drift, many teens graduate from high school without a plan. They do not understand the importance of narrowing career interests and using these interests as a basis for post-secondary planning. In many instances, these teens fail to identify one or more career interests and they do not engage in activities to verify these career interests. As a result, many teens have only a vague notion of

wanting a good job in order to make a decent living, with few specific hopes and dreams (Gray, 2000).

The notion of wanting a good job is encouraged because many career pathways are theoretically open to everyone (Osipow, Walsh & Tosi, 1980). Given the belief that career pathways are open to everyone, many teens do not realize that personal and societal factors affect and limit vocational choice. Societal factors that affect vocational choice include economic resources, geography, climate, sex, race, age, and social class membership. Personal factors that affect vocational choice include skills, physical characteristics, ideas, attitudes, beliefs, and the capacity to perform successfully a variety of job-related tasks (Osipow, Walsh & Tosi, 1980). When considered together, these personal and societal factors pose distinct challenges for students in their career choices.

The challenges are felt by all students, and particularly by students with limited access to career resources or marginal academic credentials. As described by Peterson (1993a), academically under prepared students who enter postsecondary education with marginal academic credentials often lack proper skills in reading, writing, and/or math. They are considered to be at risk of attrition and career planning is particularly important in helping them integrate into the educational environment (Peterson, 1993a).

Integrating into the educational environment is also difficult for students with limited access to career resources, particularly those from rural areas. According to Rojewski (1994), rural youth also experience unique problems and barriers to employment. These barriers include geographic isolation, limited employment opportunities, and limited access to career resources. Additionally, students from rural areas are often affected by

a lack of economic vitality and have fewer opportunities for educational and vocational achievement than their urban counterparts (Rojewski, 1994).

Many of the difficulties faced by rural and under prepared students in making career decisions are also shared by minority youth. In a study conducted in a large urban high school, Harris (1998) found White students had less career indecision and were more self-efficacious than Hispanic or African-American students. The African-American and Hispanic students in the study also believed that more of the adverse happenings in their lives could be attributed to chance than did the White students. Based on these results, Harris (1998) concluded that African-American and Hispanic students may have difficulty understanding the need for career decision-making and therefore fail to plan adequately for the future.

The difficulties experienced by minority students in choosing a career have also been suggested by other researchers. According to Lent, Hackett, and Brown (1996), societal factors such as socioeconomic status, family norms, educational access, and gender role socialization may have an adverse affect upon African-American and Hispanic students. As a result of these societal influences, these minority students experience barriers to the career decision-making process resulting from fear, poor self-concept, low self-efficacy, and an external locus of control.

In summary, the choice of a career is fraught with difficulties and affects every aspect of an individual's existence. Careers affect lifestyle, prestige, and living conditions. Although it would be comforting to assume that the choice of a career is a smooth process with a successful outcome, this is not always the case. Career selection

begins in adolescence, at a time when young adults are also trying to forge their own identities and mature into adulthood. Parents and school personnel are available to guide adolescents and to help them make wise choices as they mature, but some adolescents refuse to accept advice and guidance from others. Regardless of the adolescent's attitude toward accepting advice, the choice of a career is often fraught with anxiety. In order to avoid the anxiety associated with making a career choice, adolescents may choose a career path without considering their interests and abilities. When an adolescent chooses a career path to avoid anxiety, the career path is often ill advised and may actually increase the adolescent's anxiety. Adults may also be reluctant to guide teenagers, teenagers may choose postsecondary education even if they are not prepared, and career indecision is viewed as acceptable. The ability to make a career decision is also affected by a lack of academic preparation and limited access to career experiences. When all of these factors are considered within the context of career planning for the millions of students graduating from high school every year in the United States, it is clear that research to identify factors that may assist young adults in planning their careers is warranted, regardless of their ethnicity, gender, or grade level.

### **Purpose of the Study**

The study was designed to obtain information that would be of value to secondary school personnel who provide career counseling and guidance to high school students preparing for post-secondary education, training, and employment. The researcher attempted to determine if sophomore and senior students representing different ethnic groups (African-American, Anglo, and Hispanic) varied significantly on

specific characteristics that could potentially inhibit their career decision-making processes. The two specific characteristics investigated included career indecision, the rationale that a finite number of relatively discrete problems prevent people from reaching closure for educational and vocational decisions (Osipow, 1987) and self-efficacy, an individual's belief in his/her ability to successfully perform a given task or behavior (Bandura, 1977).

### **Research Questions**

In order to identify high school students who are most in need of career counseling and guidance, and to accomplish the purposes of the study, three research questions were investigated.

#### *Research Question One*

Are there differences among Anglo, African-American, and Hispanic students with respect to career indecision?

#### *Research Question Two*

Are there differences among Anglo, African-American, and Hispanic students with respect to feelings of self-efficacy?

#### *Research Question Three*

For each of the three ethnic groups, two genders and two grade levels examined, and the groups that result from the combinations of ethnicity, gender and grade, are there differences in career indecision and self-efficacy?

## Definition of Terms

The terms Anglo, African-American, career indecision, Hispanic, rural schools, and self-efficacy have been used in this research. Definitions of these terms have been provided in this section of the dissertation.

### *Anglo*

As self-reported by students on the demographic questionnaire used in this research.

### *African-American*

As self-reported by students on the demographic questionnaire used in this research.

### *Career Indecision*

The rationale that a finite number of relatively discrete problems prevent people from reaching closure for educational and vocational decisions (Osipow, 1987), as measured on the Indecision subscale of the Career Decision Scale (CDS).

### *Hispanic*

As self-reported by students on the demographic questionnaire used in this research.

### *Rural Schools*

Schools located in agricultural or farming areas.

### *Self-Efficacy*

A person's belief concerning his/her ability to perform a given task or behavior successfully (Bandura, 1977), as measured on the CDESES (Taylor and Betz, 1983).

### **Population and Sample**

The population for the study was composed of Anglo, African-American, and Hispanic tenth and twelfth grade students enrolled in three rural school districts in South Central Texas during the 2003-2004 school year. The students who participated in the study were selected as part of a non-random sample from the population described herein. In order to participate, the permission of a parent or guardian was required if the student was under the age of 18. A student 18 years of age was not required to obtain the permission of a parent or guardian (Texas Education Agency, 1998, p.717). All students who participated were required to sign an assent form in which they agreed to participate. Students participated in the study during their English (advanced placement, honors, and non-honors) classes.

### **Instrumentation**

Career indecision was measured by the Indecision Scale of the third revision of the CDS (Osipow, Carney, Winer, Yanico & Koschier, 1976). Career decision self-efficacy was measured by the short form of the (CDSES) (Taylor & Betz, 1983). This instrument was originally referred to as the Career Decision-Making Self-Efficacy Scale in the literature.

### **Limitations**

Care must be taken when generalizing the results of this study to populations other than rural high school students in the tenth and twelfth grades, or to comparable students in other similar settings. Significant differences found in the self-efficacy and confidence in making career decisions exhibited by tenth and twelfth grade rural high



school students could be related to other personality factors, such as a general lack of confidence in all decisions or low self esteem. The results are limited to the reliability and validity of the instruments utilized in this research.

### **Importance of the Study**

This study has potential significance in identifying groups of high school students, particularly in rural areas, who could benefit from interventions that teach career decision-making strategies. Because the choice of a career determines life style, earning power, personal satisfaction, and social status, and the choice of a career begins in high school, it is of value to identify specific factors associated with this choice as well as to identify students who are most in need of career intervention assistance.

### **Organization of the Dissertation**

The organization of the remainder of the dissertation includes the following chapters: Chapter II, Review of the Literature; Chapter III, Methodology; Chapter IV, Results; Chapter V, Summary, Conclusions, Discussion, and Recommendations.

## **CHAPTER II**

### **REVIEW OF THE LITERATURE**

#### **Introduction**

The literature is replete with studies on career development. The focus of this literature review, however, is to present pertinent information regarding selected factors affecting career choice. The factors investigated in this research and reported in this literature review pertain to career decision-making and self-efficacy as it relates to career choice. Also included in this literature review are studies that reference the instruments used to measure career decision-making and self-efficacy.

#### **Self-Efficacy**

Bandura (1977) described self-efficacy as an individual's judgment of his/her capabilities to organize and execute courses of action required to attain designated types of performances. Self-efficacy is a belief concerning the performance of a behavior, and is different from an outcome expectation that certain results will follow the performance of a particular behavior. Embodied within the self-efficacy framework is the concept that people have a capacity for self-regulation, which allows them to exercise control over their destinies, and to direct their behavior toward perceived future goals and outcomes (Bandura, 1986). Self-efficacy is grounded in the interaction between environmental events, personal factors, and behavior. Although cognitive processes play an important role in determining behavior, behavior also influences cognition (Bandura, 1986).

Self-efficacy has emerged in the literature as a clinical construct to describe and explain behavior (Bandura, 1977). According to Bandura (1984), individuals who believe they are highly efficacious act, think, and feel differently from those who perceive themselves as inefficacious. A low sense of efficacy may cause an individual to avoid difficult tasks and to view these tasks as personal threats (Bandura, 1993). Individuals who perceive themselves as inefficacious have low aspirations, weak commitments to their goals, and often give up quickly when faced with difficult tasks. In contrast, individuals with a strong sense of efficacy approach difficult tasks as challenges to be mastered, set challenging goals, maintain a strong commitment to the goals they set, redouble their efforts in the face of failure, and believe they can control threatening situations (Bandura, 1993). Perceived self-efficacy relates to coping behavior, stress reactions, reaction to failure experiences, and achievement (Bandura, 1982).

With respect to achievement, efficacy expectations are a primary determinant of an individual's choice of activities, the amount of effort that will be expended in completing these activities and the amount of time an individual will devote to pursuing an activity, especially if the activity is perceived as stressful. Efficacy expectations vary with the degree of difficulty of the tasks and with the generality of the tasks, including both efficacy for specific tasks and for a wider range of tasks (Bandura, 1977).

Self-efficacy increases with success and personal accomplishments (Bandura, 1977). Personal accomplishments may be attained through performance, vicarious experience, verbal persuasion, and emotional arousal. Performance techniques

encompass modeling and desensitization; vicarious experiences involve live and symbolic modeling; verbal persuasion includes suggestions and self-instruction; emotional arousal utilizes biofeedback and desensitization. These performance techniques provide sources of information that individuals use to judge their level of self-efficacy and they become part of an individual's cognitive processing (Bandura, 1977).

When viewed in the context of cognitive processing, the impact of information on self-efficacy will vary according to the manner in which the individual appraises the information and the social circumstances involved in the processing of the information. According to Bandura (1977), an optimal method to improve and support generalized, lasting changes in self-efficacy and behavior involves powerful induction procedures (participant modeling, performance desensitization, performance exposure, and self-instructed performance) and self-directed mastery to strengthen expectations of personal efficacy.

To test the self-efficacy model, Bandura (1977) conducted an experiment during which severe phobics were given treatments designed to create differential levels of efficacy expectations. Adults with snake phobias were divided into three separate groups. One group did not receive a treatment, another group received participant modeling, and the third group modeled alone. The participant-modeling group was given assistance with direct mastery experiences (holding a boa constrictor, placing open hands in front of the snake's head as it moved, holding the snake in front of their faces, allowing the snake to crawl freely in their laps). The group that modeled alone watched

someone else perform the same activities as the group with direct mastery experiences and did not engage in any of the actual behaviors with the boa constrictor. Participants were asked to rate their ability to complete different performance tasks with the boa constrictor and to indicate the strength of their expectations for each of the tasks on a scale from great uncertainty to complete certainty. The efficacy ratings were completed for coping with snakes of the same variety as the boa constrictor, as well as for coping with dissimilar snakes. The ratings were given prior to treatment, after treatment but before the posttest, and after the posttest. The posttest involved a series of performance tasks that required a variety of threatening interactions with a different type of boa constrictor and with a corn snake of different appearance but equivalent threat value. Experiences based on performance accomplishments produced higher, more generalized, and stronger efficacy expectations than vicarious experiences and vicarious experiences produced higher, more generalized and stronger efficacy expectations than the control group (Bandura, 1977).

As indicated in self-efficacy research, self-efficacy was originally a clinical concept, emphasizing cognition. It was one of the ways in which an individual's approach to a situation, particularly a threatening situation, could be explained, and it also provided clinicians with a tool that could be used to help individuals exert influence over different aspects of their lives (Bandura, 1989). Following Bandura's introduction of the self-efficacy concept, other researchers began to apply self-efficacy to a wide range of specific behaviors. For the purposes of this research, the application of self-efficacy to career choice is particularly relevant.

### **Career Self-Efficacy**

Within the field of career development, self-efficacy was originally applied to the career development of women. In 1981, Hackett and Betz postulated that a limited range of career options from which most women chose might be due, in part, to differential expectations of self-efficacy among women versus men. The authors categorized the career self-efficacy expectations of women as lower, weaker, and less generalized among women than among men with respect to Bandura's (1977) four sources of efficacy information: performance accomplishments, vicarious learning, emotional arousal, and verbal persuasion (Hackett & Betz, 1981). According to Hackett and Betz (1981), women were less likely than men to receive encouragement for nontraditional career pursuits, such as math and science (verbal persuasion); women were more likely to experience higher levels of anxiety than men (emotional arousal); women had less exposure than men to female role models who represent career options other than traditional female occupations (vicarious learning); women had less involvement in mechanical activities, sports and other traditionally masculine endeavors (performance accomplishments). In summary, Hackett and Betz (1981) proposed that women lack socialization experiences that would strengthen their sense of personal efficacy in relationship to many career-related behaviors, particularly those in traditionally male-dominated careers.

The pursuit of a chosen occupation is another career area in which research has been conducted on self-efficacy. In 1983, Betz and Hackett investigated the relationship

of mathematics self-efficacy to science-based college majors chosen by males and females. The study was designed to test two hypotheses: (1) that the mathematics self-efficacy expectations of college males are stronger than those of college females; and (2) that mathematics self-efficacy expectations are related to making career decisions, including the selection of science-based majors. Subjects included 153 female and 109 male undergraduates enrolled in introductory psychology courses. The subjects completed a mathematics self-efficacy scale, the Bem Sex Role Inventory, an adapted version of the Fennema-Sherman Mathematics Attitudes Scales, and a questionnaire concerning their choices of college majors. Results indicated that the mathematics self-efficacy expectations of college females were significantly weaker than those of college males, and that students who reported stronger mathematics self-efficacy were more likely to select science-based college majors than were students reporting weaker expectations of mathematics self-efficacy. Additionally, mathematics self-efficacy expectations of females were equal to those of males when the tasks that were related to mathematics involved traditionally female activities, such as cooking and sewing. The authors concluded that females' early experiences were more likely to emphasize domestic activities, such as cooking and sewing, which in turn contributed to their higher self-efficacy expectations of the math skills related to these specific activities. As a further extension of this finding, Betz and Hackett (1983) suggested that females could improve their feelings of math self-efficacy if traditionally female activities involving math could be included in math problems and if females were made aware they were able to use math successfully in ordinary activities. The Betz and Hackett study (1983)

concluded that the lower self-efficacy math expectations of college females could be a contributing factor in the underrepresentation of women in science-based careers and supported the applicability of self-efficacy (Bandura, 1977) to career choice.

The role of self-efficacy in determining career choice, especially the career choice of women, has also been researched by Clement (1987). Clement conducted a study of 78 female and 43 male university students. Students completed a test of verbal ability, numerical ability, perceptual ability, and overall ability. The students were also given an occupational questionnaire describing 20 occupations. After reading the descriptions of the occupations, students were asked to rate their efficacy expectations regarding the occupations, to indicate how much they liked each occupation, and to state the extent to which they had considered entering each occupation. Female students rated themselves significantly less self-efficacious than male students on nine of the 10 traditionally male occupations and men had lower efficacy expectations than women on three of the traditionally female occupations. Men reported liking all 10 of the female occupations less than the women did and women reported liking most of the traditional male occupations as much as the men, with the exception of an air traffic controller, electrical engineer, and town and country planner. With regard to the consideration ratings, males reported lower consideration ratings than females for eight of the traditionally female occupations and females had lower ratings for three of the traditionally male occupations. There were no significant differences between males and females on overall ability, verbal ability, numerical ability, or perceptual ability.



Although Clement (1987) found that women had lower self-efficacy expectations than men with regard to traditionally male occupations, Clement also found that women had considered seven of the male careers as seriously as the men had considered these careers. Based upon this finding, Clement disagreed with the previous research of Hackett and Betz, concluding that the women's reluctance to consider entering the three traditionally male occupations could not be directly attributed to a lack of self-efficacy. Clement suggested that women have a more realistic awareness of their limitations than men and this awareness, not a lowered self-efficacy, was responsible for their reluctance to enter traditionally male occupations. With respect to the men who participated in the study, Clement found they were less willing than women to consider careers that were atypical for their gender because they did not believe they would like traditionally female work, not because they lacked confidence in their ability to perform the work.

Although self-efficacy (Bandura, 1977) has been the subject of a number of studies regarding the career development of women, self-efficacy has also been investigated with reference to the career choices of minority students and students in other special populations. Bores-Rangel, Church, Szendre, and Reeves (1990) studied a group of 26 men and 9 women enrolled in a high school equivalency program at Washington State University. All participants in the study were from seasonal farm worker backgrounds; participants ranged in age from 17 to 30. The men and women were given a self-efficacy questionnaire, an interest inventory, an extent of consideration questionnaire, and an incentives questionnaire. The incentives questionnaires described needs or values that could be satisfied through occupational activities; the extent of

consideration questionnaire required the participants to indicate how much they would consider choosing occupational activities as their own occupation. The results of the study indicated a moderately positive relationship between extent of consideration of occupational activities and the predictor variables consisting of interest, self-efficacy, and incentives satisfaction. Interest was found to be somewhat more strongly related to extent of consideration than was self-efficacy. Bores-Rangel, Church, Szendre, and Reeves (1990) interpreted the results of their study as lending support for the usefulness of self-efficacy in explaining and predicting vocational choice, as well as the extension of the self-efficacy model to a more economically disadvantaged population.

In a related study with the same high school equivalency program at Washington State University, Church, Teresa, Rosebrook and Szendre (1992) also found evidence for the applicability of the self-efficacy model to the consideration of careers by a population of minority high school-equivalency students. The study included 59 men and 26 women from migrant farm working families; 42 of the participants were instructed in English and 43 were instructed in Spanish. The Spanish instruction group was composed of 32 Hispanic men and 11 Hispanic women. In the English instruction group, there were 19 Hispanic men, 9 Hispanic women, 8 Native American men and 6 Native American women. Participants responded to instruments measuring self-efficacy for specific careers, a consideration of specific occupations form, the United States Employment Service Interest Inventory, and a questionnaire to assess occupational needs and values.

The willingness of the high school-equivalency students to consider specific occupations was associated fairly strongly with self-efficacy, interest and perceived incentives satisfaction for those occupations. The association of self-efficacy, interest, and perceived incentives satisfaction with the willingness to consider specific occupations did not vary with ethnicity. No significant differences were found in the responses of the Native Americans, the English-instruction Hispanics and the Spanish-instruction Hispanic participants. Both men and women reported greater self-efficacy for occupations dominated by their own gender and women exhibited a greater tendency than men to reject male-dominated occupations. These findings were consistent with the previous research of Bores-Rangel, Church, Szendre, and Reeves (1990) and validated the usefulness of self-efficacy in understanding career choice.

The usefulness of self-efficacy in understanding career choice has also been investigated with Hispanic middle school students. Fouad and Spreda (1996) conducted a study of students attending a predominately Hispanic middle school in a Midwestern urban area. The student body profile from which the students were selected indicated that 90% of the students were below the national average on the Iowa Test of Basic Skills in reading, 79% were below the national mean scores in mathematics, and 8% were below national mean scores in language. Approximately 85% of the students participated in the free and reduced lunch program. Of the 139 students participating in the study, 105 (63 Hispanics, 18 Anglos, 15 African Americans, 6 Asians, 1 Native American and 2 who did not report their ethnicity) completed all instruments. The results of the study suggested that generalized self-efficacy and outcome expectancy

contributed to intentions and goals for these students, and that generalized self-efficacy was a stronger predictor of intentions than situation-specific self-efficacy. Students were judged to relate a general feeling of confidence in themselves with regard to career preparation, but not for their confidence in their ability to complete the specific tasks involved in the process of making career decisions.

The relationship between career decisions and career self-efficacy has been a major focus of research with college students and members of special populations, specifically women and minority group members. Although many of the research studies have focused on the effects of career self-efficacy beliefs with respect to career choice, research in this field has also led to the development of the instrument used in this study to measure career self-efficacy, the short form of the CDSES (Taylor & Betz, 1983).

### **Measurement of Career Self-Efficacy**

The CDSES was originally referred to in the literature as the Career Decision-Making Self-Efficacy Scale (CDMSES). Developed by Taylor and Betz in 1983, the instrument, now known as the CDSES, measures the respondent's degree of belief that he/she can successfully complete specific tasks required to make career decisions. These specific tasks are based on the five career choice competencies developed by Crites (1978) and include the following: accurate self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving. The original instrument (long form) was composed of 50 items; each career choice competency was measured by 10 items. Respondents rated their responses to

each item on a 10-point scale; a rating of 9 indicated complete confidence and a rating of zero indicated no confidence (Taylor & Betz, 1983).

Taylor and Betz (1983) field-tested the CDSES (long form) in a study of 347 college students attending both public and private institutions of higher education in the Midwest. The students participating in the study were given a demographic information questionnaire, the CDSES, and the CDS (Osipow, Carney, Winer, Yanico, & Koschier, 1980). The results of the study indicated career self-efficacy expectations of the students were relatively strong and levels of self-efficacy were significantly predictive of levels of career indecision. Students who were less confident in their ability to complete decision-making tasks were more undecided than students who reported higher levels of confidence and the confidence level was not related to the students' ability levels, as measured by scores on the college entrance examinations. Self-efficacy did not differ significantly as a function of gender, or as a function of the five specific decision-making tasks assessed. According to Betz and Taylor (1983), the findings of the study suggested career-related self-efficacy expectations could be useful in understanding, assessing and treating career indecision.

The psychometric characteristics of the CDSES indicated a coefficient alpha reliability of .97 for the total group of 346 subjects (Taylor & Betz, 1983). Coefficient alpha reliabilities of the five 10-item subscales ranged from .86 to .89 for Self-Appraisal, Occupational Information, Goal Selections, Planning, and Problem Solving. With respect to content validity, a factor analysis of the five subscales did not totally support

the existence of the subscales. The five factors accounted for 52% of the total variance and 27 items had their highest loadings on Factor 1, Self-Appraisal. Based on these findings, Taylor and Betz (1983) described Factor 1 as a general factor that included items from all five of the subscales. Although the factor analysis did not conclusively support the existence of the five subscales, Betz and Taylor (2001) have indicated the criterion-related and construct validity of the CDESES is strong with respect to the relationship between career decision self-efficacy and career indecision.

In a related study, Luzzo (1993) attempted to assess the reliability and validity of the CDESES. Over 230 community college students were given the CDESES, the attitude scale of Crites' (1978) Career Maturity Inventory, the Decision-Making scale of the Career Development Inventory (Super, Thompson, Lindeman, Jordaan, & Myers, 1981), and a demographics questionnaire. According to Luzzo (1993), estimates of the reliability and validity of the CDESES were generally supportive of its use as a measure of college students' career decision-making self-efficacy. An analysis of the data indicated an internal consistency coefficient alpha of .93 for the CDESES. A retest of the CDESES conducted within six weeks after the initial testing yielded a test-retest reliability of .83 for 44 students who completed the CDESES a second time. With respect to validity, the relationship between career decision-making attitudes and the CDESES scores reported  $r=.41$  (Luzzo, 1993). The CDESES was positively related to career decision-making, differences between the CDESES scores of men and women were not significant, and no significant relationships were found between CDESES scores and students' aptitudes. Of the students participating in the study, those who reported higher

levels of career decision-making self-efficacy exhibited more mature attitudes toward the career decision-making process (Luzzo, 1993).

The findings of Luzzo (1993) and of Taylor and Betz (1983) have been supported in a number of research studies. Many of these studies have focused on the psychometric properties of the CDESES instrument, as well as the relationship between the career decision-making process and career self-efficacy. Reliability and validity data have been reported for the CDESES and the instrument is based on clearly defined social-cognitive theory (Bandura, 1977). Although there are limitations of the CDESES with respect to validity, researchers who have used the instrument in various studies have found it to be a useful tool in measuring the role of self-efficacy expectations in the career decision-making process and there is adequate evidence to support the continued use of the CDESES in career development research (Luzzo, 1996).

Taylor and Popma (1990) replicated Taylor and Betz's (1983) original study, finding CDESES scores the only significant predictor of vocational indecision. In the Taylor and Popma (1990) study, CDESES scores were not significantly related to gender and their factor analysis of the data supported characterizing the CDESES as a global measure of career decision self-efficacy. In 1985, Robbins investigated the relationships between CDESES and other measures of self-esteem, vocational identity, and career indecisiveness. Robbins found CDESES scores were significantly correlated with career indecision and identified an overlap between the five subscales originally defined by Taylor and Betz (1983). According to Robbins (1985), the data supported the CDESES as a general measure of self-efficacy for career decision-making tasks. In 1993, Peterson

utilized the CDSES in a study of “under-prepared” college students at the University of Minnesota. Peterson (1993a) found that Hispanic and Caucasian students scored significantly higher on the CDSES than did Native American or Asian students and African-Americans reported significantly higher career decision self-efficacy than did Native Americans, Asians or Caucasians. In the Peterson (1993a) study, the variables related to stronger career decision-making self-efficacy included higher career aspirations, higher age and higher grades. Stronger career self-efficacy was also related to higher levels of both maternal and paternal education, as well as to professional versus homemaker mothers. Peterson (1993b) also concluded the CDSES was a useful predictor of overall academic and social integration, and suggested that interventions to increase career decision self-efficacy should be strongly considered in programs designed to improve student retention.

As reported in this review of the literature, the CDSES has been established as a research instrument related to career decision-making and career self-efficacy. The researcher acknowledges the limitations of the CDSES, particularly those limitations pertaining to validity. The CDSES has been utilized in this research study because it has been shown to be a useful measure of career self-efficacy and because it has multiple implications for future research in the field of career decision-making.

### **Career Decision-Making**

Career decision-making has been studied from the perspective of the ability to make a decision relating to a career, as well as the inability to make a decision relating to a career. In reviewing the literature pertaining to career decision-making, the ability to



make a career decision and the inability to make a career decision are frequently discussed in conjunction with each other. Osipow (1987) stated that career indecision included the rationale that a finite number of relatively discrete problems prevented people from reaching closure for educational and vocational decisions. Crites (1969) has described career indecision as the inability to select or to commit to a particular course of action that would eventually lead to preparing for a specific occupation and subsequently entering that occupation. Walsh (1987) focused on the process of making a decision from the standpoint of choosing a specific course of action from available alternatives. In describing the process by which an individual chooses a specific course of action, Walsh also described barriers to decision-making and suggested various methods by which an individual could improve the ability to make a decision. With regard to vocational choices, Walsh compared the decision-making process to problem solving, stating that understanding the tasks involved in making vocational choices would be useful to individuals. According to Walsh (1987), individuals could improve their ability to make a decision by identifying alternatives, gathering information, and using the information gathered to evaluate alternatives.

The gathering of information and the use of the information to evaluate alternatives are related to LoCascio's description of vocational decision-making. In 1964, LoCascio described vocational decision-making from the viewpoint of delayed and impaired vocational development. LoCascio hypothesized a model of continuous development in which he stated that individuals, when faced with a vocational developmental task, would apply vocationally relevant behavior from their own

backgrounds to their present situations. Vocationally relevant learning would then occur when an individual coped with a vocational developmental task and incorporated this learning into his or her existing behavior. According to LoCascio (1964), vocational decision was delayed or impaired if an individual lacked an awareness of the vocational developmental task, was unwilling to cope with the task or was unable to cope with the task.

Vocational indecision was also the subject of related research by Holland and Holland (1977). In a study involving over 1,600 high school and college students, Holland and Holland attempted to identify and characterize the differences between those who considered themselves vocationally decisive and those who considered themselves vocationally indecisive. Students who reported they experienced difficulties in making vocational choices were characterized by their lack of self-confidence, lack of involvement, anxiety, unclear identity, and poor decision-making skills. According to Holland and Holland (1977), decision-making could be improved for those students who were indecisive through workshops, counseling, presentation of occupational information, and vocational decision-making training.

Identifying the characteristics of student decisiveness was also the focus of research by Multon, Heppner, and Lapan (1995). In a study of 196 tenth, eleventh, and twelfth graders, the researchers differentiated subtypes based on level of career decisiveness and goal instability. The first subtype was characterized by career undecidedness and general indecisiveness. Students in this subtype were not comfortable in choosing a career and lacked knowledge of careers. The second subtype

consisted of students who expressed a clear career direction. Subtype Two students also expressed goal instability and anxiety; the researchers hypothesized students in this subtype had been told by an external source what their occupation should be. Subtype Three students exhibited different characteristics from Subtype One and Subtype Two students. These students indicated they knew their values and their goals, but were less clear about their career decisions. Subtype Three students were referred to by Multon, Heppner, and Lapan (1995) as developmentally normal. Subtype Four students exhibited greater positive affectivity and expressed more comfort in their career decision-making ability than students in any of the other three subtypes. These students were described as requiring very little intervention in choosing their career paths. Each of the four subtypes of students identified in this study exhibited different characteristics with regard to career choice and the study provided evidence that career-undecided high school students were not a homogeneous group (Multon, Heppner, & Lapan, 1995).

### **Career Decisiveness and Adolescent Development**

The question of career decisiveness as it relates to students, and particularly to high school students, has also been examined from the standpoint of adolescent development. Erickson (1968) considered the exploration of occupations to be one of the primary developmental tasks of adolescents. Hartman and Hartman (1982) described the later years of high school as a particularly crucial period in the career development of students. Ginzberg, Ginsberg, Axelrad, and Herma (1951) wrote that young adults should have become established in their work and begun the initial phase of a career by their early to mid-twenties.

Similar recommendations resulted from a study by Mortimer, Zimmer-Gembeck, Holmes, and Shanahan (2002). In a longitudinal study of 1,000 youth in St. Paul, Minnesota, the researchers followed students over a four-year period, beginning when the students were approximately 14 years old. The research involved both qualitative and quantitative methods; students were given questionnaires and a selected number of students were interviewed. Findings indicated the process of vocational exploration should begin during high school, when early experiences can influence later choices. Additional information gained from the study included specific recommendations for helping students choose career paths by improving guidance for youth, providing information, and helping young adults explore potential careers (Mortimer, Zimmer-Gembeck, Holmes & Shanahan, 2002).

In related research, Super (1957) attributed various attitudes and behaviors of a vocational development nature to adolescents. Super developed a theory of stages of vocational behavior. According to Super (1957), young adults 14 – 18 years of age crystallize their attitudes and behaviors by becoming aware of the need to identify a vocational preference, using resources, formulating a general vocational preference, obtaining information concerning their vocational preference, and planning for their vocation. Crystallization of vocational preference is further refined when young adults 18 – 21 years of age begin to specify their preferences. Specification involves an awareness of the need to specify a vocational preference, to consider different factors, obtain information, to plan for the preferred occupation, and to exhibit confidence in their specific preference (Super, 1957).

The development of occupational decision processes during the high school years has also been described in a study by Jepsen (1975). Jepsen studied 207 Wisconsin high school students in rural areas. The data indicated females tended to express occupational choices with greater specificity in the 12<sup>th</sup> grade than in the 9<sup>th</sup> grade. Both males and females developed more complex information search strategies over time. When students reached the 12<sup>th</sup> grade, they exhibited more confident feelings about occupational choices. According to Jepsen (1975), results of the study suggested that decisions in high school involve selecting and processing occupational information rather than choosing among occupational goals.

The studies investigating the selection and processing of occupational information by students have spawned much related research and have naturally led to the development of instruments to measure the career decision-making process. The CDS (Osipow, Carney, Winer, Yanico, and Koschier, 1976) was designed to measure the career decision-making process and it has been utilized as a research tool in many studies.

### **Measurement of Career Decision**

The CDS was originally created to encourage self-counseling regarding career indecision and was designed to survey the status of students with respect to their decision-making process (Osipow, Carney, Winer, Yanico, & Koschier, 1976). The instrument is appropriate for male and female students in high school and college. It can be administered in a group or individually with minimal supervision. The amount of time estimated to complete the four-page instrument is 10 to 15 minutes. Students rate

their responses to the items on a scale of 1 to 4, based upon how closely each item describes their thinking about a career or an educational choice. A “4” indicates an item is exactly the way a student feels, a “3” indicates an item is very much like the student, a “2” indicates an item is only slightly like the student, and a “1” indicates the item does not describe the way the student feel at all (Osipow, Carney, Winer, Yancio, & Koschier, 1976).

The first 18 items of the CDS are scored items; item 19 is an open-ended item in which students may write anything they feel would describe them more adequately than the statements contained in the instrument. Items 1 and 2 are part of the Certainty Scale. The Certainty Scale measures the degree of certainty the students experience with regard to having made a decision about a major and a career. Items 3 through 18 measure career indecision and are part of the Indecision Scale. The instrument is scored by tabulating the ratings given for the Certainty Scale and the Indecision Scale. Percentile scores are then obtained by referring to the normative data contained in the manual for the following four normative groups: high school males, high school females, college males, college females. Scores are considered “high” if they are in the >84<sup>th</sup> percentile category, “middle” if they are in the 16<sup>th</sup>-84<sup>th</sup> percentile category and “low” if they are <16<sup>th</sup> percentile category. The Certainty and Indecision scales are inversely correlated. “High” Certainty Scale scores indicate certainty regarding the choice of a career and school major; scores in the “low” category are considered significant, indicating the student is uncertain about selecting a career and/or a major (Osipow, Carney, Winer, Yancio, & Koschier, 1976).

The reliability and validity of the CDS have been established by a number of researchers. Osipow, Carney, and Barak (1976) conducted a study of seven groups of Ohio State University students. The seven groups included 837 students. The results of the study yielded test-retest correlations of .90 and .82 for the Indecision Scale. Certainty and indecision item correlations varied from a low of .34 to a high of .82, with the majority of the correlations averaging between .60 and .80. Four factors accounted for 81% of the total variance. These factors included a lack of structure and confidence for vocational decision-making, personal conflict, difficulty in choosing between two attractive options and possible external barriers to decision-making. The CDS discriminated between students who were career-decided and those who were not decided. In addition to establishing reliability, the results of the study also indicated the potential of the CDS for measuring the effectiveness of vocational counseling interventions (Osipow, Carney & Barak, 1976).

Similar test-retest results for the CDS were obtained by Slaney, Palko-Nonemaker, and Alexander (1981). The Slaney et al. study compared the CDS with the Vocational Decision-Making Difficulty Scale (Holland & Holland, 1977). The subjects included 857 male and female undergraduates attending The University of Akron. Test-retest correlations ranged from .19 to .70 and the total CDS scores yielded a test-retest correlation of .70. Students in the Slaney et al. study retested after a 6-week interval. This interval differed from the 2-week interval between testing in the original study by Osipow, Carney, and Barak (1976). According to Slaney et al., the difference in the test-retest interval could have influenced the slightly lower test-retest scores

obtained in the Slaney et al. study. With regard to the CDS factors, only the lack of structure and confidence was replicated by Slaney et al. Slaney et al. (1981) stated the CDS was a promising way of effectively measuring career indecision and suggested additional studies to replicate the CDS factors.

The validity of the CDS was investigated by Osipow and Schweikert (1981). Their study was conducted with 119 first-year college students. The instruments given to the students included the CDS and the Herren Assessment of Career Decision Making, a measure of three styles of decision making (intuitive, dependent, and planful). The study predicted indecision scores on the CDS would be positively related to dependency and negatively related to planfulness. The results of the study indicated planfulness was negatively correlated with the CDS, as predicted. The researchers found a significant correlation between the overall CDS scores and dependence on the Herren scale. Significant correlations were also established for the CDS lack of structure/confidence factor with both the Herren intuition and dependence factors. As noted by Osipow and Schweikert, the correlations were low (.20, .22), but significant ( $p < .03$ ,  $p < .02$ ). The overall scores on the CDS and the Herren dependence scale were significantly correlated (.26,  $p < .004$ ). The researchers concluded that both instruments identified a similar network of career-decision events. The low, but significant, correlations were described by Osipow and Schweikert (1981) as establishing modest concurrent validity for the CDS.

The validity of the CDS was also investigated by Rogers and Westbrook (1983). Rogers and Westbrook administered the CDS, as well as the Holland and Holland Career



Indecision Scale (HHS), to 175 male college students enrolled in an introductory psychology course at North Carolina State University. Scores on the two instruments were also compared with the students' Scholastic Aptitude Test (SAT) scores. Results of the study indicated the CDS was substantially correlated with the HHS ( $r = .70$ ). The measure of career indecision on the CDS did not reflect the SAT measures of mental ability and was negatively correlated with the SAT scores ( $r = -.29$ ). In the discussion of the results of the study, Rogers and Westbrook cited previous research of their own which indicated that many career maturity measures have more in common with mental ability than they do with each other. The authors stated that tests designed to discriminate between specific constructs should not duplicate verbal and quantitative ability. Therefore, the negative correlation between SAT scores and the CDS in the Rogers and Westbrook (1983) study was interpreted as supporting the construct validity of the CDS.

Additional validity data for the CDS has been reported in studies by Fuqua, Seaworth, and Newman (1987), by Hartman, Fuqua, and Blum (1985), and by Hartman, Fuqua, and Hartman (1983). Hartman, Fuqua, and Hartman (1983) administered the CDS to 206 students in a suburban Chicago high school. Students participated in a telephone survey three years after graduation; the results indicated the CDS could be used as a tool to identify more chronically career-indecisive students. Hartman, Fuqua, and Blum (1985) studied 155 students attending a suburban Chicago high school and 164 graduate students in the counseling program in a large midwestern university. Students were given the CDS, a measure of anxiety, a measure of identity, and a

measure of locus of control. Data from both studies supported the existence of different forms of career indecision that were also related to different levels of anxiety. In the Fuqua, Seaworth, and Newman (1987) study, undergraduate students were given four measures of anxiety and four measures of career indecision, including the CDS. The four measures of career indecision demonstrated correlations ranging from  $r = .80$  to  $r = .85$  and supported their concurrent validities as measures of career indecision (Fuqua, Seaworth & Newman, 1987).

The CDS has been extensively researched and has been the subject of several different reviews of career indecision instruments. Meier (1991) described the CDS as the “premier” scale in the career indecision literature. Harmon (1994) critiqued the CDS, citing what she termed as “impressive” validity evidence based on correlations with similar measures, treatment studies, and relationships with other personality variables. According to Harmon (1994), there probably was no better overall measure of career indecision than the CDS at that time.

### **Literature Review Summary**

The review of the literature has included numerous studies pertaining to career choice, with a specific emphasis on career self-efficacy and career decision-making. Career decision-making has been discussed with respect to the inability to reach closure regarding a career decision. Variables affecting career decision-making have been presented, including anxiety and self-efficacy. Self-efficacy has been shown to affect the manner in which career decision-making is approached, particularly with regard to aspirations, commitment, and perseverance. The instruments used in the study being

reported herein to measure the self-efficacy and career decision constructs have been used extensively in career studies and their psychometric properties have been presented. When investigated in conjunction with each other, self-efficacy and career indecision show promise of identifying high school students who need assistance in career decision-making.

## **CHAPTER III**

### **METHODOLOGY**

#### **Population and Sample**

The target population for this study included all Anglo, African-American and Hispanic high school students in selected rural Texas communities. The sample was drawn from 2003-2004 sophomore and senior students in three rural high schools in South Central Texas. In order to maintain anonymity, the high schools in which the research was conducted have been given the names of Birch High School, Elm High School and Oak High School.

In 2000, the county in which the three high schools are located had a population of 16,000 (Texas State Historical Association, 2002). The county in which the schools are located represents an area of South Central Texas that is within 200 miles of 85% of the population of Texas. The county is located within 100 miles of Houston and Austin, and within 200 miles of the Dallas/Fort Worth area. Settlers arrived in this county as early as 1825 and were predominantly of European origin. In 1830, the Mexican government established a fort in the northeastern part of the county. Following the establishment of this fort, other groups of Anglo-American settlers migrated to the area, and many of these settlers brought African-Americans with them as slaves. All of the ethnic groups represented in this study arrived in the area within a few years of each other and all played a role in the history of this area (Texas State Historical Association, 2002).

The county in which the schools are located is a part of a river basin; farming, ranching, oil and gas have been important factors in the development of this area. In addition to farming, ranching, oil and gas, the area is noted for typical rural community group activities such as recreational water sports, folk festivals, county fairs and youth rodeos (Texas State Historical Association, 2002).

The high schools included in this study were rated “academically acceptable” by the Texas Education Agency in 2003. Texas public schools may earn ratings of “exemplary,” “recognized,” “academically acceptable,” or “academically unacceptable” from the Texas Education Agency. A rating of “exemplary” is the highest rating and a rating of “academically unacceptable” is the lowest rating (Texas Education Agency, 2004a).

Birch High School was the largest high school in the study, with 604 students in grades nine through twelve. Elm High School was the smallest high school in the study, with 132 students in grades nine through twelve. Oak High School represented a middle ground between Elm High School and Birch High School, with 238 students in grades nine through twelve. These demographics represented the most recent official figures of the Texas Education Agency at the time the study was conducted and the information was based on statistics from the 2002-2003 school year (Texas Education Agency, 2004b). This information is reported in Table 1.

Table 1  
*Students by Grade Level in Birch, Elm, and Oak High Schools, 2002-2003*

	Birch High School		Elm High School		Oak High School	
	N	%	N	%	N	%
Students by Grade						
Grade 9	187	31.0	40	30.3	72	30.3
Grade 10	166	27.5	46	34.8	56	23.5
Grade 11	137	22.7	25	18.8	55	23.1
Grade 12	114	18.9	21	15.9	55	23.1
Total Students	604		132		238	

The students in Birch High School, Elm High School, and Oak High School who were contacted to participate in this study included the following: 111 seniors in Birch High School, 43 seniors in Oak High School, 29 seniors in Elm High School, 138 sophomores in Birch High School, 61 sophomores in Oak High School, and 30 sophomores in Elm High School. This information is reported in Table 2.

Of the students who were contacted to participate in this study, 17 seniors in Birch High School, 10 seniors in Oak High School, 7 seniors in Elm, 19 sophomores in Birch High School, 17 sophomores in Oak High School, and 4 sophomores in Elm High School participated in this study. The total sample upon which the results of this study are based consisted of 40 sophomores and 34 seniors in the three high schools combined. These students were selected on a non-random basis. This information is reported in Table 2.

The letters of consent requested from parents of senior students were mailed to 111 Birch High School parents, 43 Oak High School parents, and 29 Elm High School parents. Thirteen (11%) of the Birch High School parents gave their consent by returning the signed form, 7 (16%) of the Oak High School parents returned the signed form, and 3 (10%) of the Elm High School parents returned the signed consent form. For parents of seniors, the rate of return for the parent consent form varied from 10% to 16%. The letters of consent requested from parents of sophomores were mailed to 138 Birch High School parents, 61 Oak High School parents, and 30 Elm High School parents. Twenty-nine (21%) of the Birch High School parents gave their consent by

Table 2  
*Student Participation*

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	Students Participation Requested	Students Participating
Birch High School		
Seniors	111	17
Sophomores	138	19
Elm High School		
Seniors	29	7
Sophomores	30	4
Oak High School		
Seniors	43	10
Sophomores	61	17
Total	412	74

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returning the signed forms, 18 (29%) of the Oak High School parents gave their consent, and 10 (33%) of the Elm High School parents gave their consent. For the parents of sophomores, the rate of return for the parent consent form varied from 21% to 33%. This information has been included in Table 3.

### **Description of Independent and Demographic Variables Examined**

Students were asked to complete a data information form indicating high school, grade level, gender, ethnicity, age, average grades, mother's education, father's education, and future career plans; this information was used to describe the independent variables. A copy of the data information form is included in Appendix A. A summary of the students' responses on this form is included in Table 4.

#### *High School*

Students from Birch High School, Elm High School, and Oak High School participated in the study.

#### *Grade Level*

The sample consisted of 34 sophomores and 40 seniors.

#### *Gender*

The sample consisted of 31 males and 43 females.

#### *Ethnicity*

Students were given a choice of classifying themselves as African-American, Anglo, Hispanic or other. The students included in the data set classified themselves as follows: African-American, 12; Anglo, 51; Hispanic, 11.

Table 3  
*Parent Return of Consent Forms*

	Consent Requested	Consent Granted	Percentage of Return
<b>Birch High School</b>			
Senior Parents	111	13	11
Sophomore Parents	138	29	21
<b>Elm High School</b>			
Senior Parents	29	3	10
Sophomore Parents	30	10	33
<b>Oak High School</b>			
Senior Parents	43	7	16
Sophomore Parents	61	18	29

Table 4  
*Data Information Form Results*

Variable	N	Percent
<b>Gender</b>		
Male	31	41.9
Female	43	58.1
<b>Ethnicity</b>		
African-American	12	16.2
Anglo	51	68.9
Hispanic	11	14.9
<b>Age</b>		
15	10	13.5
16	30	40.5
17	2	2.7
18	31	41.9
19	1	1.4
<b>Grade Level</b>		
Senior	40	45.9
Sophomore	34	54.1
<b>High School</b>		
Birch High School	36	48.6
Elm High School	11	14.9
Oak High School	27	36.5
<b>Estimated Grades</b>		
A	24	32.4
B	8	10.8
A/B	36	48.6
C	3	4.1
Other	3	4.1

Table 4, Continued  
*Data Information Form Results*

Variable	N	Percent
<b>Mother's Education</b>		
Completed High School	35	47.3
Completed Some High School	8	10.8
Completed College	18	24.3
Completed Some College	8	10.8
Other	2	2.7
Did Not Complete Form	3	4.1
<b>Father's Education</b>		
Completed High School	36	48.6
Completed Some High School	8	10.8
Completed College	14	18.9
Completed Some College	10	13.5
Other	2	2.7
Did Not Complete Form	4	5.4
<b>Future Plans</b>		
Vocational/Technological	2	2.7
Military	2	2.7
College	32	43.2
College/Work Part Time	16	21.6
College/Work Full Time	6	8.1
College and Vocational/Technological	2	2.7
College/Military	4	5.4
Work Full Time	8	10.8
Other	2	2.7

### *Age*

The ages listed on the data information form included the following: 15, 16, 17, 18, 19. An “other” category was also included; the “other” category provided space for the students to write their response and designate another age. Students indicated their ages as follows: one student reported an age of 19; 31 students reported they were 18 years of age; two students reported they were 17 years of age; 30 reported they were 16 years of age; 10 reported they were 15 years of age.

### *Average Grades*

The average grades at the end of the last six weeks that were listed on the data information form included the following: A’s, B’s, A’s and B’s, C’s. An “other” category was also included; students could write in their average grades. The students responded as follows: 24 students reported average grades of A’s; 8 students reported average grades of B’s; 36 students reported average grades of A’s and B’s; 3 students reported average grades of C’s, and 3 students marked the other category. Of the students who marked the “other” category, one student indicated A’s and C’s; two students indicated A’s, B’s, and C’s.

### *Future Plans*

In responding to this category on the data information form, students could choose vocational or technical training, military, college, work part time, work full time. An “other” category was also included and a space was provided for the student to write in the student’s future plans. Students could check more than one category. Thirty-two

students indicated they planned to go to college and 16 indicated they were going to college and work part time. Refer to Table 4 for a detailed list of the career choices.

#### *Mother's Education*

The choices for mother's education included completed high school, completed some high school, completed college, and completed some college. An "other" category was also included with a space in which the student could write the information. The majority of the students (35) indicated their mother completed high school and 18 students indicated their mother completed college. Of the three students who marked the "other" category, one student indicated nursing school, one wrote the word "none" and one wrote "school in Mexico." If a student marked two categories, such as completed high school and some college, the response was coded with the higher level category. Refer to Table 4 for additional information.

#### *Father's Education*

The choices for father's education included completed high school, completed some high school, completed college and completed some college. An "other" category was also included with a space in which the student could write the information. The majority of the students (36) indicated that their fathers completed high school, 14 students indicated that their fathers completed college, and 10 indicated their fathers completed some college. Two students marked the other category and four students did not mark any category. Of the students who marked the "other" category, one wrote "school in Mexico." The second student who marked the "other" category did not provide any additional information.

## **Dependent Variables**

### *Career Decision Scale*

The Indecision Scale of the third revision of the Career Decision Scale (CDS) (Osipow, Carney, Winer, Yanico & Koschier, 1976) was used to measure career indecision, the rationale that a finite number of relatively discrete problems prevent individuals from reaching closure for educational and vocational decisions (Osipow, 1987). The CDS was originally designed for use with male and female high school and college students to promote self-counseling, to survey the students' status in their decision-making process, to estimate career indecision, and to determine the effectiveness of interventions with regard to career choice. The instrument has potential usefulness for career counselors, researchers, and teachers who work with students in career decision-making (Osipow, 1987).

The third revision of the CDS was published in 1976 and is composed of two scales, a Certainty Scale and an Indecision Scale (Osipow, Carney, Winer, Yanico & Koschier, 1976). This instrument can be administered in groups within an estimated time period of 10 to 15 minutes and scored within an estimated time period of five minutes. The CDS contains 19 items. The student responds to the first 18 items by rating the answers to the items using the following scale: 1, "not at all like me," 2, "only slightly like me," 3, "very much like me," 4, "exactly like me." The last item is an open-ended question, providing the student with an opportunity to explain responses to items contained in the instrument or to comment on the items. The instrument was written in the English language and all students responded in English. A Spanish language

translator was available to assist any students moving into any of the districts during the course of the study who could have potentially been identified as bilingual or requiring assistance through the English as a Second Language (ESL) program.

The first two items on the CDS comprise the Certainty Scale, which provides a measure of the degree of certainty the student feels in having made a decision about a major and a career. The subsequent 16 items are part of the Indecision Scale, which measures career indecision. The last item is not part of either the Certainty Scale or the Indecision Scale, as it allows students to explain responses or provide comments regarding the instrument (Osipow, 1987).

Directions for the instrument include instructing the students to circle one of four responses to indicate the degree to which each of the items accurately describes the students. Additional directions include instructing the students to read the booklet instructions carefully and complete the ratings on the sample item. The instrument is scored by first totaling the ratings for the Indecision Scale and the Certainty Scales. After the ratings have been totaled, the appropriate norm group (high school female or male, sophomore or senior) and the percentiles corresponding to the raw scores for the two scales are also recorded. Indecision scores that equal or exceed the 85<sup>th</sup> percentile are considered to indicate a serious level of indecision and Certainty Scale scores at the 15<sup>th</sup> percentile or less suggest the student is uncertain about the selection of either a career and/or a major. Patterns of interactions between the two scales are classified with regard to interpretive hypotheses and include the following: little felt need for



intervention, further need for assessment, high likelihood of need for intervention, and possible invalid test data (Osipow, 1987)

*Career Decision Self-Efficacy Scale (Short Form)*

The Career Decision Self-Efficacy Scale (CDSES) was originally known as the Career Decision-Making Self-Efficacy Scale (CDMSES) (Taylor & Betz, 1983). The name of the instrument was changed as a result of the trademarking of the term “career decision-making” by Thomas Harrington and Arthur O’Shea of Career Planning Associates, Inc. (Betz & Taylor, 2001). Although the name was changed after the term “career decision-making” was trademarked, both of the instrument’s names appear in the literature.

The CDSES was developed by Taylor and Betz (1983) to measure an individual’s degree of belief that he/she can successfully complete tasks necessary to making career decisions. A short form of this instrument has been used in this research (Betz, Klein & Taylor, 1996). The short form consists of 25 items that measure responses on the following five scales: accurate self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving. Each of the five scales is measured by five questions contained in the instrument. In responding to the questions, students indicate their degree of self-confidence with respect to each of the items by using a rating scale, as follows: 1, “no confidence at all,” 2, “very little confidence,” 3, “moderate confidence,” 4, “much confidence,” and 5, “complete confidence” (Betz, Klein & Taylor, 1996).

The directions on the short form of the CDSES instruct the individual to read carefully, to indicate how much confidence the individual has that he/she could accomplish each of the tasks listed, and to mark the answers according to the key (Betz & Taylor, 2001). The instrument is appropriate for group or individual administration. Scores on each of the five scales could range from a low of 5 to maximum of 25, with higher scores indicating that the respondent felt a greater degree of confidence that he/she could perform the tasks comprising each of the five scales (Betz & Taylor, 2001).

The instrument was written in the English language and all students responded in English. As was the case with the CDS, a Spanish language translator was available to assist any students moving into any of the districts during the course of the study who could have potentially been identified as bilingual or requiring assistance through the English as a Second Language (ESL) program.

### **Procedure**

#### *Permission to Conduct Research*

The proposal for this dissertation was approved by the researcher's graduate committee in the summer of 2003 and by the Institutional Review Board (IRB) of Texas A&M University in the spring of 2004. The researcher first contacted the superintendent for the district in which Birch High School is located in an informal setting during a community event. This contact was followed by a formal meeting in the superintendent's office, during which the researcher explained the purpose of the research study. The researcher first contacted the superintendent of the district in which Oak High School is located during a high school sporting event. The superintendent

gave verbal approval for the researcher to conduct the study and referred the researcher to the high school principal to complete the arrangements. The researcher made an informal contact with the high school principal during the same sporting event and met with him later in his office to discuss the details of the study. The permission of the superintendent of the district in which Elm High School is located was obtained during a formal meeting in the superintendent's office. The high school principal was present during the meeting and consent was granted for the research to be conducted. In addition to the informal contacts and the formal meetings, the researcher gave each school district representative a brief summary of the proposed research (Appendix B).

#### *Utilization and Reproduction of Instruments*

The researcher requested permission from Dr. Betz to use the short form of the CDSES; permission was granted in April of 2004. Refer to Appendix C for a copy of the researcher's letter to Dr. Betz requesting permission to use the instrument and to Appendix D for a copy of Dr. Betz' reply.

The CDS (third revision) was purchased from a commercial publisher, Psychological Assessment Resources, Incorporated. Inclusion of a copy of this instrument in the dissertation would have required the payment of a fee to the publisher. The researcher did not elect to pay this fee; for this reason, a copy of the instrument was not included in the dissertation.

#### *Identification of Potential Subjects*

School registrars in Birch High School, Oak High School, and Elm High School were asked to provide the researcher with the names and addresses of the tenth and

twelfth grade students, and their parents or guardians, who were enrolled in English (advanced placement, honors and non-honors) classes. Registrars were also asked to identify any potential students, and/or the parents of these students, who would not be able to read the letters and other information unless it was translated into Spanish. A list of the students' dates of birth was also obtained from the registrars; this information was obtained in order to identify those students who would not need parental permission to participate in the study. During the course of the study, the researcher verified the student counts in the sophomore and senior classes with the registrars in all three high schools in order to identify any new students in these classes who might have enrolled during the study or any students in these grades who might withdraw during the study. During the study, there was no change in the sophomore or senior class enrollment in any of the three high schools.

#### *Language Considerations*

As stated above, registrars were asked to identify both parents and students who would understand the materials only if they were translated into a different language. The registrars reported that no translations into other languages were required for any of the students. With regard to the parents, one family with students enrolled in Elm High School needed materials translated into Spanish. Both of these parents speak Spanish only; their children speak English and Spanish. These parents have a student in the Elm High School senior class and a student in the Elm High School sophomore class. When materials were sent to this family, two sets of materials were mailed in two different envelopes (one set of materials for the senior student and one set of materials for the

sophomore student); both an English language and a Spanish language version of the materials were included in each letter. This procedure was followed throughout the study. A Spanish language translator was also available during the course of the study; no circumstances occurred which would have required the translator's assistance. A purchased translation program, Word Magic English Spanish Interpreter, Version 3.14, was used to translate the written material into the Spanish language. The written material was also submitted to the researcher's doctoral committee co-chair, Dr. Gonzalo Garcia, for translation review.

#### *Parent Contacts*

The first contact with parents was in the form of a letter, dated April 25, 2004, in which the researcher explained that the three school districts had given permission for the researcher to conduct a study of high school seniors and sophomores. The study was described as a study dealing with the plans students make for the careers they would pursue after high school. Parents were informed they would receive additional information in about a week and a half and the additional information would contain a permission form for the parents to allow their sons/daughters to participate. The letter also mentioned that the study would be explained to the students at their high schools and students would be asked if they would agree to participate. Refer to Appendices E and F for a copy of the letters that were written in English and in Spanish. The letters were mailed the evening of April 24; letters were sorted by zip code and mailed from the three different post offices in the towns in which the high schools are located. All parent materials that were mailed to parents during the course of the study were sorted by zip

code and mailed from one of the three post offices in the towns in which the high schools are located.

The second contact with the parents was a letter explaining the study, accompanied by a parent consent form. The letter was mailed a week and a half after the first letter and it met the requirements of the Institutional Review Board (IRB) of Texas A&M University. A brief description of the researcher's background was included in the letter to the parents, and the letter included the information that the study was a part of the researcher's degree program at Texas A&M University. The importance of the study was cited as the potential to identify specific activities or job-related experiences that might help students prepare for their future. Other topics discussed in the letter included the following: sharing of the results with school officials, confidentiality of student responses, description of the instruments, an estimation of the time required to complete the study, and a description of the procedure students could use to withdraw from the study. Parents were asked to give their permission for their son/daughter to participate and to return the permission form within three days. A stamped envelope with the researcher's name and address was included. Copies of the letters, in English and in Spanish, have been included in Appendices G and H.

The second contact with the parents also included a parent consent form. The parent consent form addressed all of the information contained in the second letter to the parents and provided a more in-depth description of why the parents' sons/daughters were selected to participate in the study, as well as a more detailed description of the instruments to which the students would be asked to respond. The parent consent form

informed the parents that the study would not be video taped and that participating students would not be compensated. Detailed contact information was given for contacting the Texas A&M University IRB representative, the researcher's university supervisors, and the high school principals. On the second page of the form, a space was provided for the parents to indicate if they wanted to receive a copy of the findings of the study. A copy of the parent consent form was also included for the parents to keep if they so desired; the words "copy keep for your records" were superimposed on the consent form that was included for the parent to keep. For a copy of the parent consent forms, in English and in Spanish, refer to Appendices I and J. Materials were provided in Spanish for the family previously identified in the "Language Considerations" section of this chapter.

The first letter that was mailed to parents was reproduced on white paper. In order to avoid the possibility of confusing the parent responses from the three different schools, subsequent parent letters and parent consent forms were color-coded. Yellow paper was used for Birch High School parents, brown paper for Elm High School parents and green paper for Oak High School parents.

#### *Parent Responses*

Several days after the first letter had been mailed to the parents, a Birch High School parent called the researcher at home to obtain additional information about the study. In addition to the telephone call from the Birch High School parent, one of the seniors in Elm High School visited the researcher's office to ask about the letter her parents had received.

Within five days after mailing the parent consent forms; the researcher received four consent forms from Birch High School, two from Elm High School and three from Oak High School in the mail. Additional forms were received by mail during the second week after the forms had been mailed to the parents. Only one form was received after the study had been concluded. This form was from a parent of a senior in Birch High School and it was received the first week in June, 2004. The form was filed with the other materials pertaining to the study.

Although parents responded formally and mailed their consent forms to the researcher, informal contacts also contributed to the receipt of the forms. Forms were returned to the researcher following unanticipated meetings between the researcher and parents in the post office and the grocery store. The informal contacts were not part of the design of the study and the information has been included to illustrate the rural nature of the communities within which the research was conducted.

A few of the letters that were mailed were undeliverable, due to incorrect addresses. This occurred with the parents of the following: three seniors from Birch High School, one senior from Elm High School and one senior from Oak High School. The letters were not returned by the post office in time for the researcher to ask the registrars for correct addresses.

#### *Acknowledgement of Parent Contacts*

After the researcher received the parent consent forms, the researcher signed each form and mailed a copy to the parent. Not every student for whom the parent gave consent to participate actually participated in the study. A copy of each parent consent



form was mailed to the parent, with a letter stating that not all of the students had actually participated in the study. The letters and copies of the consent forms were mailed in early June, 2004. A copy of this letter is contained in Appendix K.

### *Student Contacts*

The researcher first contacted the students in their high school English classes (advanced placement, honors, non-honors). The principals gave the researcher permission to visit the English classes and the principals were responsible for informing the teachers. In Birch High School and Oak High School, the principals introduced the researcher to an English teacher, who then introduced the researcher to the other English teachers. In Elm High School, the high school principal asked the researcher to contact the English teachers.

When the researcher began the presentations to the students, the teachers asked the students for their attention and told the students a visitor wanted to talk to them. In Elm High School, the researcher was introduced by name. The presentations to the students were approximately 15 minutes each, and students had an opportunity to ask questions. Following the presentations and questions, the student assent forms were distributed. Students signed their forms at that time and the researcher collected the forms. Students were instructed to return the unsigned forms if they did not wish to participate in the study. The researcher spent one day on each high school campus for the purpose of making presentations to the students. These presentations occurred between two and three weeks before the end of the school year. The researcher also

distributed extra copies of the parent consent form to the students during her visits to the classes.

The researcher began the presentations by introducing herself as an administrator in the Elm Independent School District and a student at Texas A&M University who was required to conduct a research study as part of her graduation requirements. Students were informed the study involved career decisions. Additional information conveyed to the students included why they were being asked to participate, how many other students were being asked to participate, a general description of the types of tasks involved in the study and the possible benefits associated with participation. In order to minimize the possibility that students might bias their answers, students were informed there were no “right” or “wrong” answers. Students were also told the results would be used to help school districts provide assistance to students with the career decision-making process and they were reminded it was important for everyone to indicate his or her “true” feelings when answering the questions. Procedures for withdrawing from the study were communicated and the anonymous nature of the study was stressed. Students were told that letters had been mailed to their parents, a copy of the second letter that had been mailed to the parents was displayed by the researcher, and students were asked if they needed additional forms to give to their parents. Students were reminded that anyone who was not yet 18 years of age would need to sign his/her assent form and his/her parents must also sign a consent form in order to participate in the study (Texas Education Agency, 1998, p.717). Copies of the student assent forms are included in Appendices L and M. The student assent form complies with the Texas A&M

University IRB format and contains essentially the same information as the information presented in the parent consent form. In making the presentations to the students, the researcher used the student assent form as a point of reference in order to avoid forgetting to convey important information.

Students were given the opportunity to ask questions regarding the study. A student asked if the “test” would tell him what kind of job he should take when he graduated and a number of the seniors asked if they could participate without the consent of their parents if they were 18 years old. A few students asked why sophomores and seniors had been chosen. One student asked if participating in the study would be fun. The researcher used the word “compensation” with the intention of informing the students they would not receive money for participating in the study. Students in several different classes asked if this meant they were going to be paid to participate. Some students indicated they wanted a copy of the findings and inquired if the researcher would send a copy of the findings to an electronic mail address because they would not be living at home after graduation. In some classes, students asked how much time the study would take and indicated they also needed time to complete class projects.

#### *Acknowledgement of Student Contacts*

The researcher signed the student assent forms for those students who had parental consent forms or who were of age to give their own assent. The copies were returned to the registrars on each individual campus for distribution. Although not every student who signed an assent form participated in the study, copies were returned to each student who signed the form. A letter acknowledging the student’s willingness to

participate accompanied the copy of the assent form. Appendix N contains a copy of this letter. The copies of the signed assent forms were returned to each campus on Monday of the last week of school in May. All of the registrars agreed to distribute the copies to the students. At Birch High School, the seniors had already been released and were not on campus. The researcher mailed these copies in early June, 2004.

### *Research Sessions*

The study was conducted during the third week of May, 2004. Participants responded to instruments in groups; group administration was conducted within a week following the presentations to the classes. In all three high schools, principals allowed the researcher to use the school libraries. None of the sessions were disturbed by morning announcements. Air conditioning and lighting were adequate. Although it was warm outside, the libraries were comfortable. A light rain fell during the last session of the day at Birch High School.

Prior to beginning the research sessions, the researcher matched the parent consent form with the student assent forms for those who were not yet 18 years of age. The researcher also reviewed the student assent forms, and the information supplied by the school registrars, to determine the students who could participate without the permission of their parents because they were 18 years of age. Lists were then compiled by class of those for whom the correct permissions to participate had been obtained. Sessions were held as follows: all sophomores in English classes during a particular period were given the instruments during the same session and all seniors in English classes during a particular period were given the instruments during the same session.

Seniors were not mixed with sophomores for the purposes of this research. At the beginning of each class period, the researcher went to the classrooms and asked for the students for whom the proper permission had been received. In a few instances, students for whom the researcher asked indicated they had changed their minds and would not participate in the study. In one of the high schools, a teacher in a senior English class started a video just prior to the researcher's arrival in the room to call for the students; none of the seniors in this class chose to participate in the study.

#### *Administration of Instruments*

The researcher spent one day on each of the three campuses conducting the study. Each session lasted approximately 15 to 20 minutes. When each session began, students were asked if they needed a pencil or a pen and these were supplied by the researcher if requested. Students were also instructed not to write their names on any of the materials. The data information form was the first instrument given to the students to complete; it was followed by the CDS and the short form of the CDSES. Each instrument was distributed separately. The researcher waited for everyone to finish each instrument before distributing the next instrument. After the students completed their instruments, they were instructed to place everything inside the CDS booklet. After several sessions on the first campus, the researcher realized it could become difficult to keep each student's materials separate from those of the other students. Subsequently, the researcher asked the students to devise their own four digit numerical code and to record this code on all of their instruments.

When the data information form was distributed, students were informed they could ask questions if they needed any explanations. In each high school, students asked if “Anglo” meant white. Students also asked if they could check more than one of the future plans categories. In each instance the researcher replied in the affirmative. Students did not ask questions about any other categories.

The CDS was given to the students after the data information form. The researcher had previously planned to read the directions to the students in order to insure uniformity in administering the instrument and to preclude anyone from completing the questions without reading the directions. During the first two sessions, the researcher read the directions to the students and explained the directions were being read in order to be certain that everyone understood what they were to do to answer the questions. The students wanted to read the directions and they told the researcher they were old enough to read. Students also appeared to be bored when the instructions were read to them. After the second session, the researcher discontinued the practice of reading the directions. Standardization was not maintained because the directions were not read to the remaining groups of students.

In completing their responses to the questions on the CDS, students asked for clarification with two different types of questions. One request for clarification involved the last item on the CDS. This item offered the students an opportunity to write anything they thought would better describe them. When asked, the researcher informed the students they could answer this item if they thought it applied to them. The other request for clarification involved items containing blank spaces. In order to respond to the items

containing blank spaces, students were supposed to think of a career in which they were interested and respond to the item based upon the career in which they were interested. After students asked these questions in the first session, the researcher waited for the students to read the directions, mentioned there were three questions which contained blank spaces, and provided the explanation. Several students asked if they were supposed to write the names of the careers they were considering in the blank spaces. The researcher told them they were not required to write the names of the careers in the blanks, but they could do so if it made it easier for them to respond to the questions. None of the students wrote in any of the blank spaces or supplied any additional information in response to the last question.

The CDSES (short form) was the third instrument given to the students during the research sessions. When the first group of students began reading the instrument, they informed the researcher there was a mistake in one of the questions. The mistake involved a typographical error in question nine; the word “job” was spelled “kob.” The researcher instructed the students in the first session to correct this error. In subsequent sessions, the researcher rectified this error by drawing a line through the misspelled word and printing the correct word. Students did not ask any questions about the CDSES.

#### *Scoring of Instruments*

The Data Information form was analyzed and responses were coded. The CDS was scored according to the manual that accompanied the instrument. The total points were calculated for the certainty scale (first two questions) and for the indecision scale

(questions three through eighteen). The norms were recorded in the scoring box (high school female or male, senior or sophomore). Percentiles were then obtained for certainty and indecision by referencing the scoring chart in the manual. These percentiles were further categorized according to the following: further need for assessment, little felt need for intervention, high likelihood of need for intervention, and possible invalid test data.

The CDSSES was scored according to the manual that accompanied the instrument. Scale 1, Self-Appraisal, was scored by totaling the responses to items 5, 9, 14, 18 and 22; Scale 2, Occupational Information was scored by totaling the responses to items 1, 10, 15, 19, 23; Scale 3, Goal Selection was scored by totaling the responses to items 2, 6, 11, 16 and 20; Scale 4, Planning, was scored by totaling the responses to items 3, 7, 12, 21 and 24; Scale 5 was scored by totaling the responses to items 4, 8, 13, 17 and 25. The total score for the instrument was obtained by totaling the responses to all 25 items. According to Betz (2001), higher scores indicate a greater degree of confidence in a person's ability to complete successfully the tasks necessary to making career decisions. The maximum score that could be attained on each scale was 25 and the maximum score that could be attained on the instrument was 125.

#### *Data Analysis*

The data were analyzed with the 11.5 microcomputer version of the Statistical Package for the Social Sciences for windows. Descriptive statistics were used to analyze the sample data from students who participated in the study. ANOVAs were performed when one dependent variable was analyzed and MANOVAs were performed when more



than one dependent variable was analyzed (Gall, Borg & Gall, 1996). The .05 level of statistical significance was established for the study.

#### *Communication of Results*

A letter containing a brief summary of results was mailed to the superintendents of the school districts and to the principals of the high schools involved in the study in November, 2004. A copy of the letter is included in Appendix O.

A letter containing a brief summary of results was mailed to parents and students who had indicated they wanted to receive these data. The letters were mailed in November, 2004. A copy of the letter is included in Appendix P and a copy of the results is included in Appendix Q. Although not every student who indicated he/she wanted to be informed of the results actually participated in the study, the researcher mailed copies to everyone who wanted this information. This same procedure was followed with respect to communicating with the parents who gave their permission for their son/daughter to participate in the study.

## **CHAPTER IV**

### **RESULTS**

#### **Introduction**

This chapter addresses the three research questions investigated in this dissertation. Data are presented for each of the research questions. Because the analysis of the students' responses to the instruments involved a comparison of means, tables of means have been included in this chapter. A supplementary analysis of three additional research questions was conducted to determine if the students' responses, when analyzed by school, were similar to the responses of all students participating in the study. The supplementary analysis also included a comparison between the career indecision scores obtained in this study and the Career Indecision subscale interpretive hypotheses presented in the Career Decision Scale (CDS) manual (Osipow, 1987).

#### **Research Questions**

##### *Research Question One*

Are there differences among Anglo, African-American, and Hispanic students with respect to career indecision?

The dependent variable, career indecision, was determined by student responses to the CDS Indecision subscale. Because one dependent variable was investigated in the first research question, a univariate analysis of variance (ANOVA) was conducted. No significant differences among the means by ethnicity were found for career indecision  $F(2,73) = .475$ . The means for the student responses, by ethnic group, are included in Table 5. The ANOVA results are included in Table 6.

Table 5  
*Means and Standard Deviations for Career Indecision  
 by Ethnicity*

Ethnicity	N	Mean	Std. Deviation
African-American	12	32.17	9.504
Anglo	51	29.53	8.814
Hispanic	11	29.00	9.602
Total	74	29.88	8.973

Table 6  
*Analysis of Variance Results for Career Indecision by Ethnicity*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	77.533	2	38.766	.475	.624
Error	5800.373	71	81.695		
Total	71939.000	74			
Corrected Total	5877.905	73			

### *Research Question Two*

Are there differences among Anglo, African-American, and Hispanic students with respect to feelings of self-efficacy?

The dependent variable, self-efficacy, was determined by student responses to the Career Decision Self-Efficacy Scale (CDSES). A univariate ANOVA was conducted for question two. No significant differences among the means for self-efficacy  $F(2,73) = .499$  by ethnicity were obtained. The means for the student responses by ethnic group for self-efficacy are included in Table 7. The results of the ANOVA analysis are included in Table 8.

### *Research Question Three*

For each of the three ethnic groups, two genders, two grade levels, and the groups which result from the combinations of ethnicity, gender, and grade level, are there differences in career indecision and self-efficacy?

As described in the first two research questions, self-efficacy was determined by student responses to the CDSES and career indecision was determined by student responses to the CDS, Indecision subscale. Because two dependent variables were investigated in the third research question, a multivariate analysis of variance (MANOVA) was conducted. The results of this MANOVA are contained in Table 9.

No significant main effects were found for gender, ethnicity, and grade level. The results obtained for gender were  $F(1,73) = .130$  on career indecision and

Table 7  
*Means and Standard Deviations for Self-Efficacy by Ethnicity*

Ethnicity	N	Mean	Std. Deviation
African-American	12	98.17	6.590
Anglo	51	101.22	10.691
Hispanic	11	99.27	12.125
Total	74	100.43	10.317

Table 8  
*Analysis of Variance Results for Self-Efficacy by Ethnicity*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	107.686	2	53.843	.499	.609
Error	7662.476	71	107.922		
Total	754184.000	74			
Corrected Total	7770.162	73			

Table 9  
*Multivariate Analysis of Variance Results for Self-Efficacy and Career Indecision by Gender, Grade Level, and Ethnicity*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Gender	Self-Efficacy	9.835	1	9.835	.093	.761
	Career Indecision	11.696	1	11.696	.130	.719
Grade Level	Self-Efficacy	189.634	1	189.634	1.796	.185
	Career Indecision	50.700	1	50.700	.565	.455
Ethnicity	Self-Efficacy	122.922	2	61.461	.582	.562
	Career Indecision	13.181	2	6.590	.073	.929
Gender* Grade Level	Self-Efficacy	53.410	1	53.410	.506	.480
	Career Indecision	11.933	1	11.933	.133	.717
Gender* Ethnicity	Self-Efficacy	102.764	2	51.382	.487	.617
	Career Indecision	16.786	2	8.393	.093	.911
Grade Level* Ethnicity	Self-Efficacy	74.517	2	37.258	.353	.704
	Career Indecision	71.229	2	35.615	.397	.674
Gender* Grade Level* Ethnicity	Self-Efficacy	588.444	2	294.222	2.786	.069
	Career Indecision	37.496	2	18.748	.209	.812
Error	Self-Efficacy	6546.811	62	105.594		
	Career Indecision	5565.742	62	89.770		
Total	Self-Efficacy	754184.000	74			
	Career Indecision	71939.000	74			
Corrected Total	Self-Efficacy	7770.162	73			
	Career Indecision	5877.905	73			

$F(1,73) = .093$  on self-efficacy. The results for ethnicity were  $F(2,73) = .073$  on career indecision and  $F(2,73) = .582$  on self-efficacy. The results obtained for grade level were  $F(1,73) = .565$  on career indecision and  $F(1,73) = 1.795$  on self-efficacy.

### **Supplementary Analysis**

Since one of the high schools included a very small sample of students in this study, a supplementary analysis was conducted with the data from all three high schools and also with the data from the two largest high schools only. School was included as an independent variable and the same three research questions were investigated. The career-indecision scores for sophomores and seniors were also analyzed with the interpretive hypotheses presented in the CDS manual for the Career Indecision subscale (Osipow, 1976). These hypotheses are based on a high (>84<sup>th</sup> percentile), middle (16-84<sup>th</sup> percentile), or low (<16<sup>th</sup> percentile) level of career indecision. Low career indecision scores represent little felt need for career intervention; middle scores represent a need for further assessment, and high scores are considered significant, representing a serious level of indecision.

#### *Supplementary Research Question One*

Are there differences among Anglo, African-American, and Hispanic students with respect to career indecision?

Career indecision was determined by the student responses to the CDS Indecision subscale. Because one dependent variable was investigated, an ANOVA was conducted. In this analysis, the independent variables included ethnicity and schools. No significant differences among the means by ethnicity were found for career indecision

$F(2,73) = .110$ . However, a significant (.015) main effect was obtained for the school variable  $F(2,73) = 4.509$  on career indecision. This analysis included the three high schools ( $N = 74$  students). The means for the three high schools on career indecision are contained in Table 10. The results of the ANOVA analysis are contained in Table 11.

The data were also analyzed using only the two larger high schools ( $N = 63$  students). When the smaller high school ( $N=11$ ) was removed from the data set, there was no significant main effect for ethnicity on career indecision  $F(2,62) = 1.073$ . The career indecision means for the two larger high schools, Birch High School and Oak High School, are contained in Table 12. The results of the ANOVA analysis are contained in Table 13.

#### *Supplementary Research Question Two*

Are there differences among Anglo, African-American, and Hispanic students with respect to feelings of self-efficacy?

Self-efficacy was determined by student responses to the CDSES. Because one dependent variable was investigated, an ANOVA was conducted. No significant differences among means by ethnicity were found for self-efficacy  $F(2,73) = .781$ . No significant main effects were found for the school variable on self-efficacy  $F(2,73) = .801$ . This analysis included the three high schools. The means for the three high schools for self-efficacy are included in Table 14. The results of the ANOVA analysis are contained in Table 15.



Table 10  
*Means and Standard Deviations for Career Indecision  
 by High School*

High School	N	Mean	Std. Deviation
Birch High School	36	32.00	7.761
Elm High School	11	28.55	11.326
Oak High School	27	27.59	9.124
Total	74	29.88	8.973

Table 11  
*Analysis of Variance Results for Career Indecision by High School and Ethnicity*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
School	677.203	2	338.601	4.509*	.015
Ethnicity	16.474	2	8.237	.110	.896
School* Ethnicity	536.323	4	134.081	1.785	.142
Error	4881.186	65	75.095		
Total	71939.000	74			
Corrected Total	5877.905	73			

\* Significant at  $\alpha < .05$

Table 12  
*Means and Standard Deviations for Career Indecision by the  
 Two Largest High Schools*

High School	N	Mean	Std. Deviation
Birch High School	36	32.00	7.761
Oak High School	27	27.59	9.124
Total	63	30.11	8.588

Table 13  
*Analysis of Variance Results for Career Indecision by the Two Largest High Schools*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	157.816	2	78.908	1.073	.349
Error	4414.406	60	73.573		
Total	61693.000	63			
Corrected Total	4572.222	62			

Table 14  
*Means and Standard Deviations on Self-Efficacy by High School*

High School	N	Mean	Std. Deviation
Birch High School	36	100.81	11.047
Elm High School	11	97.91	12.079
Oak High School	27	100.96	8.676
Total	74	100.43	10.317

Table 15  
*Analysis of Variance Results on Self-Efficacy by High School and Ethnicity*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
School	177.806	2	88.903	.801	.453
Ethnicity	132.941	2	66.471	.599	.552
School* Ethnicity	346.651	4	86.663	.781	.542
Error	7212.693	65	110.965		
Total	754184.000	74			
Corrected Total	7770.162	73			

The data were also analyzed using only the two larger high schools ( $N = 63$ ). When the smaller high school was removed from the data set ( $N = 11$ ), there were no significant main effects. The means for Birch High School and for Oak High School for self-efficacy are contained in Table 16. The results of the ANOVA are contained in Table 17.

#### *Supplementary Research Question Three*

For each of the three ethnic groups, two genders, and two grade levels, and the groups which result from the combinations of ethnicity, gender, and grade level, are there differences in career indecision and self-efficacy?

Career indecision was determined by student responses to the CDS Indecision Scale and self-efficacy was determined by student responses to the CDSES. A MANOVA was performed because two dependent variables were analyzed. Main effects were significant (.006) for grade level  $F(1,73) = 8.107$  on self-efficacy. Main effects were also significant (.011) for school  $F(2,73) = 4.943$  on career indecision. This analysis included the three high schools. The results of this analysis are contained in Table 18.

Significant differences (.048) were found between means for the interaction of ethnicity and gender on self-efficacy  $F(2,73) = 3.236$ . Significant differences (.042) were also found between means for the interaction of gender and grade level on self-efficacy  $F(1,73) = 4.351$ . This analysis included the three high schools.

Table 16  
*Means and Standard Deviations for Self-Efficacy by the Two Largest High Schools*

High School	N	Mean	Std. Deviation
Birch High School	36	100.81	11.047
Oak High School	27	100.96	8.676
Total	63	100.87	10.023

Table 17  
*Analysis of Variance Results on Self-Efficacy by Ethnicity for the Two Largest High Schools*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	78.763	2	39.382	.384	.683
Error	6150.221	60	102.504		
Total	647277.000	63			
Corrected Total	6228.984	62			

Table 18  
*Multivariate Analysis of Variance Results for Self-Efficacy and Career Indecision by School, Gender, Grade Level, and Ethnicity*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
School	Self-Efficacy	580.905	2	290.452	2.889	.065
	Career Indecision	754.610	2	377.305	4.943*	.011
Gender	Self-Efficacy	353.598	1	353.598	3.517	.067
	Career Indecision	2.371	1	2.371	.031	.861
Grade Level	Self-Efficacy	814.943	1	814.943	8.107*	.006
	Career Indecision	6.836	1	6.836	.090	.766
Ethnicity	Self-Efficacy	431.758	2	215.879	2.147	.128
	Career Indecision	18.152	2	9.076	.119	.888
School* Gender	Self-Efficacy	25.805	2	12.902	.128	.880
	Career Indecision	676.027	2	338.013	4.429	.017
School* Grade Level	Self-Efficacy	242.271	2	121.136	1.205	.309
	Career Indecision	6.768	2	3.384	.044	.957
School* Ethnicity	Self-Efficacy	879.310	2	219.827	2.187	.085
	Career Indecision	500.678	2	125.170	1.640	.180
Gender* Grade Level	Self-Efficacy	437.393	1	437.393	4.351*	.042
	Career Indecision	1.822	1	1.822	.024	.878
Gender* Ethnicity	Self-Efficacy	650.636	2	325.318	3.236*	.048
	Career Indecision	255.085	2	127.543	1.671	.199
Grade Level* Ethnicity	Self-Efficacy	472.016	2	236.008	2.348	.106
	Career Indecision	391.544	2	195.772	2.565	.087

Table 18, Continued

*Multivariate Analysis of Variance Results for Self-Efficacy and Career Indecision by School, Gender, Grade Level, and Ethnicity*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
School*	Self-Efficacy	553.624	2	276.812	2.754	.074
Gender*	Career Indecision	203.836	2	101.918	1.335	.273
Grade Level	Self-Efficacy	256.202	1	256.202	2.549	.117
School*	Career Indecision	18.219	1	18.219	.239	.627
Gender*	Self-Efficacy	.000	0			
Grade Level*	Career Indecision	.000	0			
Ethnicity	Self-Efficacy	.000	0			
Gender*	Career Indecision	.000	0			
Grade Level*	Self-Efficacy	.000	0			
Ethnicity	Career Indecision	.000	0			
School*	Self-Efficacy	.000	0			
Gender*	Career Indecision	.000	0			
Grade Level*	Self-Efficacy	.000	0			
Ethnicity	Career Indecision	.000	0			
Error	Self-Efficacy	4825.381	48	100.529		
	Career Indecision	3663.586	48	76.325		
Total	Self-Efficacy	754184.000	74			
	Career Indecision	71939.000	74			
Corrected Total	Self-Efficacy	5877.905	73			
	Career Indecision	7770.162	73			

\* Significant at  $\alpha < .05$

The data for the third research question was also analyzed using the two larger high schools (N=63). When the smaller high school was removed from the data set (N = 11), several significant main effect differences were found. A significant (.013) main effect difference existed for school on career indecision  $F(1,62) = 6.783$ . A significant (.029) main effect difference also existed for grade level on self-efficacy  $F(1,62) = 5.120$ . The means for the interactions between independent variables (schools, gender, grade level, ethnicity) also yielded significant differences. Significant differences (.025) were found for school and gender on career indecision,  $F(1,62) = 5.412$ . Refer to Table 19 for the results of this MANOVA.

When the career indecision scores for sophomores and seniors were analyzed using the interpretive hypotheses, 67% of the sophomores experienced middle to high levels of career indecision, 90% of the seniors experienced middle to high levels of career indecision and 79% of the total students involved in the study experienced middle to high levels of career indecision. Only 10% of the seniors, 32% of the sophomores and 20% of the total number of students experienced low levels of career indecision. High levels of career indecision were experienced by 27% of the seniors, 6% of the sophomores and 17% of the total number of students. Refer to Table 20 for the results of this analysis.

### **Summary Statement of Findings**

No significant findings were obtained for the three research questions investigated in this study. However, when a supplementary analysis of the three



Table 19  
*Multivariate Analysis of Variance Results for Self-Efficacy and Career Indecision by School, Gender, Grade Level, and Ethnicity for the Two Largest Schools*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
School	Self-Efficacy	108.639	1	108.639	1.019	.318
	Career Indecision	457.670	1	457.670	6.783*	.013
Gender	Self-Efficacy	172.545	1	172.545	1.619	.210
	Career Indecision	71.385	1	71.385	1.058	.309
Grade Level	Self-Efficacy	545.589	1	545.589	5.120*	.029
	Career Indecision	10.736	1	10.736	.159	.692
Ethnicity	Self-Efficacy	74.097	2	37.549	.352	.705
	Career Indecision	74.664	2	37.332	.553	.579
School*Gender	Self-Efficacy	5.225	1	5.225	.049	.826
	Career Indecision	365.148	1	365.148	5.412*	.025
School*Grade Level	Self-Efficacy	108.841	1	108.841	1.021	.318
	Career Indecision	4.825	1	4.825	.072	.790
School*Ethnicity	Self-Efficacy	278.727	2	139.363	1.308	.281
	Career Indecision	364.520	2	182.260	2.701	.078
Gender*Grade Level	Self-Efficacy	2.340	1	2.340	.022	.883
	Career Indecision	29.760	1	29.760	.441	.510
Gender*Ethnicity	Self-Efficacy	93.128	2	46.064	.432	.652
	Career Indecision	154.026	2	77.013	1.141	.329
Grade Level*Ethnicity	Self-Efficacy	472.016	2	236.008	2.215	.215
	Career Indecision	391.544	2	195.772	2.901	.066
School*Gender*Grade Level	Self-Efficacy	26.764	1	26.764	.251	.619
	Career Indecision	196.022	1	196.022	2.905	.095
School*Gender*Ethnicity	Self-Efficacy	.000	0			
	Career Indecision	.000	0			

Table 19, Continued

*Multivariate Analysis of Variance Results for Self-Efficacy and Career Indecision by School, Gender, Grade Level, and Ethnicity for the Two Largest Schools*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
School*	Self-Efficacy	.000	0			
Grade Level*	Career Indecision	.000	0			
Ethnicity	Career Indecision	.000	0			
School*Gender*	Self-Efficacy	.000	0			
Grade Level*	Career Indecision	.000	0			
Ethnicity	Career Indecision	.000	0			
Error	Self-Efficacy	4688.714	44	106.562		
	Career Indecision	2968.919	44	67.475		
Total	Self-Efficacy	647277.000	63			
	Career Indecision	61693.000	63			
Corrected Total	Self-Efficacy	6228.984	62			
	Career Indecision	4572.222	62			

\* Significant at  $\alpha < 0.05$

Table 20  
*Levels of Career Indecision*

	Seniors	Percent of Seniors	Sophomores	Percent of Sophomores	Total Students in Sample	Percent of Total Students in Sample
High Level Career Indecision ( $>84^{\text{th}}$ Percentile)	11	27	2	6	13	17
Middle Level Career Indecision ( $16^{\text{th}}$ to $84^{\text{th}}$ Percentile)	25	62	21	61	46	62
Low Level Career Indecision ( $< 16^{\text{th}}$ Percentile)	4	10	11	32	15	20
Middle to High Level Career Indecision ( $> 16^{\text{th}}$ Percentile)	36	90	23	67	59	79

research questions was conducted adding school as an independent variable, significant findings were obtained for research question three. Main effects were significant for grade level on self-efficacy, for school on career indecision, for the interaction of ethnicity and gender on self-efficacy and for the interaction of gender and grade level on self-efficacy. When the supplementary analysis was conducted using only the two larger schools in the study, significant main effects differences existed for school on career indecision, for grade level on self-efficacy, and for school and gender on career indecision. The conclusions, implications, and recommendations based on these findings will be presented in the Chapter V.

## **CHAPTER V**

### **SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS**

#### **Introduction**

This chapter summarizes the research findings of the study. A discussion of the study is presented, as well as the conclusions drawn from the findings of the research with their attendant implications. Recommendations for practice and future research are then presented.

#### **Summary**

This study was designed to obtain information that would be of value to secondary school personnel who provide career counseling and guidance to high school students preparing for post-secondary education, training, and employment. The researcher attempted to determine if sophomore and senior students representing different ethnic groups (African-American, Anglo, and Hispanic) varied significantly on specific characteristics that could potentially inhibit their career decision-making processes. The two specific characteristics investigated included career indecision, the rationale that a finite number of relatively discrete problems prevent people from reaching closure for educational and vocational decisions (Osipow, 1987), and self-efficacy, an individual's belief in his/her ability to successfully perform a given task or behavior (Bandura, 1977).

Three research questions were addressed in the study and a supplemental analysis of the data was also conducted. Research questions addressed in the study included the

following:

*Research Question One*

Are there differences among Anglo, African-American, and Hispanic students with respect to career indecision?

*Research Question Two*

Are there differences among Anglo, African-American, and Hispanic students with respect to feelings of self-efficacy?

*Research Question Three*

For each of the three ethnic groups, two genders, and two grade levels, and the groups that result from the combinations of ethnicity, gender and grade, are there differences in career indecision and self-efficacy?

*Supplementary Analysis*

A supplementary analysis of the data investigated the same three research questions for each of the three rural high schools. The purpose of the supplementary analysis was to determine if the results for the high schools followed the same pattern as the results of the entire group of students. Information regarding the means of the students' responses was included in the study, as well as student demographic information. Career indecision scores for the sophomores and seniors were also analyzed according to the interpretive hypotheses presented in the Career Decision Scale (CDS) manual.

The data were collected in the spring of 2004 in three rural high schools (Birch High School, Elm High School and Oak High School) in central Texas. The research

was approved by the Institutional Review Board of Texas A&M University (IRB) and permission to conduct the research was granted by each of the participating school districts. All students who were part of the study gave their assent. The consent of a parent or guardian was also secured for those students who were not 18 years of age. Seventeen percent of the students who were contacted participated in the study. Participants included 74 students. Of the 74 students who participated, 31 were male and 43 were female. The ethnic distribution of the sample included 51 Anglo students, 12 African-American students and 11 Hispanic students. The instruments to which the students responded included a data information form, the third revision of the Career Decision Scale (CDS) (Osipow, Carney, Winer, Yanico & Koschier, 1976), and the Career Decision Self-Efficacy Scale (CDSES) (Taylor and Betz, 1983). Student responses to the instruments were anonymous and students were allowed to withdraw from the study at any time.

The data were analyzed with the 11.5 microcomputer version of the Statistical Package for the Social Sciences for windows. An ANOVA was conducted to analyze the first two research questions because each of these questions involved one dependent variable. A MANOVA was conducted to analyze the third research question because this question involved more than one dependent variable. The same procedure was followed for the supplementary analysis of the data.

Two of the three research questions were designed to investigate differences between ethnic groups with regard to career indecision and feelings of self-efficacy. No significant main effects differences were found between Anglo, African-American, and

Hispanic students for career indecision or feelings of self-efficacy. The third research question was designed to determine possible differences between ethnicity, gender, and grade level with regard to career indecision and feelings of self-efficacy. As with the first two research questions, no significant main effects differences were obtained for the independent variables (ethnicity, gender, grade level) on career indecision or feelings of self-efficacy. The interaction between ethnicity, gender, and grade level on career indecision and feelings of self-efficacy also failed to yield significant results for the combinations resulting from these three independent variables.

Significant differences were obtained for some variables in the supplementary analysis of the data. When the school variable was treated as an independent variable for the first two research questions, a significant difference was obtained between the three ethnic groups on career indecision. No significant differences were found between the three ethnic groups on feelings of self-efficacy, but significant differences were found for the interaction of ethnicity, gender, and grade level. Significant main effects differences were obtained for grade level on self-efficacy and for school on career indecision. Both of these significant findings were obtained when the data were analyzed for all three schools and also when only the two largest schools were included in the data set. Significant differences were also obtained for the interaction of gender and grade level on self-efficacy, and for the interaction of ethnicity and gender on self-efficacy. These significant differences were obtained when the three schools were included in the data set. When only the two largest schools were included in the data set,



significant differences were found for the interaction between school and gender on career indecision.

### **Conclusions**

The first research question addressed differences among Anglo, African-American, and Hispanic students with respect to career indecision. The second research question addressed differences among the same three groups with respect to feelings of self-efficacy. No significant main effects differences were obtained for either of these two research questions. Consequently, for the three rural schools examined in this study, it was concluded that there were no significant differences among Anglo, African-American, and Anglo students on measures of career indecision and self-efficacy. Significant differences did not exist for ethnicity in this sample of tenth and twelfth grade rural high school students.

The third research question addressed differences between ethnicity (Anglo, African-American, Hispanic), gender (male, female), and grade level (senior, sophomore) with respect to career indecision and feelings of self-efficacy. There were no significant main effects differences for the independent variables (ethnicity, gender, grade level). No significant differences were obtained for the interaction between ethnicity, gender, and grade level on career indecision or feelings of self-efficacy. Consequently, for the three rural schools examined in this study, it was concluded that there were no significant differences on measures of career indecision and self-efficacy for the independent variables (ethnicity, gender, and grade level) or for the interaction between ethnicity, gender, and grade level. Significant differences did not exist for

career indecision and self-efficacy as a result of ethnicity, gender or grade level, or for any of the combinations of these independent variables.

A supplementary analysis of the data was conducted and the school variable was added as an independent variable for each research question. When the school variable was added to the supplementary analysis for the first research question, there were no significant differences between students of the three different ethnic groups on measures of career indecision. A significant main effects difference was obtained for the school variable on career indecision when all three schools were included in the analysis. When only the two larger schools were included in the analysis, no significant differences were found. It is therefore concluded that the two larger schools may have been similar to each other in the career indecision scores of the students. When the school variable was added to the supplementary analysis for the second research question, there were no significant differences on self-efficacy when all three schools were included in the analysis, or when only the two larger schools were included in the analysis. Therefore it is concluded that differences among the schools did not result in any significant differences in student self-efficacy.

The supplementary analysis of the third research question included school as an independent variable. Significant differences were found for combinations of ethnic groups, genders, and grade levels on career indecision and self-efficacy. Significant main effects differences were found for grade level on self-efficacy and for school on career indecision. These two main effects differences were significant when all three schools were included in the data set and when only the two largest schools in the study

were included in the data set. It was concluded that there were no significant differences between schools on these combinations of dependent and independent variables.

The supplementary analysis of the third research question for the combinations of ethnic groups, genders, and grade levels on career indecision and self-efficacy also indicated significant differences. These significant differences were found between the means for the interaction of gender and grade level on self-efficacy, as well as for the interaction of ethnicity and gender on self-efficacy. These significant differences were obtained when all three high schools were included in the analysis. When only the two largest high schools were included in the analysis, significant differences were found for school and gender on career indecision. It was therefore concluded that for the dependent variable self-efficacy, the two larger schools may have been similar to each other with regard to the combination of ethnicity and gender, as well as the combination of gender and grade level. Students in the smaller school exhibited significant differences on the dependent variable, career indecision, that were not significant for students in the two larger schools. Because significant differences were obtained when the independent variable, school, was included in the data analysis, and these significant differences changed when the larger schools were analyzed without the smaller school in the data set, the differences could be related to the fact that the two larger schools shared similarities that were reflected in the students' career indecision and self-efficacy.

The analysis of the career indecision data with the interpretive hypotheses designating high (>84<sup>th</sup> percentile), middle (16-84<sup>th</sup> percentile), or low (<16<sup>th</sup> percentile) levels of career indecision indicated middle to high levels of career indecision were

experienced by 67% of the sophomores, 90% of the seniors, and 79% of the total number of students involved in the study. Low levels of career indecision were experienced by 10% of the seniors, 32% of the sophomores, and 20% of the total number of students. High levels of career indecision were experienced by 27% of the seniors, 6% of the sophomores, and 17% of the total number of students. Based upon the analysis of the interpretive hypotheses, it was concluded that moderate to high levels of career indecision affected the majority of the students participating in the study, and that career indecision increased between the sophomore and senior years.

### **Discussion**

The purpose of the study was to determine if students from different ethnic groups varied significantly on career indecision and self-efficacy. This was accomplished by investigating main effects differences among ethnic groups on career indecision and self-efficacy and by investigating interaction effects on career indecision and self-efficacy resulting from the combinations of ethnicity, gender and grade level. The results of the data analysis failed to support any significant differences in career indecision or self-efficacy according to ethnicity. This same lack of significance was also upheld when the data were analyzed for differences in career indecision and self-efficacy on the interactions of grade level, gender, and ethnicity.

However, a supplementary analysis of the data indicated significant main effects differences for grade level on self-efficacy and for school on career indecision. The supplementary analysis also indicated significant differences between means for the interaction of ethnicity and gender on self-efficacy, for gender and grade level on self-

efficacy, and for school and gender on career indecision. Based upon the supplementary analysis, combinations of the independent variables (gender, ethnicity and grade level) varied significantly on both self-efficacy and career indecision. Significant differences were not identified until the combinations of gender, ethnicity, and grade level were analyzed and the independent school variable was included in the analysis. A large number of the students participating in the study experienced the need for career intervention (79%) and only a small number (20%) experienced a low level of indecision.

The results of the study would suggest that significant differences existed in career decision-making behaviors of rural students, specifically on career indecision and self-efficacy. Because significant results were not obtained until the school variable was added in the supplementary analysis, and the majority of the significant differences occurred with combinations of variables, the exact nature of the differences have not been determined in this study. Seventeen percent of the students who participated in the study exhibited a serious level of career indecision and 79% of the students exhibited a moderate to high degree of indecision. It should be noted that the size of the sample was relatively small ( $n=74$ ) and the majority of the students participating in the study were Anglo (67%). Consequently, the results should not be generalized to any population other than the one investigated in this study.

### **Implications**

Although the research questions investigated did not yield significant differences, the supplementary analysis of the data indicated that there were significant differences

when school was introduced as an independent variable. These significant differences imply that the dependent variables (career indecision and self-efficacy) vary as a result of differences between individual schools.

The data analysis also indicated that significant differences were present for the interaction of ethnicity and gender on self-efficacy, gender and grade level on self-efficacy and for school and gender on career indecision. These results have implications for the occurrence of differences in self-efficacy and career indecision when independent variables such as ethnicity, grade level and gender interact with each other. Additional research is recommended to investigate the interaction between the dependent and independent variables.

### **Recommendations**

The study was designed to obtain information that would be of value to secondary school personnel who provide career counseling and guidance to high school students as the students prepare for post-secondary education, training, and employment. Although the results of the study did not identify a specific group of rural students who were significantly more in need of career counseling and guidance than another group, a large percentage of the students who participated in the study exhibited a middle to high level of career indecision. The percentage of students who exhibited a middle to high level of career indecision also changed in between the sophomore and senior years, with 6% of the sophomores exhibiting a high level of career indecision and 27% of the seniors exhibiting a similar high level of career indecision. These students are in need of assistance and guidance from counselors to explore career goals, obtain information

regarding potential goals and make decisions regarding their future careers. Counselors have traditionally provided this assistance to the students who are preparing to enter colleges and universities; guidance should also be provided to those who will enter vocational and technical training.

Based upon these results, this researcher recommends a career exploration class be provided for high school juniors to assist them in preparing for the career decisions they will need to make when they graduate from high school. The curriculum for the career exploration class should be designed to address self-appraisal, goal selection, occupational information, planning, and problem solving, the specific competencies upon which the instruments used in this study are based. Although this study investigated career indecision and self-efficacy with sophomores and seniors, and the recommendations are based on these results, it would also be of value to consider career exploration for other grade levels. Because school districts offer math, science, and social studies courses in high school that build upon the competencies learned in junior high, and even in elementary school, the same sequencing of the curriculum could also be applied to career exploration courses.

In summary, this researcher's recommendations focus upon improving the career decision-making skills of rural high school students, particularly seniors, as they prepare to graduate from high school. A career exploration class involving self-appraisal, goal selection, occupational information, planning, and problem solving is recommended for rural junior level high school students. If districts do not find these specific recommendations feasible, career interventions could also be provided through existing

classes. For example, occupational information could be incorporated with library research skills, in social studies classes, in vocational education courses, and also in computer classes. Although the results of this study cannot be generalized to any population other than the one investigated in this study, it is reasonable to assume that providing career intervention to juniors would help them prepare for the decisions they will be making as seniors.

### **Recommendations for Future Research**

The recommendations for future research include replication of the present study and additional related studies. Because the Harris (1998) study found that tenth and twelfth grade White students attending an urban high school had less career indecision and were more self-effacious than African-American or Hispanic students, the researcher recommends replicating the present study with a larger group of students and a more adequate representation of African-American, and Hispanic, students. Replicating the present study with larger numbers of African-American and Hispanic students would provide additional data to determine if rural students exhibit career indecision and self-efficacy that is similar to that of urban students (Harris, 1998).

In order to conduct a study that would provide additional data on which to compare urban and rural students, the researcher recommends the replication of the present study be conducted in the fall, rather than in the spring. If the research were conducted in the fall, parents could be contacted in person during such events as parent-teacher open houses. By increasing the opportunities to visit with parents in person, this researcher believes it would be easier to obtain parental permission for



students to participate. In addition to increasing student participation by contacting parents during meetings at school, student interest might also be improved if the study were conducted before students were busy with exams or end-of-the-year activities. Because many of the rural high schools are not as large as the high schools in urban areas, the inclusion of additional rural high schools would doubtless increase the number of students participating in the research.

Related research is also recommended with regard to the examination of scores on the subscales of both the CDS and the CDSES. The CDSES contains measures of the following career choice competencies: accurate self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving. Studies examining the scores obtained on these five competencies would yield additional information concerning career behavior with respect to the specific areas of career choice, as well as possible interactions between the competencies. If differences were discovered between students on these competencies, school personnel could identify specific types of interventions that would be beneficial to students in the consideration of career choices.

A similar recommendation is made for the CDS. In addition to career indecision, the instrument also contains a certainty score, which measures the degree of certainty regarding the choice of a career and school major. Interpretive hypotheses regarding the likelihood of the need for intervention are also provided for the combinations of the two measures. If CDS scores were analyzed according to the need for intervention, students with a higher need for intervention could be identified.

In summary, future research utilizing the interpretive hypotheses from the CDS and the specific competencies from the CDESES could identify students in need of career intervention, as well as the specific areas in which intervention would be beneficial. This information would be of definite value to school administrators, counselors, and teachers as they work with rural youth to assist them in their career-planning endeavors.

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## APPENDIX A

## DATA INFORMATION FORM

Name of high school \_\_\_\_\_

Class in high school (Check appropriate blank)

Senior \_\_\_\_\_

Sophomore \_\_\_\_\_

Other \_\_\_\_\_

Gender (Check appropriate blank)

Male \_\_\_\_\_

Female \_\_\_\_\_

Average grades, end of the last six weeks

(Check appropriate blank)

A's \_\_\_\_\_

B's \_\_\_\_\_

A's and B's \_\_\_\_\_

C's \_\_\_\_\_

Other (list)

\_\_\_\_\_

Ethnicity (Check appropriate blank)

African American \_\_\_\_\_

Anglo \_\_\_\_\_

Hispanic \_\_\_\_\_

Other (Explain)

\_\_\_\_\_

Mother's Education (Check appropriate blank)

Completed high school \_\_\_\_\_

Completed some high school \_\_\_\_\_

Completed a four year college \_\_\_\_\_

Completed a two year college \_\_\_\_\_

Completed some college \_\_\_\_\_

Other \_\_\_\_\_

Father's Education (Check appropriate blank)

Completed high school \_\_\_\_\_

Completed some high school \_\_\_\_\_

Completed a four year college \_\_\_\_\_

Completed a two year college \_\_\_\_\_

Completed some college \_\_\_\_\_

Other \_\_\_\_\_

Your Future Plans

(Check appropriate blank)

Vocational or Technical  
Training \_\_\_\_\_

Military \_\_\_\_\_

College \_\_\_\_\_

Work Part Time \_\_\_\_\_

Work Full Time \_\_\_\_\_

Other (List) \_\_\_\_\_

\_\_\_\_\_



## APPENDIX B

### RESEARCH SUMMARY GIVEN TO SCHOOL DISTRICTS

#### Background and Purpose

The study is designed to investigate students' beliefs in their ability to successfully choose a future career and their career decisiveness.

The purpose of the study is to obtain information that could be used to plan career counseling and guidance for high school students.

#### Students

Permission is requested to give two short career decision instruments and one data information form (requesting such information as age, gender, ethnicity) to sophomores and seniors who are enrolled in AP, honors and non-honors English classes.

#### Permission

Students who participated must have the permission of their parents (if they are not 18 years of age). The students must also agree to participate. Students who are 18 years of age may agree to participate without the permission of their parents.

#### Forms

All permission forms will have the approval of the Institutional Review Board of Texas A&M University. The research will be supervised by Dr. Linda Parrish and Dr. Gonzalo Garcia, of Texas A&M University.

#### Time Required

School staff will not be involved in the testing. Two days will be required to conduct the study; one day to visit the classes and explain the research and one day to work with the students.

#### Results

A summary of results will be provided to the school district. A summary will also be provided to parents and students who request the summary.

Leonora Owre  
Snook ISD  
272-8307 Ext. 104  
owrel@snookisd.com

## APPENDIX C

## LETTER TO DR. BETZ

Dr. Nancy Betz  
Ohio State University  
478 Whitney Avenue  
Worthington, Ohio 43085

Dear Dr. Betz,

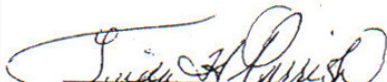
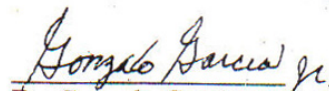
I am requesting your permission to use the Career Decision Self-Efficacy Scale in my doctoral research at Texas A&M University in College Station, Texas. I am also requesting permission to place a copy of the Career Decision Self-Efficacy Scale in the appendix of my dissertation. The co-chairs of my committee, Dr. Linda Parrish and Dr. Gonzalo Garcia, Jr., will supervise my research.

Thank you for considering my request.

Sincerely,



Martha Leonora Owre

  
Dr. Linda Parrish  
Dr. Gonzalo Garcia, Jr.

## APPENDIX D

## PERMISSION TO USE CAREER DECISION SELF-EFFICACY SCALE



Department of Psychology

238 Townshend Hall  
1885 Neil Avenue Mall  
Columbus, OH 43210-1222

Dear Unare: 3/18/04

You have my permission  
to use the CDMSE  
in your research and  
to include it in  
the Appendix of your  
Dissertation.

Nay E Bf  
3/18/04

**APPENDIX E****FIRST LETTER TO PARENTS (ENGLISH)**

1008 Walton  
College Station, Texas 77840  
April 25, 2004

Dear Parents and Guardians,

I am conducting a study of career decisions made by high school seniors and sophomores in several area high schools. The (name of district) school district has given me permission to contact you because your son/daughter will be offered the opportunity to participate in my study.

This study deals with the plans students make for the careers they will pursue after high school.

In about a week and a half I will be sending you a letter with additional information and I will include a request form for you to complete to give your permission for your son/daughter to participate. I will explain the study to the students at their high school and I will also ask each student if he/she agrees to participate.

Thank you very much.

Sincerely,

Leonora Owre

**APPENDIX F****FIRST LETTER TO PARENTS (SPANISH)**

1008 Walton  
College Station, Texas 77840  
(La Fecha)

El estimado Parents y Guardians,

Dirijo un estudio de carrera que las decisiones hicieron por seniores de la escuela secundaria y estudiantes de segundo año en varias escuelas secundarias de área. El (el nombre de distrito) distrito de la escuela me ha concedido autorización a contactarle porque a su hijo /hija le será ofrecida la oportunidad de la que participar mi estudio.

Este estudio se ocupa de la marca del estudiante de planes para las carreras que perseguirán después de escuela secundaria.

En alrededor una la semana y una mitad que le enviaré que una carta con información adicional y yo incluiremos una forma de petición que usted debe completar debe dar su permiso para que su hijo /hija participe. Explicaré el estudio para los estudiantes en su escuela secundaria y yo también preguntaré a cada estudiante si él / que ella estuviera de acuerdo en participar.

Muchas gracias.

Sinceramente,

Leonora Owre

**APPENDIX G****SECOND LETTER TO PARENTS (ENGLISH)**

1008 Walton Drive  
College Station, Texas 77840  
(date)

Dear Parents and Guardians,

I wrote to you about a week and a half ago to let you know that I would be contacting you concerning my study of career decisions made by high school seniors and sophomores in (name of high school).

I am an educator and a student at Texas A&M University. As part of my degree program at Texas A&M University, I am conducting a study of the decisions high school students make about their future careers or occupations. My study is important because it could identify specific activities or job-related experiences that might help students prepare for their future. I will share the findings of my study with the schools so that they might use this information to determine the course content of career exploration classes or other career development activities.

Students will not be identified in the study and any responses they give will not link them to anything that might be published. The study will involve students' responding to two short career instruments that will be read to them, as well as completing an information form. The questions asked on the instruments do not include any sensitive material and I do not anticipate that anything that is asked would be offensive to anyone. The study will take approximately 55 minutes. Participation is voluntary and students may withdraw from the study at any time by telling me they do not wish to continue to participate. Only students who agree to participate, and who also have the consent of a parent or guardian, will participate in the study.

The superintendent and the high school principal in the (name of school district) have given their permission for me to conduct this study. The study has also been approved through the institutional Review Board, Human Subjects in Research, Texas A&M University.

Would you please allow your son/daughter to participate in this study? In order that I may know how many students have parental permission, I would appreciate it if you would return the enclosed permission form within three days after receiving this letter. I am enclosing a self-addressed stamped envelope for your use.

Please contact me at 272-8307, ext. 104, or at 693-1751, if you have any questions. You may also contact your high school principal, (name of principal) at (telephone number) or my university supervisors, Dr. Linda Parrish, 845-3447, and Dr. Gonzalo Garcia, Jr., 845-9692.

Thank you for considering my request to allow your son/daughter to participate in the study. His/her participation is important because I need the ideas of as many students as possible in order to identify specific activities or job-related experiences that may be useful to students as they plan for the future.

Sincerely,

Leonora Owre

**APPENDIX H****SECOND LETTER TO PARENTS (SPANISH)**

1008 Walton Drive  
College Station, Texas 77840  
(La Fecha)

Estimados padres y guardianes,

Le escribí aproximadamente a la semana y uno medio atrás para dejarle saber que le contactaría concierne a mi estudio de carrera que las decisiones hicieron por seniores de la escuela secundaria y estudiantes de segundo año en (el nombre de escuela secundaria).

Soy un educador y un estudiante en Texas A&M University. Como la parte de mi grado programa en Texas A&M University, dirijo un estudio de las decisiones que los estudiantes de la escuela secundaria hacen acerca de su futuro corre a velocidad u ocupaciones. Mi estudio es importante porque podría identificar actividades especificas o las experiencias relacionadas al trabajo que podrían ayudar a los estudiantes se preparan para su futuro. Compartiré los descubrimientos de mi estudio con las escuelas a fin de que podrían usar esta información para determinar el curso contenido de clases de exploración de carrera u otras actividades de desarrollo de carrera.

Los estudiantes no serán identificados en el estudio y cualquier respuestas que dan no las asociarán para cualquier cosa que podrían ser publicadas. El estudio involucrará estudiantes responder para dos instrumentos pequeños de a carrera que les será leído para ellos, así como completar una formalidad de información. Las preguntas preguntaron en los instrumentos no incluye cualquier material sensitivo y yo no anticipo tan nada que es preguntado sería ofensivo para cualquiera. El estudio tomará aproximadamente 55 minutos. La participación es voluntaria y puede retirarse del estudio en cualquier momento. Leeré las preguntas para los estudiantes y cualquier estudiantes que no tiene el deseo de continuar puede retirarse del estudio diciéndome en cualquier momento durante el estudio o escribiéndome una nota. Sólo los estudiantes que están de acuerdo en participar, y que también tiene el consentimiento de un padre o un guardián, participará del estudio.

El superintendente de escuelas y el director de la escuela en (el nombre de distrito) han dado su permiso para que yo dirija este estudio. El estudio también ha estado aprobado a través del Institutional Review Board, Human Subjects in Research, Texas A&M University.

Usted por favor daría a su hijo /hija permiso de participar de este estudio? Para que puedo saber cuántos los estudiantes tenga permiso paternal, lo apreciaría si usted devolvería la forma adjunta de permiso dentro de tres días después de la presente receptora. Incluyo un sobre con sello con dirección propia para su uso.

Por favor contácteme en 272-8307, Ext. 104, o 693-1751 si usted tuviera cualquier preguntas. Usted también puede contactar su director de la escuela secundaria en (llame por teléfono número de escuela secundaria) o mis supervisores universitarios, Dr. Linda Parrish (845-3447) o Dr. Gonzalo Garcia, Jr., (845-9692).

Gracias por considerar mi petición dar a su hijo /hija permiso de participar del estudio. Lo de él / su participación es importante porque necesito las ideas de como muchos estudiantes tan posibles para identificar actividades específicas o las experiencias relacionadas al trabajo que pueden ser útiles para los estudiantes como prevé el futuro.

Sinceramente,

Leonora Owre



## APPENDIX I

### PARENT CONSENT FORM (ENGLISH)

I have been asked to give my consent for my son/daughter to participate in a research study about career decisions. The study will involve my son/daughter indicating whether certain statements about educational and occupational plans apply to him/her. My son/daughter was selected to be a possible participant because he/she is a sophomore or a senior enrolled in an English class at (name of high school) and will be making career plans for the future. About (number of students) students from (name of high school) high school have been asked to participate in this study.

The purpose of this study is to identify how educational and occupational plans apply to the students who participate in this study, and to obtain information regarding the confidence the students have in their ability to make career decisions. The results of this study will also be shared with the high schools so that the information may be used to help other students in the future.

If I give consent for my son/daughter to participate in this study, he/she will be asked to listen as two short career decision instruments are read and indicate if the statements apply to him/her. The study will not be video taped or audio taped. Students will also be asked to complete a brief information sheet stating gender, ethnicity, grade level in school and to estimate the grades usually earned (A, B, C, other) as well as to list the degrees parents have earned. The study will take less than an hour, probably about 55 minutes. There are no anticipated risks associated with this study. The benefits of participation are that students may begin to think about certain aspects of making a career decision that they haven't thought about before. Students will not receive any compensation for participating in this study.

The study is anonymous. Students will not write their names on any of the answer sheets or on the information sheet. The records of this study will be kept private. Nothing that can link any student to this study will be included in any sort of report that might be published. Research records will be stored securely and only the following persons will have access to the records: the researcher, Leonora Owre; the researcher's faculty advisors from Texas A&M University, Dr. Linda Parrish and Dr. Gonzalo Garcia, Jr.

My decision about whether or not to allow my son/daughter to participate will not affect his/her current or future relations with (name of high school) high school or with Texas A&M University. If I decide to allow my son/daughter to participate, he/she is free to refuse to answer any of the questions that may make him/her uncomfortable. I can withdraw my permission for my son/daughter to participate at any time without affecting relations with his/her high school or with Texas A&M University. If I wish to withdraw my permission for my son/daughter to participate, I may call Leonora Owre at any of the telephone numbers listed below or write a letter to Leonora Owre, 1008 Walton Drive, College Station, Texas 77840. I can contact the following if I have questions about this study: Leonora Owre, 693-1751 or 272-8307, ext. 104; Dr. Linda Parrish (845-3447), Dr. Gonzalo Garcia, Jr. (845-9692); (insert name and phone number of high school principal).

I also understand that I have a right to request a copy of the summary findings of the study. I may also share this copy with my son/daughter.

I understand that this research study has been reviewed and approved by the Institutional Review Board, Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights I can contact the Institutional Review Board through Dr. Michael W. Buckley, Director of Research Compliance, Office of Vice President for Research at (979) 845-8585 (mwbuckley@tamu.edu).

I have read the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to allow my son/daughter to participate in this study. I have been given a copy of this consent document for my records. By signing this document, I consent to allow my son/daughter to participate in the study. I understand that my son/daughter will be given an assent form that is similar to this form and that my son/daughter must also sign the assent form, indicating that he/she is willing to participate in the study.

Name of Son/Daughter (Please print) \_\_\_\_\_  
Date \_\_\_\_\_

Signature of Parent/Guardian \_\_\_\_\_  
Date \_\_\_\_\_

Printed Name of Parent/Guardian \_\_\_\_\_

Signature of Investigator \_\_\_\_\_  
Date \_\_\_\_\_

Note:

If you wish to receive a copy of the summary findings of this study, please indicate below. Include the address to which you wish the findings to be mailed.

Yes, I wish to receive a copy of the summary findings \_\_\_\_\_

Please mail the copy of the findings to the following address \_\_\_\_\_

**APPENDIX J****PARENT CONSENT FORM (SPANISH)**

He recibido instrucciones de dar mi consentimiento para que mi hijo /hija participe de un estudio de investigación acerca de decisiones de carrera. El estudio involucrará mi hijo /hija indicando si ciertas declaraciones acerca de los planes educativos y ocupacionales se aplican a él / a ella. Mi hijo /hija fue seleccionado para ser un participante posible porque él / que ella es un estudiante de segundo año o un senior se inscribió en una clase de inglés en (el nombre de escuela secundaria) y hará planes de carrera para el futuro. Acerca (el número de estudiantes) estudiantes de (el nombre de escuela secundaria) escuela secundaria ha recibido instrucciones de participar de este estudio.

El propósito de este estudio es identificar qué tan educativo y los planes ocupacionales se aplican a los estudiantes que participan de este estudio, y para obtener información estimando la confianza los estudiantes tenga en su habilidad para hacer decisiones de carrera. Los resultados de este estudio también serán compartidos con las escuelas secundarias a fin de que la información puede usarse para ayudar a otros estudiantes en el futuro.

Si doy el consentimiento para mi hijo /hija para participar de este estudio, entonces él recibirá instrucciones de / ella oír como dos decisión corta de carrera los instrumentos son leídos e indican si las declaraciones se aplican a él / a ella. El estudio no será vídeo grabado en cinta o audio grabado en cinta. Los estudiantes también recibirán instrucciones de completar una hoja concisa de información declarando género, etnicidad, el grado ras con ras en escuela y estimar las calificaciones usualmente ganadas (A, B, C, otro) así como para listar los padres de grados ha ganado. El estudio tomará menos de una hora, probablemente acerca de 55 minutos. No hay anticipados riesgos asociados con este estudio. Las prestaciones de participación son que los estudiantes pueden comenzar a pensar en ciertos aspectos de hechura una decisión de carrera alrededor la que no han pensado antes. Los estudiantes no recibirán cualquier compensación para participar de este estudio.

El estudio es anónimo. Los estudiantes no escribirán sus nombres en cualquiera de las hojas de respuesta o en la hoja de información. Los registros de este estudio serán mantenidos privados. Ninguna cosa que puede conectar cualquier estudiante para este estudio será incluido en cualquier tipo de informe que podría ser publicado. Los registros de investigación se guardarán afianzadamente y sólo las siguientes personas tendrán acceso a los registros: El investigador, Leonora Owre; Los consejeros de facultad del investigador de Texas A&M University, Dr. Linda Parrish y Dr. Gonzalo Garcia, Jr.

Mi decisión de aproximadamente de todos modos para dar a mi hijo /hija permiso de participar no afectará lo de él / sus relaciones coetáneas o futuras con (el nombre de escuela secundaria) escuela secundaria o con Texas A&M University. Si resuelvo dar a mi hijo /hija permiso de participar, entonces él / que ella está en libertad para rehusarse a contestar a cualquiera de las preguntas que le puede hacer / a ella incómodo. Puedo abstraer mi permiso para que mi hijo /hija participe en cualquier momento sin afectar relaciones con la de él / su escuela secundaria o con Texas A&M University. Si tengo el deseo de abstraer mi permiso para que mi hijo /hija participe, entonces puedo llamar a Leonora Owre en cualquier de los números telefónicos listados de debajo o puedo extender una carta a Leonora Owre, 1008 Walton Drive, College, Texas 77840. Puedo contactar lo siguiente si tengo preguntas acerca de este estudio: Leonora Owre, 693-1751 o 272-8307, ext. 104; Dr. Linda Parrish (845-3447), Dr. Gonzalo Garcia, Jr. (845-9692); (El nombre del inserto y el número de teléfono de alto instruyen al director).

También tengo por entendido que tengo derecho a demandar una copia de los descubrimientos sumarios del estudio. También puedo compartir esta copia con mi hijo /hija.

Tengo por entendido que este estudio de investigación ha sido revisado y aprobó por el Institutional Review Board, Human Subjects in Research, Texas A&M University. Para los problemas relatados en investigación o las preguntas estimando los derechos de temas puedo contactar la Institutional Review Board, Dr. Michael. Buckley, Director of Research Compliance, Office of the Vice President for Research, (mwbuckley@tamu.edu) (979) 845-8585.

Me he leído la explicación provista para mí. He contestado a todas mis preguntas para mi satisfacción, y voluntariamente estoy de acuerdo en dar a mi hijo /hija permiso de participar de este estudio. He recibido una copia de este documento de consentimiento para mis registros. Firmando este documento, yo esté de acuerdo en dar a mi hijo /hija permiso de participar del estudio. Tengo por entendido que mi hijo /hija recibirá una forma de asentimiento que es parecido a esta formalidad y que mi hijo /hija también debe firmar el asentimiento forman, indicando eso él / ella está dispuesta a participar del estudio.

El nombre de mi hijo/hija (Por Favor escriba en letras de imprenta)\_\_\_\_\_

La fecha\_\_\_\_\_

La Firma De Parent/Guardian\_\_\_\_\_

La fecha\_\_\_\_\_

Name Escrito En Letras De Imprenta De Parent/Guardian\_\_\_\_\_

La Firma De Investigator\_\_\_\_\_

La fecha\_\_\_\_\_

Nota:

Si usted tiene el deseo de recibir una copia de los descubrimientos sumarios de este estudio, entonces por favor compruebe el espacio vacío debajo y complete la información demandada:

Ojalá para recibir una copia de los descubrimientos sumarios\_\_\_\_\_

Por favor envíe por correo la copia de los descubrimientos para la siguiente dirección

\_\_\_\_\_

**APPENDIX K****ACKNOWLEDGEMENT OF PARENT CONSENT FORM**

1008 Walton Drive  
College Station, TX 77840  
May 25, 2004

Dear Parent,

Thank you for agreeing to allow your son/daughter to participate in my Career Decision Study. Although not every student for whom permission was given actually participated in the study, I have enclosed a copy of the form which you signed.

If you requested a copy of the findings of my study, I will send these to you in the fall.

Thank you!

Sincerely,

Leonora Owre

**APPENDIX L****STUDENT ASSENT FORM (ENGLISH)**

I have been asked to participate in a research study about career decisions. This study will involve indicating if I believe that certain statements about educational and occupational plans apply to me. I was selected to be a possible participant because I am a sophomore or senior enrolled in an English class at (name of high school) and I will be making career plans for the future. About (number of students) from my high school have been asked to participate in this study.

The purpose of this study is to identify how educational and occupational plans apply to me, including how confident I am that I can make career decisions.

If I agree to be in this study, I will be asked to listen as two career decision instruments are read to me and indicate if the statements apply to me. The study will not be video taped or audio taped. I will also be asked to complete a brief information sheet indicating the following: my gender, my ethnicity, my grade level in school, my career plans, an estimate of the grades I usually earn (A, B, C, other) and the level of schooling completed by my parents. The study will take less than an hour, probably about 55 minutes. There are no anticipated risks associated with this study. The benefits of participation are that I may begin to think about certain aspects of making a career decision that I haven't thought about before. I will not receive any compensation for participating in this study.

The study is anonymous. I will not write my name on any of the answer sheets or on the information sheet. The records of this study will be kept private. Nothing that can link me to this study will be included in any sort of report that might be published. Research records will be stored securely and only the following persons will have access to the records: the researcher, Ms. Leonora Owre, the researcher's faculty advisors from Texas A&M University, Dr. Linda Parrish and Dr. Gonzalo Garcia, Jr.

My decision whether or not to participate will not affect my current or future relations with (name of high school) or with Texas A&M University. If I decide to participate, I am free to refuse to answer any of the questions that may make me uncomfortable. I can withdraw at any time without my relations with my high school or Texas A&M University being affected. If I wish to withdraw from the study, I may tell Ms. Owre during the study, call Ms. Owre at any of the numbers listed below, or give Ms. Owre written notice that I wish to withdraw. I can contact the following if I have questions about this study: Ms. Owre, 272-8307, ext. 104, or 693-1751, Dr. Linda Parrish, 845-3447, Dr. Gonzalo Garcia, Jr., 845-9692, Mr. John Meckel, 567-9506.

I also understand that I have a right to request a copy of the summary findings of the study.

I understand this research study has been reviewed and approved by the Institutional Review Board, Human Subjects in Research, Texas A&M University. For research related problems or questions regarding subjects' rights I can contact the Institutional Review Board through Dr. Michael W. Buckley, Director of Research Compliance, Office of the Vice President for Research at (979) 845-8585 (mw\_buckley@tamu.edu).

I have read the explanation provided to me. I have had all of my questions answered to my satisfaction, and I voluntarily agree to participate in this study. I have been given a copy of this

consent document for my records. By signing this document, I consent to participate in the study.

Signature \_\_\_\_\_

Date\_\_\_\_\_

Printed Name\_\_\_\_\_

Name of Parent or Guardian\_\_\_\_\_

Signature of Investigator \_\_\_\_\_

Date\_\_\_\_\_

Note: If you wish to receive a copy of the summary findings of this study, please complete the following information:

Yes, I wish to receive a copy of the summary findings\_\_\_\_\_

Please mail the copy of the findings to the following address\_\_\_\_\_

\_\_\_\_\_

**APPENDIX M****STUDENT ASSENT FORM (SPANISH)**

He recibido instrucciones de participar de un estudio de investigación acerca de decisiones de carrera. Este estudio involucrará a indicar si creo que ciertas declaraciones acerca de los planes educativos y ocupacionales se aplican a mí. Fui seleccionado para ser un participante posible porque soy un estudiante de segundo año o un senior alistado en una clase de inglés en (el nombre de escuela secundaria) escuela secundaria y yo haré planes de carrera para el futuro. Aproximadamente (el número de estudiantes) de mi escuela secundaria haya recibido instrucciones de participar de este estudio.

El propósito de este estudio es identificar qué tan educativo y los planes ocupacionales se aplican a mí, incluyendo qué tan confiado soy que pueda hacer decisiones de carrera.

Si estoy de acuerdo en estar de este estudio, entonces recibiré instrucciones de oír como dos instrumentos de decisión de carrera son leídos para mí e indican si las declaraciones se aplican a mí. El estudio no será vídeo grabado en cinta o audio grabado en cinta. También recibiré instrucciones de completar una hoja concisa de información indicando lo siguiente: Mi género, mi etnicidad, mi nivel de grado en escuela, mi carrera tiene pensado, una estimación de las calificaciones que usualmente gano (A, B, C, otro) y el nivel de educación completada por mis padres. El estudio tomará menos de una hora, probablemente acerca de 55 minutos. No hay anticipados riesgos asociados con este estudio. Las prestaciones de participación son que puedo comenzar a pensar en ciertos aspectos de hechura una decisión de carrera que no he pensado acerca de antes. No recibiré cualquier compensación para participar de este estudio.

El estudio es anónimo. No escribiré mi nombre en cualquiera de las hojas de respuesta o en la hoja de información. Los registros de este estudio serán mantenidos privados. Ninguna cosa que me puede conectar para este estudio será incluido en cualquier tipo de informe que podría ser publicado. Los registros de investigación se guardarán afianzadamente y sólo las siguientes personas tendrán acceso a los registros: El investigador, Ms. Leonora Owre, los consejeros de facultad del investigador de Texas A&M University, Dr. Linda Parrish y Dr. Gonzalo Garcia, Jr.

Mi decisión de todos modos para participar no afectará mis relaciones coetáneas o futuras con (el nombre de escuela secundaria) escuela secundaria o con Texas A&M University. Si resuelvo participar, entonces estoy en libertad para rehusarme a contestar a cualquiera de las preguntas que me pueden hacer incómodo. Puedo retirarme en cualquier momento sin mis relaciones con mi escuela secundaria o A de Texas A&M University siendo afectado. Si tengo el deseo de retirarme del estudio, entonces puedo dar a Ms. Owre durante el estudio, llamada Ms. Owre en cualquier cuenta de que los números escorasen, o da aviso por escrito Ms. Owre que tengo el deseo de abstraer. Puedo contactar lo siguiente si tengo preguntas acerca de este estudio: Señora Owre, 272-8307, ext. 104, o 693-1751, Dr. Linda Parrish, 845-3447, Dr. Gonzalo Garcia, Jr., 845-9692, (el nombre y el número de teléfono de alto instruyen al director).

También tengo por entendido que tengo derecho a demandar una copia de los descubrimientos sumarios del estudio.

Entiendo que este estudio de investigación ha sido revisado y aprobó por el Institutional Review Board, Human Subjects in Research, Texas A&M University. Pues la investigación relató problemas o preguntas estimando los derechos de temas puedo contactar la Institutional Review Board, Dr. Michael. Buckley, Director of Research Compliance, Office of the Vice President for



Research, (mw Buckley@tamu.edu) (979) 845-8585.

Me he leído la explicación provista para mí . que he tenido todo mis preguntas la obedecieron a mi satisfacción, y voluntariamente estoy de acuerdo en participar de este estudio. He recibido una copia de este documento de consentimiento para mis registros. Firmando este documento, yo esté de acuerdo en participar del estudio.

La firma \_\_\_\_\_ La fecha \_\_\_\_\_

Name escrito en letras de imprenta \_\_\_\_\_

El Nombre De Parent O Guardian \_\_\_\_\_

La Firma De Investigator \_\_\_\_\_ La fecha \_\_\_\_\_

Nota: Si usted tiene el deseo de recibir una copia de los descubrimientos sumarios de este estudio, entonces por favor compruebe el espacio vacío debajo y complete la información demandada:

Ojalá para recibir una copia de los descubrimientos sumarios \_\_\_\_\_

Por favor envíe por correo la copia de los descubrimientos para la siguiente dirección

\_\_\_\_\_

**APPENDIX N****ACKNOWLEDGEMENT OF STUDENT ASSENT FORM**

1008 Walton Drive  
College Station, TX 77840  
(Date)

Dear (Student Name):

Thank you for agreeing to participate in my Career Decision Study. Enclosed you will find a copy of the assent form which you signed when I visited your High School. Although every student who signed an assent form did not actually participate in the study, I am providing each student with a copy of his or her form.

If you requested a copy of the findings of my study, I will send these to you in the fall.

Thank you for your willingness to help with my Career Decision Study.

Sincerely,

Leonora Owre

**APPENDIX O****LETTER TO SUPERINTENDENTS**

1008 Walton Drive  
College Station, Texas 77840  
(Date)

Dear \_\_\_\_\_,

The career decision study that I conducted in your district last spring has now been completed. The study was designed to obtain information that would be of value to secondary school personnel who provide career counseling and guidance to high school students as the students prepare for post-secondary education, training, and employment. The study attempted to determine if students representing different ethnic groups (Anglo, Hispanic, and African-American) were different from each other in areas that could affect their ability to decide upon a career and plan how to go about entering that career field.

Seventy-four students (sophomores and seniors) from three area high schools participated in the study. Of those who participated, 34 were sophomores and 40 were seniors. Forty-three students were female and 31 were male. With regard to ethnicity, the study included 51 Anglo students, 11 Hispanic students and 12 African-American students. The study was approved by the Institutional Review Board of Texas A&M University. Texas A&M professors Dr. Linda Parrish and Dr. Gonzalo Garcia supervised the research.

Of the students participating in the study, 67% of the sophomores and 90% of the seniors reported middle to high levels of career indecision. Only 10% of the seniors and 32% of the sophomores indicated they were relatively certain of their career choices. In addition to the responses on the instruments, many students told me they wanted more career information in their high schools.

Although the results of my study did not identify any specific groups of students who were more in need of career guidance than other groups of students, the majority of all students who participated in the study indicated a need for career guidance. Based upon the information obtained in the study, I am recommending the districts involved in the study provide additional career counseling and guidance for their secondary students. A career class would be the ideal means to provide career counseling and guidance. Career services could also be provided through existing classes. For example, occupational information could be included with library research skills, in social studies classes, in vocational education courses, and also in computer classes.

I will provide you with a copy of my dissertation and I would appreciate the opportunity to discuss my findings with you. Thank you for allowing me the opportunity to work with your students!

Sincerely,

Leonora Owre

**APPENDIX P****LETTER TO PARTICIPATING STUDENTS**

1008 Walton Drive  
College Station, Texas 77840  
(Date)

Dear \_\_\_\_\_,

Thank you very much for participating in my career research study last spring. When you participated in the study, you indicated you would be interested in obtaining a copy of the results of the study.

I have attached a copy of the results. If you have any questions, you may write me at the above address or call me at (979) 272-8307, ext. 104.

Sincerely,

Leonora Owre

## APPENDIX Q

### SUMMARY OF RESULTS FOR STUDENTS

Career Research Study  
Spring, 2004

**Background Information:** The study was designed to obtain information that would be of value to secondary school personnel who provide career counseling and guidance to high school students preparing for their future careers.

**Purpose of the Study:** This study attempted to determine if students representing different ethnic groups were very different from each other in areas that could affect their ability to decide upon a career and plan how to go about entering that career. The two areas that were investigated were the students' career indecision and their beliefs in their abilities to successfully perform a given career task.

**Results:** No differences were found.

**Additional Information:** Although there were no major differences between the different ethnic groups on career indecision and belief in the ability to successfully perform a given career task, the majority of the students who participated in the study indicated they had problems making a decision as to what career they should enter. A few of the students knew exactly what they wanted to do after graduation, but most were undecided. Of those who knew what they wanted to do, many were not certain how to go about pursuing their chosen careers and believed they needed additional information.

**Recommendations:** Based upon the results of my study, I will recommend to school officials that they offer courses for career investigation to their students and that they include career information in the regular courses that are already offered. For example, career information could be obtained in library research courses, computer courses and in social studies courses.

**Summary:** My study will hopefully encourage high school officials to provide career information to students and to help them make decisions about their future careers.

**VITA**

Martha Leonora Owre  
1008 Walton Drive  
College Station, Texas 77840

Education

- B.A. 1967, The College of William and Mary in Virginia  
Graduated with Departmental Honors in Sociology and Anthropology
- M.A. 1969, Texas Tech University  
Vocational Rehabilitation Counseling

Experience

- 1985 – 1990, Teacher, R.L. Isaacs Elementary School, Houston Independent School District, Houston, Texas
- 1990 – 2001, Assistant Principal, Bryan Academy of Visual and Performing Arts, Bryan Independent School District, Bryan, Texas
- 2001 – 2005, Principal, Snook Elementary School, Snook, Texas

Honorary Societies

Pi Delta Kappa  
Kappa Delta Pi  
Phi Kappa Phi