

DISSERTATION

**A CAREER WORKSHOP'S EFFECT ON
VOCATIONAL IDENTITY, CAREER INDECISION AND SELF EFFICACY
OF 10TH GRADERS**

Submitted by

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY JUDITH A. CALIGIURI ENTITLED A CAREER DEVELOPMENT WORKSHOP'S EFFECT ON VOCATIONAL IDENTITY, CAREER INDECISION AND SELF EFFICACY OF 10TH GRADERS BE ACCEPTED AS FULFILLING IN PART, REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

A CAREER WORKSHOP'S EFFECT ON VOCATIONAL IDENTITY, CAREER INDECISION AND SELF EFFICACY OF 10TH GRADERS

The purpose of this study was to determine a career workshop's effect on the vocational identity, career indecision, and career self efficacy of 10th grade high school students. Twelve research questions were tested to determine the workshop's effect on the three dependent variables: vocational identity, career indecision, and career self efficacy.

The primary independent variable was the activities in the workshop. The study also examined whether gender, ethnicity, or academic ability interacted with the treatment workshop on students' vocational identity, career indecision, and career self efficacy.

Three standardized instruments were used to measure the variables. The My Vocational Situation, vocational identity scale (Holland, Daiger, & Power, 1980) was used to measure vocational identity. The Career Decision Scale, career indecision scale (Osipow, Carney, Winter, Yanico, & Koschier, 1976) was used to measure career indecision. The Occupational Self Efficacy Scale, confidence rating scale, (Betz & Hackett, 1981) was used to measure career self efficacy.

The 171 subjects in this study were from two rural high schools in

Colorado. Eighty seven subjects formed the treatment group sample. Eighty four students formed the control group sample.

Major findings in the study indicated the treatment group increased significantly in vocational identity on the MVS post test. Career indecision was significantly lower for the treatment group, as measured by the CDS post test. Career self efficacy did not show a significant degree of change. Boys and girls in the treatment group changed significantly on post test adjusted scores in vocational identity and career indecision. Hispanics in the treatment group did not show a significant degree of change from the Hispanics in the control group on any of the dependent variables. Students of high, middle, and low academic ability did show a significant increase in vocational identity, and a decrease in career indecision.

Some limitations exist. Career workshops using other assessments, other blocks of time, or alternate activities with subjects in a different demographic area may find different results. Therefore, generalizability is limited. However, indications supported the use of a career workshop intervention with high school 10th graders to increase vocational identity, and decrease career indecision. More research on the construct of self efficacy is encouraged.

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DEDICATION

I set a goal in 1989 to pursue and complete a doctoral degree program in the Guidance and Counseling career field. This dissertation completes that goal. It concludes years of education, but the knowledge I gained, the friends I made, and the challenges I accepted have given me insight and even a bit of wisdom I would not have had the opportunity to acquire had I not chosen this path.

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Chapter 1

Introduction

Background

Self esteem, as a concept, provides a framework to understand an individual's adjustment to the environment. Bandura (1977) thought that an individual's belief in one's competence to accomplish specific tasks influences initiation of behavior, effort, and persistence. Betz and Hackett (1981) applied self efficacy theory to the career domain as a model to understand how self efficacy expectations predict career decisions. Super (1990) believed career development is a life long process where self concept is being shaped by influences of each phase of life on an individual's behavior. One assumption of Holland's theory is that a person's behavior is determined by the interaction between personality and environment (Holland & Holland, 1977). These career development theorists provide the framework from which this investigation will be researched.

A focus of research has been on evaluating career indecision and vocational identity assessment with various populations, using instruments such as the Career Decision Scale (Osipow, Carney, Winer, Yanico and

Koschier, 1976) and My Vocational Situation (Holland, Daiger, and Powers, 1980) and then developing intervention programs to aid people in becoming less undecided about their career options. A relatively new focus of research has been around the construct of career self efficacy expectations. A number of studies have been completed as a result of Betz and Hackett's (1981) initial investigation in which they suggested that self efficacy beliefs serve as an important influence on career decision and achievements, helping particularly, to determine a person's sphere of perceived career options and the persistence and success a person has in those options. Subsequent studies (Betz & Hackett, 1983; Hackett & Betz, 1981; Lent & Larkin, 1984; Lent, Brown & Larkin, 1986, 1987), primarily with college students, have supported the relationship between career and academic self efficacy beliefs to the various measures of vocational behavior.

Research in vocational decision making and self efficacy expectations has led to recommendations for intervention strategies to assist individuals in obtaining the necessary competencies to initiate and persist in behaviors that will help them achieve the desired outcomes. High school counselors face many challenges in helping today's adolescents acquire and use the knowledge, skills, and attitudes necessary for making work meaningful, satisfactory, and productive. There is increased demand for more effective and efficient career education in the face of dwindling funds. Counselors need to understand how career decision making and self efficacy relate to students' diversified ethnicity, academic ability, and gender, and utilize interventions which best fit the needs of their population.

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Need for the Study

Many studies show the persistent and significant relationship between self efficacy and career decision making (Betz & Hackett, 1981; Lauver & Jones, 1991; Lent, Brown, & Larkin, 1986; Taylor & Betz, 1983; and Savickas, 1989).

Although the career self efficacy construct generated interest, research has plateaued (Meier, 1991). How self efficacy expectations can be changed, especially in diverse populations, is an important direction to research (Hackett, Betz, O'Halloran, & Romac, 1990). Brooks (1990) concluded after reviewing research on self efficacy that a person's self efficacy deserves attention as a potentially important factor in vocational behavior. Taylor and Betz (1983) addressed self efficacy in terms of career decision making skills and behavior and encouraged further research be done on these constructs.

Research on race/ethnicity was neglected in the 1970's and 1980's. Of the approximate 12,000 articles published from 1970-1986 in leading counseling and psychology journals, only 1.7% examined race or ethnicity and those were mostly on staffing and affirmative action issues (Hackett, Lent & Greenhaus, 1991). Hawks and Muha (1991) reviewed the history of career services provided to minority students and suggested that counselors may effect social change through interventions. Little research has been done to design career development systems with the needs of this group in mind.

Arbona and Novy (1990) suggested that given the increasing participation of Hispanics in higher education and higher level jobs, it is becoming relevant to examine career aspirations of Hispanics as it relates to the job market and fostering interventions in various career fields using role models. In their review of the status of career self efficacy research, Lent and

Hackett (1987) noted the need for studies using more diverse populations. Betz (1991) urges more attention to researching the career behavior of racial ethnic minorities.

Hispanics are the fastest growing minority group in the United States, as well as one of the youngest groups. Forty-seven percent of Hispanics are below age twenty one as compared to thirty-five percent of the total population. (Arbona, 1990). Arbona reports that with the notable exception of Holland's theory of career interests and the applicability of the Harrington O'Shea Career Decision Making System (Harrington & O'Shea, 1982), little research on career theory and assessment instruments has been done with this group. Arbona calls for descriptive studies that compare the scale score for Hispanics and non-Hispanics (Arbona, 1989).

In the Secretary's Commission on Achieving Necessary Skills (SCANS): Goals 2000 (1991), the recommendation was to prepare all students for a workplace of the future in which flexibility will be of paramount importance. "The SCANS skills are generic skills intended for all students who expect to enter the work force of the future, whether through higher education, professional education, or straight from secondary school, and regardless of whether the future worker will be employed on the shop floor or the executive suite "(p.13).

Studies which support the notion that low academic achievers tend to have negative self concepts are numerous (Byrnes, 1990; Pullin, 1994; Purkey, 1970; Taylor, 1964). Lent, Brown, and Larkin (1984) examined the relationship of self efficacy to academic achievement and persistence of career choice. Bloch (1989) suggested that career counseling be an integral component of an effective program for potential drop outs, and evaluation design be incorporated in research to determine the effectiveness of intervention programs with this

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population. It is generally perceived that interventions produce positive results. Researchers have urged that more attention be given to evaluating the effectiveness and utilization of career development intervention. Jepson (1992) reviewed literature on counseling for career development for 1991 and encouraged greater attention be given to study all ages and cultures and to evaluating the effectiveness of interventions in career development.

This study will concentrate on career development in an organization, i.e. educational and counseling setting as suggested by Oliver and Spokane (1988); and Russell (1991). Hawks and Muha (1991) suggested including minority students; The study will utilize a career workshop and group counseling (Savickas, 1989); and look at how students with different abilities will process the information (Fouad,1994).

Problem Statement

The problem to be examined in this study is: What is the effect of a career development workshop on the vocational identity, career indecision, and self efficacy of 10th grade high school students?

Research Hypotheses

Several hypotheses were tested concerning the effect of the independent variables on the dependent variables in this study. Significance was set at the .05 level.

1. There will be a significant difference in the vocational identity of 10th grade students who go through the career development workshop and 10th grade

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students who do not, as measured by My Vocational Situation, (Holland, Daiger, & Power, 1980b) vocational identity scale.

2. There will be a significant difference in the career indecision of 10th grade students who go through the career development workshop and 10th grade students who do not, as measured by the Career Decision Scale, (Osipow, Carney, Winer, & Koschier, 1976) career indecision scale.

3. There will be a significant difference in the career self efficacy of 10th grade students who go through the career development workshop and 10th grade students who do not, as measured by the Occupational Self Efficacy Scale (Betz & Hackett, 1981), career self efficacy scale.

4. There will be a significant difference in vocational identity of 10th grade Hispanic students who go through the career development workshop and 10th grade Hispanic students who do not, as measured by My Vocational Situation, vocational identity scale.

5. There will be a significant difference in the career indecision of 10th grade Hispanic students who go through the career development workshop and 10th grade Hispanic students who do not, as measured by the Career Decision Scale, career indecision scale.

6. There will be a significant difference in the career self efficacy of 10th grade Hispanic students who go through the career development workshop and 10th grade Hispanic students who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.

7. There will be a significant difference in the vocational identity of 10th grade students with high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not, as measured by My Vocational Situation, vocational identity scale.

8. There will be a significant difference in the career indecision of 10th grade students of high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not , as measured by the Career Decision Scale, career indecision scale.
9. There will be a significant difference in the career self efficacy of 10th grade students of high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.
10. There will be a significant difference in the vocational identity of 10th grade boys and girls who go through the career development workshop and boys and girls who do not, as measured by My Vocational Situation, vocational identity scale.
11. There will be a significant difference in the career indecision of 10th grade boys and girls who go through the career development workshop and 10th grade boys and girls who do not, as measured by the Career Decision Scale, career indecision scale.
12. There will be a significant difference in the career self efficacy of 10th grade boys and girls who go through the career development workshop and 10th grade boys and girls who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.

Significance of Research

Counselors are aware of the fast changing society that students need to be prepared for as they enter the world of work. Their intervention programs with students, be it individual, group, assessment inventories, workshops or

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computer-aided guidance systems, need to expand the occupational knowledge and skills to identify satisfying, productive careers. However, research and evaluation on the effectiveness of intervention programs and on the constructs of self efficacy, vocational identity and career indecision is often lacking in its focus on high school students. The major research focus has been in using college students in samples, and there have been repeated suggestions to attempt to discover more about the usefulness of these constructs with high school aged students (Betz & Hackett, 1981). Lent and Hackett (1987) noted no published reports on career self efficacy intervention with high school students being reported. Several researchers called for studies using diverse populations of all academic abilities (Arbona, 1990; Lent & Hackett, 1990; Lent, Brown & Larkin, 1986; Munson, 1992).

The present study is designed to gather, evaluate, and report data on the effect of a career development workshop intervention with 10th grade students. The study will attempt to provide a controlled experimental design using accepted research methods and standardized instruments that can be replicated with other populations.

The findings will be helpful to counselors who would like to incorporate guidance intervention workshops in the classroom that will be effective for different ability levels and diverse ethnic populations. In a time of increased accountability and shrinking financial resources, identifying interventions that are cost effective and which yield positive, significant results is critical.

This study adds to the body of knowledge through the investigation of how vocational identity, career indecision, and self efficacy of high school students are effected by a career development workshop that uses a variety of interventions and inventories. It is hoped the study will provide a clear model of

valid information other researchers may want to replicate.

Description of Terms

My Vocational Situation by Holland, Daiger and Power (1980b) is a standardized instrument designed to assess the dimensions of career decision making problems. It is a 20 item test yielding 3 scales: Vocational Identity, Occupational Information (Item 19) and Barriers (Item 20). Only the Vocational Identity (V.I.) Scale will be used in statistical analysis in this study.

Vocational identity is a measure of the "clarity of a person's vocational goals, interests, traits, and self perceptions. This leads to relatively untroubled decision making and confidence in one's ability to make good decisions in the face of inevitable environmental ambiguities" (Holland, et al. 1980, p.1).

Career Decision Scale by Osipow, Carney, Winer, Yanico and Koschier (1976) is a standardized instrument containing 19 items, rated on a 4 point Likert Scale, that measures how clearly each item describes the individual. The first 2 items form the Certainty Scale and the next 16 items form the Indecision Scale. Item 19 allows for personal responses. Only the 16 items in the Indecision Scale (I.S.) will be used in this investigation.

Career indecision is defined as a condition whereby the individual lacks a sequential narrowing and specifying of choice options as one translates information of how educational and occupational alternatives permit one to implement the self concept (Super,1980).

Occupational Self Efficacy Scale by Betz and Hackett (1981b) is a reliable and valid measure of global occupational self efficacy. It is a 20 item scale. It measures students' perceptions of self-efficacy with respect to the educational requirements and job duties of twenty commonly known occupations. Format A, tests level (yes-no) versus strength (confidence rating) of self efficacy.

Career self efficacy refers to an individual's belief that one possesses the necessary competence to perform behaviors required to obtain desired career outcomes (Meier, 1991). It is a generic label encompassing judgments or personal efficacy in relation to the wide range of behavior involved in career choice and adjustment (Betz & Hackett, 1986).

Hispanic is used to describe a very diverse group of people who share a history of Spanish colonialism in Latin America. This group includes persons of Mexican, Puerto Rican, Cuban, and other Central and South American origin (Arbona, 1990).

Academic ability is used in this study to refer to secondary level 10th graders who, at the end of the first semester, January 1996, generated cumulative Grade Point Averages in the general ranges of High--3.1-4.0; Middle--2.1-3.0; and low-- less than 2.0.

Career Development Workshop is a two week intervention with activities provided to increase awareness, exploration, and knowledge of an individual student's strengths, vocational identity, career decision making skills, and

career self efficacy. A description of content occurs in Chapter 3.

Limitations/Assumptions

Certain limitations and assumptions exist that may affect the results of this research.

Limitations

1. The career development workshop used interest assessments, videos, mentorships, as well as computer-aided guidance programs. Generalizability to workshops using other interventions is therefore limited.
2. Only My Vocational Situation vocational identity scale was used to assess vocational identity. Other instruments may result in different findings.
3. Only the Career Decision Scale, career indecision scale was used to assess the career indecision. Other instruments may result in different findings.
4. Only the Occupational Self Efficacy Scale of career self efficacy was used to assess career self efficacy. Other instruments may result in different findings.
5. Students in this study may differ from other populations in a different demographic area. The generalizability is therefore limited.
6. The investigation, including pre test and post test intake, and career development workshop, took 10 class periods of 50 minutes each, plus one full day from school to mentor in a career field. The investigation was completed in a six week time span.

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Assumptions

1. The use of My Vocational Situation is a valid measure of vocational identity and this is a valid measure of the effect of the career development workshop.
2. The use of the Career Decision Scale is a valid measure of career indecision, and this is a valid measure of the effect of the career development workshop.
3. The use of the Occupational Self Efficacy Scale is a valid measure of career self efficacy and this is a valid measure of the effect of the career development workshop.
4. Students in the control group had no organized career intervention program while involved in this study.
5. Students in the treatment group did not share their experiences or materials with those in the control group.
6. Students in both the treatment and control groups provided honest and accurate answers in completing pretest and post test administrations of My Vocational Situation, Career Decision Scale, and Occupational Self Efficacy Scale.
7. Students in the career development workshop treatment group made an honest effort to engage in and complete the activities of the career development workshop.

Chapter 2 Review of Literature

Introduction

The objective of this study was to determine the effect of a career development workshop on vocational identity, career indecision, and self efficacy of 10th grade high school students. To gain a background and theoretical basis for this investigation, a comprehensive review of literature was conducted. Research investigated related historical advances made in vocational research to developmental theories of counseling, vocational identity, career indecision, social theory of self efficacy, variance in academic achievement among learners, ethnicity as it relates to career development, and various intervention techniques utilized over the past 20 years.

Career Development Theory

Bandura's (1977) theory on self efficacy and self efficacy expectations refers to an individual's belief about one's ability to perform a given task or behavior successfully. How long an individual will persist with an activity as well as how much energy one will put forth in the face of adversity was

hypothesized to be the result of self efficacy expectations. In his model, expectations of self efficacy are obtained through four sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. These were explained as follows:

1. Performance accomplishment " . . . is based on personal mastery experiences. Successes raise mastery expectations; repeated failures lower them particularly if the mishaps occur early in the course of events" (p.195).

2. Vicarious experience. "Seeing others perform threatening activities without adverse consequences can generate expectations in observers that they too will improve if they intensify and persist in their efforts" (p.197).

3. Verbal persuasion. According to Bandura, "people who are socially persuaded that they possess the capabilities to master difficult situations and are provided with provisional aids for effective action are likely to mobilize greater effort than those who receive only the performance aids It is therefore the interactive, as well as the independent, effects of social persuasion on self-efficacy that merit experimental consideration" (p. 198).

4. Emotional arousal. "People rely partly on their state of physiological arousal in judging their anxiety and vulnerability to stress. Because high arousal usually debilitates performance, individuals are more likely to expect success when they are not beset by aversive arousal than if they are tense and viscerally agitated" (p.198).

Bandura's theory drew the attention of many researchers, mainly in the cognitive and behavior domain. Betz and Hackett (1981a) extended this research to suggest a construct of career self efficacy; personal expectations help in determining career decisions of men and women. It may be particularly helpful in understanding women's career development because women were

found to be more attracted to gender-traditional careers than were men (Hackett & Betz, 1981). These were the first studies relating Bandura's theory specifically to careers.

Several recent studies have extended Betz and Hackett's hypotheses in predicting academic performance and perceived career options of science and engineering college students (Lent, Brown & Larkin, 1986), and in math and science college majors (Betz & Hackett, 1983). Post-Kammer and Smith (1985) attempted to replicate the study with 8th and 9th grade college bound students, but further work is necessary to clarify the usefulness of career self efficacy with younger populations of all abilities (Lent & Hackett, 1987).

According to Super's career development theory, people go through ages and stages in their selection of an occupation, and this process is an attempt by the individual to fulfill a sense of self. He proposed a congruence between self concept and vocational identity; that our "life rainbow"--which includes the many roles one plays, effect one another in one's life spaces of family, work, and community (Super, 1972). Super (1980) has since refined his life-career rainbow, especially the concept of life span and life space. The rainbow now "incorporates . . . the various personal and social determinants of the use of life space in the occupying of career positions and in the playing of roles during the course of a life career" (p.283). An understanding of Super's theory is instrumental to plan intervention strategies with populations.

John Holland (Holland, 1973) developed a typology approach, suggesting career development was a process involving heredity and a life history of reacting to environmental demands. The four basic assumptions underlying Holland's theory are:

1. " In our culture, most persons can be categorized as one of six types:

realistic, investigative, artistic, social, enterprising, or conventional " (p.2).

2. "There are six kinds of environments: realistic, investigative, artistic, social, enterprising, or conventional "(p.3).

3. "People search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles" (p.4).

4. "A person's behavior is determined by an interaction between his personality and the characteristics of his environment" (p. 4). The hexagonal model (RIASEC) taken from the first letter of each of his six traits, introduced four key concepts:

1. Consistency refers to the matching of personality and work environment.

2. Differentiation suggests if one is "pure" in one personality area, one would not show up in another area; but if one shows up in several personality areas, there is a poorly defined style.

3. Congruence is the concept of understanding that one's personality and work environment need to match.

4. Knowledge defines the key to good decision making as the personality-work environment which satisfies an individual most (Holland, 1973).

Three career development related constructs, vocational identity, career indecision, and career self efficacy were selected as the dependent variables in this study. According to the literature, these variables are often used when measuring career interventions such as workshops. There were standardized instruments available to measure these constructs to provide reliable and valid information.

Vocational Identity

Because of Erikson's extensive work in the area of identity, he is often credited with initiating interest in using the construct of identity over the past thirty years, as it related to vocational behaviors (Vondracek, 1992). Erikson (1959) stated, "In general it is primarily the inability to settle on an occupational identity which disturbs young people" (p.92). Adolescence is often a time of confusion and turmoil as individuals begin the process of transition from childhood to adulthood. Development is dynamic and often chaotic.

According to Erikson, the key characteristic of this stage is a search for identity as one leaves childhood identifications and searches for a different identity in a complex new arena. There is apt to be role confusion and Erikson describe this stage as "Identity vs. Confusion" (Erikson, 1963). This is a critical period of development. He states: "These new identifications are no longer characterized by the playfulness of childhood and the experimental zest of youth; with dire urgency they force the young individual into choices and decisions which will, with increasing immediacy, lead to commitment for life" (p. 155). Adolescents having a difficult time determining a new role may adopt a "negative identity" and assume behaviors that are in direct conflict with family and society. This often results in a lack of commitment to a set of values and eventually a lack of commitment to an occupation.

Savickas (1985) investigated the association of vocational identity with vocational development constructs; the results indicated a relationship between vocational identity and the degree of vocational development, as well as progress in ego-identity achievement. "Because it also is a developmental variable, vocational identity may be a unifying construct that researchers can

use in trying to integrate the . . . perspectives on vocational choice” (p.337).

Raskin (1985) suggested taking a look at the concept of identity as it relates to the vocational domain. According to Raskin, individuals who have achieved identity are said to have experienced conflict with choices and have been able to work through the conflict, realizing that going in one interesting direction may close the door on some other career options. He refers to these individuals as “identity achievers” and describes these individuals as having a realistic understanding of what steps need to be taken to enter an occupation and of the requirements involved in succeeding in that occupation. Identity achievers are able to discuss why they have chosen a particular occupation and why they have discarded others. Their view of themselves complements their view of their occupational choice with respect to values, behaviors, and beliefs.

Holland (1985) discussed vocational identity within his theory of personality and work environments. He explained during adolescence there was an “increasing differentiation of preferred activities, interests, competencies and values” (p.16-17). The construct of vocational identity as defined by Holland, Daiger and Power (1980a) is “the possession of a clear and stable picture of one’s goals, interests, personality and talents” (p.1). Holland (1973) suggested that vocational identity becomes more stable in terms of personality type as the “reciprocal interaction of person and successive jobs usually leads to a series of success and satisfaction cycles” (p.26). Spokane and Hawks (1990) when reviewing identity status literature, found career development and vocational identity were parallel processes.

Studies by Blustein (1989) and Blustein, Devinis, and Kidney (1989) tested propositions about the relationship between career development and

identity formation. Blustein investigated the relationship between motivational processes and career exploration beliefs and behavior. Blustein tested 154 undergraduates at a large university. Motivation was found to be significantly related to career exploration activity. In a further study, Blustein, Devinis, and Kidney found that career exploration may provide a means for individuals to learn about themselves in a way that may be relevant to other important aspects of personality development. Implications suggest that vocational identity may be integral in obtaining clarity in an individual's search for identity.

My Vocational Situation (Holland, et al., 1980b) was used for this study because it was designed to be used with students grade nine and above. According to the manual (Holland, et al.1980a) the instrument measures three career related constructs:

1. Vocational Identity means the possession of a clear and stable picture of one's goals, interests, personality, and talents. This characteristic leads to relatively untroubled decision-making and confidence in one's ability to make good decisions in the face of inevitable environmental ambiguities.

2. The Occupational Information category provides the client the opportunity to indicate a need for vocational information, most of which is available in printed form. The counselor can quickly direct the client to appropriate materials.

3. The Barrier's category invites the client to indicate external obstacles to a chosen occupational goal (p.1).

Most students complete My Vocational Situation in ten minutes or less. MVS consists of three scales: (1) Vocational Identity (2) Occupational information and (3) Barriers. The first 18 items comprise the V.I. scale and are answered true-false. The remaining four items are answered yes-no. Studies of

reliability and validity (Holland, Daiger & Power, 1980a; Holland, Johnston, & Asama, 1993; Tinsley, Bowman & York, 1989) show that the V.I. Scale has construct validity and retest reliability.

Career Indecision

Career indecision is the condition whereby the individual lacks the sequential narrowing and specifying of choice options as one translates information of how educational and occupational alternatives permit one to complete the self concept (Super, 1980). Vondracek, Hostetler, Schulenberg, and Shimizu (1990) state: "Clearly, a means for the identification and measurement of the various pertinent dimensions of career indecision seems to be a most desirable objective" (p.98).

Career indecision has long been a focus for vocational guidance counselors, college advisors, and career counselors. There are several models utilized explaining the development of career decision making skills. There is the trait-factor theory, sociological theories that emphasize development of behaviors to cope with environmental circumstances, self concept theories, personality approaches, and behavioral approaches (Osipow, 1983).

Slaney (1988a) when reviewing career indecision literature, suggested that career indecision research has been contradictory because researchers have not been able to differentiate between people who are undecided about careers from those who are generally indecisive. Meier (1991) reports that an assumption of much of the career indecision literature he reviewed is that being undecided is a state to be avoided at all costs. Instead, he suggested the "vocational decision making process may resemble a loop, where individuals try on a decision, much like an article of clothing and determine if it fits" (p.149).

research, determined that undecided students are a heterogeneous group composed of three sub groups characterized by people who (1) express no pressure to decide right now (2) show mild to moderate immaturity and (3) show moderate to severe immaturity.

Fuqua and Hartman (1983) proposed a model to explain three types of indecision. The first type, developmental, suggests the individual has not given much thought to decision making due to a lack of maturity. The second type is acute. These individuals can identify some specific inhibitors that prevent them from making a vocation choice. The third type is chronic; individuals lack self concept and self confidence, and of the three types, it is the most involved. The first two types benefit from career counseling that helps identify specific behaviors in vocational choice making. The third group would need self esteem development before making career decisions (p.27-29).

Various researchers discussed career indecision as a one dimensional or multidimensional construct including an occupational decision development study by Jepson (1975); a sequential elimination approach (Gati,1986); utilizing a three dimensional construct of career indecision (Jones, 1989) and diagnosing career decision problems using multidimensional measures. Chartrand and Robbins(1990) state: "These multiple dimensions relate to both cognitive defects, such as limited requisite career information, and affective interferences, such as anxiety" (p.166). It appears that the career indecision construct is multidimensional and is additionally linked to vocational identity and self efficacy.

Poole and Cooney (1985) conducted research to determine (a) whether high school students had an awareness of possibilities of occupations, regardless of social class, ethnicity, or gender, and (b) whether there were

personal constraints on the selection of occupations for self. Their results showed that while adolescents had an extended awareness of possibilities of occupational choices, factors such as social environment, gender, and social status influenced those occupations individuals perceived for self. "Integral to career development and guidance programs . . . should be . . . strategies which explore personal awareness within context of the relationship between self and society " (p.261).

Vondracek, et al. (1990) examined whether the Career Decision Scale (Osipow, et al., 1976) total score and the four sub scales were related to students' career decision status, grade level, and gender. Many significant differences in the various indecision scales were found to be due to gender but not grade level. Their sample included junior high and high school students.

Vondracek, et al. (1990) found four types of career indecision among junior and senior high school students on the Career Decision Scale. Some students experienced confusion and lack of experience in career decision making skills. Some needed support. Some found several alternatives for careers equally attractive. The last type experienced external barriers and lacked interest in any decision making.

The Career Decision Scale (Osipow, et al., 1976) was specifically designed to examine the different dimensions of career indecision. Research has shown the Career Certainty item, as a single indicator, has good test-retest reliability and convergent and predictive validity (Osipow, 1987; Vondracek et al. 1988). The CDS has yielded adequate reliability and validity estimates. Test-retest reliabilities calculated over two-week intervals yielded values of .90 for 56 introductory students and .82 for 59 students in a course on personal effectiveness (Slaney, 1988b).

Hartman, Fuqua, and Hartman (1988) chose state anxiety, trait anxiety, locus of control, and identity as variables to examine the construct validity of an adapted CDS. As they concluded, "The interpretation of the total adapted CDS score . . . seems to hold promise as an intervention assessment device. The internal consistency reliability . . . remains consistently high. . . . The validity of the instrument seems evident" (p. 257).

Tinsley, Bowman and York (1989) studied Career Decision Scale, (Osipow, et al., 1976), My Vocational Situation, (Holland, Daiger & Power, 1980) Vocational Rating Scale (VRS) (Barrett, T.C. & Tinsley, H.E.A., 1977a), and Decisional Rating Scale (DRS) (Barrett, T.C. & Tinsley, H.E.A., 1977b), to investigate the independence of these instruments. Factor analysis was performed and those with factor loading of .60 or greater were labeled. The five named were clarity, certainty, indecision, decision-making obstacles, and informational deficit. They noted a substantial overlap in the VRS, MVS Vocational Identity Scale, and the CDS Certainty Scale in the areas of career indecision and vocational identity.

There are sixteen items on the Career Decision Scale that describe the components of vocational indecision. Two initial items on the test measure the respondents' certainty about career choice and college major. Students circle the number that most clearly describes them on each question on a Likert scale 1-4, with 1 being not at all like me, 2-only slightly like me, 3-very much like me, and 4-exactly like me. Total score possible is 64, and is derived by summing up the scores for questions 3-18. Respondents who yield a higher total score represent individuals with a higher degree of undecidedness.

Occupational Self Efficacy

Efficacy expectations refer to peoples' beliefs that they possess the necessary competence to perform behaviors required to obtain desired outcomes (Meier, 1991). One of the major components of the self efficacy theory is that efficacy expectations are important determinants of initiating and persisting in behaviors. Betz and Hackett (1981) applied Bandura's (1977) self-efficacy theory to vocational psychology and provided a new construct to investigate several issues, especially gender differences, in the decision making process.

In their initial study, Betz and Hackett (1981) postulated a self efficacy paradigm of female career development. They examined the relationship of gender and self efficacy in college women and men to the range of career options considered. Respondents were asked to consider ten job titles representing male-dominated occupations and ten job titles representing female-dominated occupations, and to indicate the degree of interest in each career. Self efficacy estimates were obtained by asking respondents to indicate for each occupation whether or not they could (a) successfully complete the education and/or training required, and (b) perform the required job tasks. Confidence ratings were obtained by asking the respondents to indicate on a one to ten scale how confident they were of being successful. The titles were selected to represent commonly known occupations and Holland's hexagonal code of six fields of work. Results of the investigation showed that although undergraduate women had ability scores comparable to men, they possessed lower self efficacy scores for occupations that were predominantly male dominated. The finding implied that women had been socialized not to select nontraditional occupations. Much research followed in vocational self efficacy

to replicate and follow this important study.

Taylor and Betz (1983) investigated the utility of Bandura's (1977) self efficacy theory to the understanding and treatment of career indecision. The authors developed a measure of self efficacy expectations with regard to fifty tasks or behaviors required in career decision making. They administered this instrument and the Career Decision Scale (Osipow, et al., 1976) to 346 subjects. Results showed that students with less confidence in their ability to complete tasks required for effective decision making also were more vocationally undecided. The implications were that career decision making self efficacy may have utility in understanding career indecision.

Lent, Brown, and Larkin (1984) assessed the relation between self efficacy beliefs and academic success and persistence among students considering engineering and science careers. Their findings supported the validity of using self efficacy as a construct in explaining vocational behavior. Lent, Brown, and Larkin (1986) explored the relation of self efficacy beliefs to educational/vocational choice and performance, assessing the extent to which efficacy beliefs predict academic performance and perceived career options in the same fields as their previous study, science and engineering.

Lent, Brown, and Larkin (1987) also compared self efficacy with three alternative theoretically based mechanisms--student environment, interest congruence, and anticipation of decisional consequences. The sample was college students considering science and engineering. The results indicated that self efficacy was the most useful predictor of academic performance and range of perceived career options, while congruence was differentially useful in explaining career indecision. The three were also interrelated.

Hackett, Betz, O'Halloran, and Romac (1990) used the self efficacy theory

to explore whether the results of performance on a gender-linked (math) and gender-neutral (verbal) task would influence self efficacy. They determined to what extent the success of the task performance generalized to other domains. This type of investigation is an important research area. If interventions are designed to strengthen weak career self efficacy expectations, and if they provide positive experiences that lead to performance on tasks, then those interventions will promote realistic career-related self efficacy. Their research suggested that success experiences enhance self efficacy.

Lauver and Jones (1991) extended the career self efficacy model using an ethnically mixed rural high school population. They noted differences in perceived career options associated with ethnicity in one third of the careers studied and ethnic differences in efficacy estimated. The minority respondents tended toward broader horizons than Whites which may have been a reflection of aspiration. The study generally supported the use of a career self efficacy model in determining gender differences as well as ethnic differences in consideration of perceived career options.

The Occupational Self Efficacy Scale (Betz & Hackett, 1981) was developed to measure students' perceptions of self efficacy with respect to the educational requirements and job duties of 20 commonly known occupations. The instrument was originally used to test the hypotheses that women were under-represented in some non-traditional occupations. Format A was used in the present investigation. Respondents are asked to respond "yes or no" to each of the 20 occupations. If they answered "yes", they added a 1-10 confidence rating that responded to how strongly they felt they could succeed in that occupation. The yes-no response indicates level, and the 1-10 confidence rating indicates strength. Several different scores are available from the OSES.

Sub scale scores can be calculated for educational requirements and job duties separately. Scores can be obtained for the ten traditionally female and ten traditionally male occupations. For this research, total educational requirement scores and job duties scores were used.

Overall confidence rating scores are obtained by summing the scores of the confidence rating for those occupations to which the respondent answered yes, that he or she could successfully accomplish the task. "The procedure of adding confidence ratings only for those items where a 'yes' response has been indicated is analogous to Bandura's method of assessing the strength dimension of self-efficacy" (Betz & Hackett, 1983, p.11). Internal reliability reported in the manual was .95 (total score). The authors reported an alpha of .94 for the measure as a whole, and .92 and .89 for the job duties and educational requirements sub scales, respectively. Test-retest reliability were .55 and .70 for level and strength. Concurrent validity was given a value of r .73.

Because the Career Decision Scale, My Vocational Situation and Occupational Self Efficacy Scale was given to all participants, the relative ease in administration was of consideration. All three tests provided administrative directions to the individual. All could be administered in less than 20 minutes time. All required a minimum of reading skills. No writing was required. Respondents were asked to circle numbers which indicated their preference level for each item on each of the tests.

Ethnicity

Compared to the majority population, Hispanics are disadvantaged both educationally and in terms of occupational employment (Arbona, 1990). In

Arbona's review of literature, Hispanics numbered 14.6 million in 1980 and that number is expected to increase between 8.6% and 9.9% by the year 2000. However, Hawks and Muha (1991), in a review of career services offered minority students, noted little research has been done with the needs of minority groups in mind and that counselors may effect social change for this group through intervention. Arbona and Novy (1991) noted the discrepancy between aspirations and expectations of Hispanics, and this may occur because students' expectations followed the distribution of available jobs--particularly for gender stereotyped areas. National unemployment rates fluctuate over time, but the level of unemployment for minorities, especially African American and Hispanic males, is high.

"One of the most serious problems faced by Hispanics is the high drop out rate from school. The 1984 United States Bureau of the Census reported approximately 50% of Mexican-American and Puerto Rican youth leave school without a diploma and close to 40% of all Hispanic dropouts leave school before the tenth grade" (Arbona, 1990, p.309). Research on vocational interests suggest that Hispanic students' view of the work world is similar to views held by the majority population. Studies using the Harrington O'Shea Career Decision Making System-Revised (1991) found that all six of Holland's (1973) hexagonal model of career interests applied to Hispanic high school and college students. According to Cook (1991), in order to understand the influence of ethnicity, counselors need to understand the meaning of ethnicity to the individual, the amount of discrimination a person may have experienced already or is likely to experience, and how these two factors shape aspirations and identity. Counselors need to incorporate this reality into intervention design. Bowman (1993) called for a need to provide same-race role models

and consider familial factors when working with Hispanics.

Some research has been done with minority populations. Lauver and Jones (1991) looked at gender and racial/ethnic differences in perceived career options in White, Hispanic, and American Indian ninth and eleventh graders. Females indicated more interest in and self efficacy for opposite sex-typed occupations than did males. This may be because males are influenced by status or pay attributed to typically female jobs. Ethnic differences were noted as well, with Hispanics scoring lower on perceived career options available than Whites. Haas and Sullivan (1990) were able to decrease Hispanic students' gender stereotyping of occupations by matching individuals with ethnically matched role models. Black students, in a study by McNair and Brown (1983) had nearly the same occupational aspirations as did White students, but Black students were lower in career maturity. One possible generalization that could be made is that unless skills and attitudes are attained to pursue those career goals, most likely, minority students will lower their aspirations and expectations.

Church, Teresa, Rosebrook, and Szendra (1992) utilized Bandura's (1977) self efficacy theory with 85 minority high school equivalency students. Generality of self efficacy was related to the range of occupations they considered but not to their aptitude. Both men and women reported greater self efficacy and willingness to consider occupations dominated by their own gender. Women tended to reject non gender-dominated occupations more than men. Arbona's (1990) survey reported that although studies were limited and the findings were also limited, Hispanic women's career aspirations were limited to traditional careers and that career and age of marriage aspirations may be frequently in conflict. The reader is cautioned that these are far from

being firm conclusions and much more research is needed. The study supports the use of the self efficacy model with minorities.

The research summarized by Arbona (1990) contradicted the previous held explanations that through socialization, Hispanic families do not motivate children to aspire to high status career achievement. The fact that in the studies reviewed for this research, Hispanics have high aspirations, but lower expectations of achieving their occupational goals than the majority population, suggests that Hispanics may be aware of the barriers they will encounter in obtaining their career goals. It was suggested by several authors (Hawks & Muha, 1991; Lauver & Jones, 1991; Lent & Hackett, 1987) that more research be done with diverse populations. Differences in educational attainment for Hispanics may be related to factors such as socioeconomic status, acculturation, and school variables, rather than simply cultural traits.

Interventions

The continued development of career resources and services is in response to awareness, at the national level, of the need to give our youth skills and information to exist in a global society. Fretz (1981) stated "an intervention was any activity . . . intended to facilitate career development; interventions may be as brief as administering and presenting results of an interest inventory or as extensive as a full year curriculum in career development" (p. 78). Several articles were reviewed in designing the career development workshop for students (Betz, 1992; Bloch, 1989; Herr & Watts, 1988; Holland, Magoon & Spokane, 1988; Kush & Cochran, 1993; Oliver & Spokane, 1988; Post-Kammer, Fouad & Williams, 1985; Prediger & Noeth, 1979). Vondracek and Schulenberg (1992) remind counselors to look not only at developmental differences in the population studies, but also at history-graded influences, such as the L.A. riots,

recession, or the closing of a major business in the area.

Oliver and Spokane (1988) contributed a research integration of innovations in career intervention. They investigated whether some treatments are more effective than others with some clients and whether length of treatment effects outcome. Classes had the greatest impact. The greater the number of hours or sessions the intervention took place, the greater the favorability of the outcome.

Holland, Magoon, and Spokane (1981) describe ideal interventions as having five components: "(a) occupational information organized by a comprehensive method and easily accessible to the client; (b) assessment materials . . . that clarify the client's self-picture; (c) individual and/or group activities that . . . rehearse career plans; (d) counselor's, group, peers that provide support; and (e) comprehensible cognitive structure for organizing information about self and occupational alternatives" (p.298).

Bloch (1989) found that despite a consensus concerning the causes of student dropout, there are a number of educational programs in place that are successful. The National Career Information System undertook a study to identify strategies for using the Career Information System (CIS), which is a computer-based information system, with at-risk youth. Bloch reported a characteristic integrated into all successful programs was a career development program. This was not a one-shot delivery of information to college bound seniors, but a multi-year career development program with activities appropriate by age and stage that were sequenced. Secondly, the successful intervention programs incorporated a variety of media, including interest inventories, audio-visual materials, computers, and videotape systems that promoted career awareness. While in some programs, CIS was the focus, in many programs, it

was just one of the several resources that was equally used by program administrators.

Betz (1992) recommends that counselors use all four sources of efficacy information in designing intervention programs: performance accomplishments, vicarious learning through observation, emotional arousal, (where arousal in the form of anxiety gives the individual information in regards to performance capability) and verbal persuasion, through encouragement. These are based on Bandura's (1977) original model and are the antecedents of perceived self efficacy. The consequences of the perceived self efficacy are choice of behavior, performance in the chosen domain, and persistence in the face of barriers and obstacles experienced.

Kush and Cochran (1993) attempted to improve decision making with 12th-graders through a parent-child career planning program. Students participated in a five week program that included activities in self awareness, career awareness, decision making, and planning. Results showed students participating in the program had less indecision, saw careers as more salient, had a stronger self efficacy, and greater sense of agency than those who did not participate.

McAuliffe (1991) suggested targeting subgroups with tailored workshops and assessing within-class individual differences in career self efficacy and decision making skills and intervening with specific strategies. Prediger and Noeth (1979) conducted a similar design. They met in small group sessions to discuss vocational interest scores and vocational planning. This was designed to encourage girls to consider a full range of occupational choices. A total of 390 ninth graders participated, with 195 in the control group and 195 in the treatment group. Results showed that the intervention stimulated vocational

exploration. After one month, researchers observed increased congruence between occupational preferences and measured interest. Continued counselor-student attention was warranted if the increased congruence observed after one month was to be maintained. There was some differentiation across interest types suggesting certain students may need more counselor attention than others.

Herr and Watts (1988) used worker shadowing as a method of intervention. An important feature of work shadowing is the emphasis on the role of worker. It allows a follower not only to view the formal role of the work guide, but also how the particular worker copes with the role. The student learns about the tasks, the processes within the workplace, and the environment of the workplace.

Several authors called for increased career counseling with minority populations (Arbona, 1990; Betz, 1991; Hawks & Muha, 1991; Lent & Hackett, 1987). Bowman (1993) noted that unlike the majority culture many ethnic groups operate in a group or family-oriented framework, so group intervention may be more effective. Hawks and Muha (1991) suggest that counselors include students' language and culture into intervention programs. The minority community, especially parents, should be included in career programs. Counselors should monitor access issues and may find it useful to analyze their service patterns of the counseling center to determine priorities and target minority groups. Counselors can create coalitions with members of the minority community to solicit information and act as mentors and role models for students in developing a career program. Bloch (1989) found that a common theme in successful career programs is a coalition between business and schools.

Some specific intervention programs were reviewed. Haas and Sullivan (1991) used Hispanic and non-Hispanic role models to present career descriptions of sex-typed careers. Their finding concluded that both the groups who had career descriptions read by Hispanic or non-Hispanic role models had a less sex-stereotyped post-treatment attitude towards the careers they read about, but only the Hispanic role model group-readers had a less sex-stereotyped attitude towards careers they did not read about, indicating a significant generalization effect associated with ethnically matched role models.

In a Precollege Program (PCP) at the University of Wisconsin-Milwaukee, high school and college collaboration took place to promote successful completion of high school and the eventual graduation from college of disadvantaged youth who showed academic promise in math and science (Post-Kammer, Fouad & Williams, 1988). Activities included skills building, tutorial support, career advising, and counseling. In a follow up of the program, Post-Kammer, et al. (1988) found the PCP effective in reducing the potential drop out range among participants. Having access to the university was noted as one of the reasons for success, as well as better preparation for a college curriculum. It was noted that minority students often do not have the opportunity to get on a college campus and may be intimidated by the perception of what a university will be like.

D'Andrea and Daniels (1992) designed a project for inner-city black youth that met their career development needs through a multi-faceted approach, including services to develop cultural identity and political advocacy, as well as promoting career awareness, teaching pre-employment skills, increasing personal discipline, and learning problem-solving skills.

It is clear that when designing an intervention program for research,

several considerations must be made to ensure all students' needs are included. Programs should provide a multi-faceted intervention which employs a variety of activities for all ethnic groups, academic ability levels, and should pay attention to the special needs of both genders. Fretz (1981) and Betz (1991) emphasized that intervention programs should be evaluated for effectiveness as well. Bowman (1993) suggests paying closer attention to reporting for minority groups. Many studies neglect to report race. Interventions for white middle class populations may not be relevant for minorities.

Several ideas and questions were considered when planning for the specific intervention used for this project. What theoretical thinking would be employed? Should the intervention take place over time or just be a one-shot assessment? How do students best acquire career knowledge? What materials are produced that have validity and reliability on their own? What activities can be included that not only provide information for students, but are also *fun* to participate in? What does research show as proven components of a successful intervention?

The theoretical reasoning behind various activities utilized in this intervention workshop followed Bandura's theory of self efficacy (1977). These methods include: (1) performance accomplishments, (2) vicarious learning, (3) verbal persuasion, and (4) emotional arousal. Specifically to accomplish these four methods, the following were employed:

1. performance accomplishment: completing the Harrington O'Shea Career Decision Making System-Revised (Harrington & O'Shea, 1992)

2. vicarious learning: watching the Career Decision Making System, Revised Career Video: Tour of Your Tomorrow (Feller & Vasos, 1993) video series and participating in a "shadow day" work experience in the

video series and participating in a "shadow day" work experience in the community

3. verbal persuasion: receiving individual support and discussion of results of the Harrington O'Shea Career Decision Making System-Revised from teachers and/or counselor

4. emotional arousal: visiting the counseling center to spend time on Discover, a computer-aided guidance program; hearing about other resources available for them to use to seek further information; and writing a one page paper on career requirements and opportunities in their field of choice using library resources to become more comfortable with exploration and confident with career decision-making skills.

Super's theory of ages and stages (1972) provided framework for this intervention. According to his developmental theory, individuals go through a process in identifying and selecting an occupation, and this is an attempt by the individual to fulfill a sense of self. He proposed a congruence between self concept and vocational identity, that our "life rainbow" includes the many roles one plays and each role effects another in one's life space of work, family, and community. Holland's typology theory was also considered in that "people search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles" (Holland, 1973, p.4).

Several general suggestions presented by previous researchers were employed in this project intervention. Oliver and Spokane (1988) suggested length of treatment impacted results. This intervention took place over the span of two weeks. All 10th graders in the career development workshop participated in activities during ten class periods of 50 minutes each, plus a one

preferential choice of occupation. McAuliffe (1991) and Prediger and Noeth (1979) suggested targeting subgroups with tailored workshops and assessing within-class difference in career self efficacy and group decision making skills. The 87 Sophomores in the treatment group were divided into subgroups of no more than 25 and delivered the same intervention activities.

Holland, Magoon, and Spokane (1981) described five components for an ideal intervention that were discussed earlier in this chapter. This research provided occupational information through administration of the CDM-R that was both comprehensive and individual. The assessment material provided clarity of information for the individual. The shadowing experience (Herr & Watts, 1988) provided individuals with a rehearsal of career plans. Students were continually encouraged throughout the project and supported in their choices by counselors, teachers, and other students.

Bloch's (1989) characteristics (described earlier in this chapter) of successful intervention programs were also incorporated. Information from CDM-R and use of DISCOVER, plus the one page occupational paper students wrote were gathered into a portfolio and given to the junior grade counselor at Battle Mountain High School. The workshop included an interest inventory (CDM-R), computers (DISCOVER program), a videotape system (CDM-R Career Videos: Tour of Your Tomorrow), and materials that promoted career awareness. Students used the counseling center resources and wrote a paper using career resources available in the library.

Several specific interest surveys were examined for use in this project before deciding on the Career Decision Making System-Revised (CDM-R) by Harrington and O'Shea (1992). It "is a comprehensive career planning instrument that surveys interests, values, abilities, and training plans and

related them to extensive career information in client-oriented, interpretive materials" (Harrington, 1991, p.210). It is an occupational interest system designed to facilitate vocational decision making in youth and adults. It is an interactive system that actively involves the user. Users self-assess occupational interests based on a 120-item interest inventory; self report preferences for school subjects liked, work values, and abilities; identify strengths and preferences for occupational groups, and explore specific occupations in each group. The survey gives the user several specific alternatives to seek resources on.

Because of the importance of the Interest Survey, most research has been done on this aspect of the instrument. As reported in the Manual (Harrington & O'Shea, 1982) reliability coefficients showed internal consistency for the six Interest Survey scales to be uniformly high (.90s). Short term test-retest coefficients range from .75 to .94. High self scoring reliability (.98) is confirmation that self scoring is appropriate for this instrument. Droege (1984) concluded as follows: "In summary the CDM is an excellent example of a systems approach to career decision-making The authors have achieved a self administering, self scoring and self interpreting assessment and occupational exploration system with minimum requirements for counselor involvement" (p.89).

Bowman(1991) compared the Self Directed Search (Holland, 1985) and the CDM for counselor use. Since both instruments use Holland's (1977) theory of vocational development, other factors were considered. The CDM-R explains the purpose of the inventory to the user. Harrington and O'Shea (1982) replaced the original Holland code titles with terms they believed were more descriptive of jobs within each category. Their titles are: Crafts (Realistic);

Scientific (Investigative); The Arts (Artistic); Social (Social); Business (Enterprising) and Clerical (Conventional). Users begin with the Survey Booklet to come up with preferred occupational clusters, amongst 18 covering a broad area of career options. The four page Interpretive Folder guides users in continuing their career decision making. Bowman (1991) describes advantages of the CDM-R to include its categorization of occupations, abilities and values into small, understandable clusters; easy administration and self scoring; and yearly updating of CDM-R's career information. The disadvantage was moving from the Survey Booklet to the Interpretive Folder which was considered cumbersome and confusing. Counselors are cautioned to clarify instructions for younger clients.

In the Facilitator's Guide of CDM-R Career Video: Tour of your Tomorrow, Feller and Vasos (1993) explain that "seeing how career options relate to interests, values and abilities helps viewers explore future directions Through a wide range of jobs within each of the six career areas, workers illustrate how their personality pattern fits a career area, how they define success, what skills they use, and the importance of lifelong learning" (p.1). The combination of easy administration of the CDM-R, combined with the accompanying videotape series Tour of Your Tomorrow (Feller & Vasos, 1993), made this the more appealing system to use for this research project.

The DISCOVER computer aided career guidance system (CACGS) was the system available to students in this study. It is not the scope of this investigation to compare different CACGS. A review of the literature by Sampson (1984) suggests that computer aided programs are a positive experience for clients utilizing them; client's knowledge of self and the world of work is expanded; clients have greater confidence in their career decision

work is expanded; clients have greater confidence in their career decision making skills; clients are more specific about their career and educational plans after using CACGS, and clients seem more motivated to use additional career resources after using a computer aided career guidance system (p. 189). One specific study that supports the use of DISCOVER for Adult Learners found DISCOVER having a positive impact on vocational identity (by assessing this construct using My Vocational Situation, vocational identity scale) and subjects' career decidedness (Sampson, Reardon, Lenz, Ryan-Jones, Peterson, & Levy, 1993).

The present study was designed to respond to the recommendations made by researchers to implement an intervention program for 10th grade high school students of diverse academic ability and ethnicity. There was much reason to believe a career development workshop would impact all students in a positive way in the areas of vocational identity, career indecision, and self efficacy.

Chapter 3
Methodology
Introduction

The purpose of this research was to study whether a specific career development workshop used with high school 10th graders had an impact on individual students' vocational identity, career indecision, and self efficacy.

Population and Sampling Design

The sample for this study included sophomore students who were enrolled during second semester of the academic school year 1995-1996 at two rural high schools, Battle Mountain High School and Roaring Fork High School, in Colorado. The sampling pool was 110 sophomores from Battle Mountain and 104 sophomores from Roaring Fork. The students were invited to participate in the study (see appendixes E and F). They had a permission form signed by their parents in accordance with the informed consent to participate in a research project requirement of Colorado State University (see Appendixes G and H). Of these, complete results were obtained from eighty-seven students at Battle Mountain High School, who formed the treatment group. Eighty-four

students at Roaring Fork High School completed all pre and post tests and formed the control group.

Identification and Research Design

The measurements of pre and post test variables were compared between the treatment group and the control group. The experimental research design was:

	Pretest	Treatment	Post test
Control Group	O-1		O-2
Treatment Group	O-1	X	O-2

Description of Treatment

The workshop was formatted to include a variety of activities that utilized Bandura's theory of learning and modifying information (1977) already discussed in Chapter 2. These methods included:

1. performance accomplishments--experiences in successfully performing the activities, such as interest surveys.
 2. vicarious learning--watching or listening to others perform the behaviors successfully.
 3. verbal persuasion--receiving support from others.
 4. emotional arousal--for example, anxiety, in response to a behavior.
- Bandura believed that as self efficacy expectations increase, the frequency of approach rather than avoidance behaviors increase. With these four components in mind, the activities planned in the career development

workshop, included:

*completing the Harrington O'Shea Career Decision Making System Revised;

*watching the Career Decision Making System Revised: Tour of Your Tomorrow video series;

*participating in a "Shadow Day"--watching and working along side a mentor already involved in a career field the student may want to pursue based on knowledge of strengths and interests;

*working 30 minutes on DISCOVER, a computer-aided guidance program;

*a personal conference with counselors or teacher regarding results of the Career Decision Making System Revised inventory;

*guiding students through a 20 minute informational tour of the career center to preview other career related resources.

The career development workshop took place over the span of two weeks. Within that two weeks, all 10th graders had class periods to complete the Harrington O'Shea CDM-R; one class period to watch the CDM-R: Tour of your Tomorrow videos; class periods to research for a paper describing a career field of interest; one class period to conference and tour the career center; one class period to log time on the DISCOVER system . . All activities took place during students' regular English class. In addition, students missed one full day of school for the shadowing experience. All personnel involved received pre-workshop information, administered inventories, and had students participate in the career activities in an identical manner.

Variables Measured

The three dependent variables measured and analyzed were vocational identity, career indecision, and career self efficacy.

Vocational Identity is defined as the clarity of a person's vocational goals, interests, traits, and self perceptions. This leads to relatively untroubled decision making and confidence in one's ability to make good decisions in the face of inevitable environmental ambiguities. It was measured using My Vocational Situation, vocational identity scale.

Career Indecision is defined as the condition whereby the individual lacks a sequential narrowing and specifying of choice options as one translates information of how educational and occupational alternatives permit one to implement the self concept. It was measured using the Career Decision Scale.

Career self efficacy refers to an individual's belief that one possesses the necessary competence to perform behaviors required to obtain desired career outcomes. It was measured using the Occupational Self Efficacy Scale, self efficacy scale.

The primary independent variable was the treatment program. However, this study also looked at whether ethnicity, varying academic ability levels, and gender had any interaction with the treatment on the three dependent variables.

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Instruments Used

The instrumentation used for this study included My Vocational Situation (Holland, Daiger, & Power, 1980); Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1976); and Occupational Self Efficacy Scale (Betz & Hackett, 1981).

Data Collection and Analysis Procedures

The data collected for the study was the pre and post treatment scores on three instruments: My Vocational Situation, Career Decision Scale, and Occupational Self Efficacy Scale. The scores were analyzed to determine the effectiveness of a career development workshop. Before and after treatment scores were analyzed for the control group and the treatment group.

Each group met with the researcher and counselors two weeks prior to the intervention workshop. Pre-treatment administration of instruments as well as gathering of demographic data took place at this meeting. An overview of the study in progress was described, and expectations of the students were discussed. The treatment group was given an overview of the activities planned during the career development workshop. These meetings were approximately 50 minutes in length. The workshop lasted two weeks, with 10 class periods of 50 minutes each designated to complete the activities.

Two weeks after treatment intervention, a similar meeting with both groups took place to administer post-treatment instruments. A brief summary of "what-happens-next" was discussed, along with suggestions for further career resources available to both groups. This meeting also took about

50 minutes. In each meeting, students were given the three instruments one at a time, and there was ample time allowed for completing them.

Data Analysis

The data from the three dependent variables (vocational identity, career indecision, and career self efficacy), as measured by the three instruments, was analyzed using analysis of covariance. Additionally, it was hypothesized that the workshop treatment may have had different effects with students based on their gender, ethnicity, or different academic abilities. A series of multiple comparison tests were conducted and scores were analyzed to examine the interaction effects of gender with treatment, ethnicity with treatment, and differing academic abilities with treatment.

Chapter 4

Analysis of Data

Introduction

This chapter provides an analysis of the collected data and presents conclusions based on the data concerning the research hypotheses. This chapter includes the following sections: (a) overview, (b) characteristics of the subjects, (c) analysis of variance, (d) analysis of covariance, (e) multiple comparison interactions between groups, and (f) summary of findings.

Overview

This study investigated the effects of a career development workshop on the vocational identity, career indecision, and career self efficacy of 10th grade high school students. There were 171 tenth grade high school students involved in the study. The instrument used to measure vocational identity was My Vocational Situation (MVS), vocational identity (V.I.) scale by Holland, Daiger, and Power (1980b). The instrument used to measure career indecision was the Career Decision Scale (CDS), career indecision (C.I.) scale by Osipow, Carney, Winer, Yanico, and Koschier (1976). The instrument used to measure

career self efficacy was the Occupational Self Efficacy Scale (OSES), confidence rating (CR) scale, by Betz and Hackett (1981a).

Twelve research hypothesis were tested concerning the effect of the independent variable on the dependent variables:

1. There will be a significant difference in the vocational identity of 10th grade students who go through the career development workshop and 10th grade students who do not, as measured by My Vocational Situation, (Holland, Daiger, & Power, 1980b), vocational identity scale.
2. There will be a significant difference in the career indecision of 10th grade students who go through the career development workshop and 10th grade students who do not, as measured by the Career Decision Scale, (Osipow, Carney, Winer, & Koschier, 1976), career indecision scale.
3. There will be a significant difference in the career self efficacy of 10th grade students who go through the career development workshop and 10th grade students who do not, as measured by the Occupational Self Efficacy Scale (Betz & Hackett, 1981), career self efficacy scale.
4. There will be a significant difference in vocational identity of 10th grade Hispanic students who go through the career development workshop and 10th grade Hispanic students who do not, as measured by My Vocational Situation, vocational identity scale.
5. There will be a significant difference in the career indecision of 10th grade Hispanic students who go through the career development workshop and 10th grade Hispanic students who do not, as measured by the Career Decision Scale, career indecision scale.
6. There will be a significant difference in the career self efficacy of 10th grade Hispanic students who go through the career development workshop and 10th

grade Hispanic students who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.

7. There will be a significant difference in the vocational identity of 10th grade students with high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not, as measured by My Vocational Situation, vocational identity scale.

8. There will be a significant difference in the career indecision of 10th grade students of high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not , as measured by the Career Decision Scale, career indecision scale.

9. There will be a significant difference in the career self efficacy of 10th grade students of high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.

10. There will be a significant difference in the vocational identity of 10th grade boys and girls who go through the career development workshop and boys and girls who do not, as measured by My Vocational Situation, vocational identity scale.

11. There will be a significant difference in the career indecision of 10th grade boys and girls who go through the career development workshop and 10th grade boys and girls who do not, as measured by the Career Decision Scale, career indecision scale.

12. There will be a significant difference in the career self efficacy of 10th grade boys and girls who go through the career development workshop and 10th grade boys and girls who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.

Characteristics of subjects

The 171 total subjects were identified at two rural high schools in Colorado. Eighty-seven 10th grade students from Battle Mountain High School formed the treatment group. Eighty-four 10th grade students from Roaring Fork High School formed the control group. Students were given letters describing the project and received permission from their parents to participate (see Appendixes E,F,G and H). Table 1 indicates the number of students participating from each school in terms of gender, ethnicity, and academic ability.

Table 1.

Number (N) of subjects by gender, ethnicity and academic ability

(N) of Subjects	Treatment (87)	Control (84)
Gender		
Girls	36	39
Boys	51	45
Ethnicity		
Hispanics	20	10
Anglos	67	74
Academic Ability		
High	49	27
Middle	28	32
Low	10	25

Analysis of Variance (ANOVA)

The two groups available for the research project were intact groups, and as such, were not randomly assigned to treatment or control. One intact

group formed the treatment group and the other intact group formed the control group. Analysis of covariance was used to adjust for any differences that may have been present before the project began. A simple, or one-way analysis of variance (ANOVA) was run to determine if there indeed were significant differences in the treatment and the control group mean pretest scores on the MVS (V.I.) scale, the CDS (C.I.) scale, and the OSES (CR) scale. The ANOVA did indicate a significant difference in the treatment group and control group in regards to the pretest MVS (V.I.) scale score at the .05 level. The results of those mean pretest scores are given in tables below.

The mean pretest MVS (V.I.) scale score for the control group (N=84) was 10.0. The mean pretest MVS (V.I.) scale score for the treatment group (N=87) was 8.3. The difference was found to be significant at the .05 level. Scores range from 0-18, and the higher score signifies a clearer sense of vocational identity. The analysis of variance is presented in Table 2.

Table 2. Analysis of Variance for MVS (V.I.) Scale Pretest Scores

Source of Variation	Mean	Standard Deviation	F	Significance of F
Control Group	10.0	4.00	7.09	.0085*
Treatment Group	8.3	4.16		

* significant at the .05 level

The mean pretest CDS (C.I.) scale score for the control group (N=84) was 32.94. The mean pretest CDS (C.I.) scale score for the treatment group (N=87) was 34.42. The difference was not significant. Scores on the CDS (C.I.)

respondent is in career decision making. The analysis of variance is shown in Table 3.

Table 3.

Analysis of Variance for CDS (C.I.) Scale Pretest Scores

Source of Variation	Mean	Standard Deviation	F	Significance of F
Control Group	33.22	7.55	1.19	.2778
Treatment group	34.06	8.75		

* significant at the .05

The mean pretest OSES (CR) scale score for the control group (N=84) was 144.01. The mean pretest OSES (CR) scale score for the treatment group (N=87) was 185.62. The difference was not significant. Scores range from 0-200, with 200 signifying "highest confidence" in completing educational requirements and performing job duties of 20 occupations. The analysis of variance is shown in Table 4.

Table 4.

Analysis of Variance for OSES (CR) Scale Pretest Scores

Source of Variation	Mean	Standard Deviation	F	Significance of F
Control Group	144.01	91.30	1.19	.2778
Treatment Group	185.62	100.17		

* significant at the .05

Analysis of Covariance (ANCOVA)

The analysis of covariance was the statistical method used for equating the treatment and control groups on the pretest scores. ANCOVA was used to adjust the subjects' post test scores for initial differences found in the pretest scores. The adjusted post test scores were then compared to determine if there were significant differences at the ($p < .01$) level. Borg and Gall (1983) describe a function of ANCOVA is to "reduce the effects of initial group differences statistically by making compensating adjustments to the post test means of the two groups" (p. 683).

The data in Table 5 presents differences between the control group and the treatment group post test scores on the MVS (V.I.) scale scores. The difference was found to be significant at the ($p < .01$) level.

Table 5.

Analysis of Covariance for the MVS (V.I.) Post test Scale Scores

Source of Variation	df	Mean Square	LS Mean	F	Significance of F
Control Group	1	215.33	9.33	27.88	.0001**
Treatment Group			11.80		

** significant at the .01 level

The data from the analysis of covariance for the CDS (C.I.) scale score is shown in Table 6. It can be seen that there was a statistically significant difference between the treatment group and the control group scores. The CDS (C.I.) pretest score was used as the covariate. A test of significance at the ($p < .01$) level was used.

Table 6.

Analysis of Covariance for CDS (C.I.) Scale Scores

Source of Variation	Df	Mean Square	LS Means	F	Significance of F
Control Group	1	556.94	35.82	15.64	.0001**
Treatment Group			31.91		

** significant at the .01 level

The data from the analysis of covariance for the OSES (CR) scale score is shown in Table 7. It can be seen that there was not a statistically significant difference between the treatment group and the control group confidence rating scores for career self efficacy. The OSES (CR) pretest score was used as the covariate. A test of significance at the ($p < .01$) level was used.

Table 7.

Analysis of Covariance for OSES (CR) Scale Scores

Source of Variation	Df	Mean Square	LS Means	F	Significance of F
Control Group	1	1017.52	171.35	.24	.6229
Treatment Group			176.64		

** significant at the .01 level

Multiple Comparison Tests

Multiple comparison tests were run to examine the interaction effects of the treatment workshop with ethnicity, gender, and academic ability. Ethnicity, gender, and academic ability were held constant *by school* in order to

determine interaction effects of gender with treatment, ethnicity with treatment, and academic ability with treatment, on the dependent variables of vocational identity, career indecision, and career self efficacy. Adjusted post test score means used the pretest scores as a covariate. According to Hinkle, Wiersma and Jurs (1988) "when a significant F ratio is found for . . . main effects . . . the researcher is . . . left with . . . deciding what led to the rejection of the null hypothesis, or which pairs or combination of means differ" (p. 415). Several pairwise comparisons were completed after statistically significant main effects were found for vocational identity, using the MVS (V.I.) scale scores and for career indecision, using the CDS (C.I.) scale scores. Results appear in Tables 8 through 11.

Multiple comparison tests were run to determine if there was a significant difference in the treatment group and control group adjusted post test scores on the MVS (V.I.) scale scores in terms of ethnicity and gender. The data from the multiple comparison test for ethnicity scores and gender scores is shown in Table 8. It can be seen that there was a statistically significant difference between Anglos in the treatment group and Anglos in the control group's scores on their vocational identity. The effects of treatment on gender data from the multiple comparison test presented in Table 8 shows a statistically significant difference between girls in the treatment group and girls in the control group. It also shows a statistically significant difference between boys in the treatment group and boys in the control group. A test of significance at the ($p < .01$) level was used.

Table 8.

Interaction Effects of Ethnicity and Gender with Treatment on MVS (V.I.) Post test Scores

Source of Variation	Control Group (84) Least Square Means	Treatment Group (87) Least Square Means	Significance of P
Ethnicity			
Anglo (141)	9.13 (74)	11.62 (67)	.0001**
Hispanics (30)	11.62 (10)	11.77 (20)	.0944
A x H	9.13 (74)	11.77 (20)	.0004**
Gender			
Girl (75)	8.87 (39)	11.23 (36)	.0048**
Boy (96)	10.11 (45)	12.16 (51)	.0080**

** significant at the .01 level

Note. The numbers in parentheses in each column are (N) for that column score.

A multiple comparison test was run to determine if there was a significant difference in the treatment group and control group adjusted post test scores on the MVS (V.I.) scale in terms of high, middle, and low academic abilities. The data from the multiple comparison test for academic abilities scores is shown in Table 9. It can be seen that a statistically significant difference was found for several of the interactions. There was a statistically significant difference in the academically high students (3.1-4.0 GPA) in the treatment group and the high and middle academic ability students (2.1-3.0 GPA) in the control group. There was a statistically significant difference in the middle academic ability students in the treatment group and high, middle, and low academic ability students in the control group. There was a statistically significant difference in low

academic ability students (less than 2.0 GPA) in the treatment group and high academic ability students in the control group.

Table 9.

Means and Mean Differences: Academic Ability /Treatment on MVS (V.I.) Post test Scores

	High (27)	Middle (32)	Low (25)	
Means				
Control Group	9.16	9.58	9.73	
Treatment Group	11.36	12.21	11.52	
	Control Group (84)			
	High (27)	Middle (32)	Low (25)	Signif. of P
Mean Differences Treatment Group (87)				
High (49)	2.20			.0145*
High		1.78		.0250*
High			1.63	.0554
Middle (28)	3.05			.0010*
Middle		2.63		.0016*
Middle			2.48	.0054*
Low (10)	2.36			.0052*
Low		1.94		.0871
Low			1.79	.1270

* significant at the .05 level

Note. The numbers in parentheses in each column are (N) for that column score

Multiple comparison tests were run to determine if there was a significant difference in the treatment group and control group adjusted post test scores on

the CDS (C.I.) scale scores in terms of ethnicity and gender. The data from the multiple comparison test for ethnicity scores and gender scores is shown in Table 10. There was a statistically significant difference between scores for Anglos in the treatment group and Anglos in the control group in terms of career indecision, with Anglos in the treatment group having significantly less career indecision than Anglos in the control group. There was a statistically significant difference in the scores of girls in the treatment group and girls in the control group. A test of significance at the ($p < .05$) level was used.

Table 10.

Interaction Effects of Ethnicity and Gender with Treatment on CDS (C.I.) Post test Scores

Source of Variation	Control Group (84) Least Square Means	Treatment Group (87) Least Square Means	Significance of P
Ethnicity			
Anglo(141)	35.38 (74)	30.67 (67)	.0002*
Hispanics (30)	35.37 (10)	32.68 (20)	.2655
A x H	35.38 (74)	32.68 (20)	.0729
Gender			
Girl (75)	35.73 (39)	31.37 (36)	.0138*
Boy (96)	35.03 (45)	31.97 (51)	.0563

* significant at the .05 level

Note. The numbers in parentheses in each column are (N) for that column score.

A multiple comparison test was run to determine if there was a significant difference in the treatment group and control group adjusted post test scores on the CDS (C.I.) scale scores in terms of high, middle, and low academic abilities.

The data from the multiple comparison test for academic abilities scores is shown in Table 11. There was a statistically significant difference in the middle academic ability students (those having a GPA from 2.1-3.0) in the treatment group and high, middle, and low academic ability students in the control group. A test of significance at the ($p < .05$) level was used.

Table 11.

Means and Mean Differences: Academic Ability/Treatment on CDS (C.I.) Post test Scores

		High (27)	Middle (32)	Low (25)
Means				
Control Group	34.29	35.13	36.70	
Treatment Group	33.32	29.59	32.10	
		Control Group (84)		
		High (27)	Middle (32)	Low (25)
				Signif. of P
Mean Differences				
Treatment Group (87)				
High (49)	.97			.6014
High		1.71		.2752
High			3.38	.0598
Middle (28)	4.70			.0160*
Middle		5.54		.0018*
Middle			7.11	.0002*
Low (10)	2.19			.3839
Low		3.03		.2020
Low			4.60	.0631

* significant at the .05 level

Note. The numbers in parentheses in each column are (N) for that column.

Summary of Findings

The results of this study are indicated in the analysis of data in the preceding sections. To show the relationship of the findings to the research hypotheses, this summary is provided.

Research Hypothesis 1

The Research Hypothesis stated: There will be a significant difference in the vocational identity of 10th grade students who go through the career development workshop and 10th grade students who do not, as measured by My Vocational Situation, (Holland, Daiger, & Power, 1980b) vocational identity scale.

The findings provide a clear indication concerning Research Hypothesis 1. There was an initial difference in the MVS (V.I.) scale mean pretest scores of the treatment group and the control group using an ANOVA. That difference was determined to be significant at the ($p < .05$) level. However, to control for the pretest difference and to equate the group on pretest differences, the ANCOVA was used to test the significance of the post test scores. The scores on the pretest were used as the covariates. The adjusted post test score of the treatment group was a mean of 11.80 and for the control group, a mean of 9.33. (See Table 5). The difference was determined to be significant ($p < .01$). Therefore, Research Hypothesis 1 was accepted.

Research Hypothesis 2

Research Hypothesis 2 stated: There will be a significant difference in the career indecision of 10th grade students who go through the career development workshop and 10th grade students who do not, as measured by the Career Decision Scale, (Osipow, Carney, Winer, & Koschier, 1976) career

indecision scale.

The findings provided clear indications concerning Research Hypothesis 2. There was a difference in the treatment group and the control group on the CDS (C.I.) pretest scale score. Using a one way ANOVA that difference was not determined to be significant at the ($p < .05$) level. ANCOVA was used again to test the difference between the post test scores on the Career Decision Scale, (C.I.) scale. As shown in Table 6, the adjusted post test scores of the treatment group was 31.91. The adjusted post test scores of the control group was 35.82. The difference was determined to be significant ($p < .01$). Research Hypothesis 2 was accepted.

Research Hypothesis 3

Research Hypothesis 3 stated: There will be a significant difference in the career self efficacy of 10th grade students who go through the career development workshop and 10th grade students who do not, as measured by the Occupational Self Efficacy Scale (Betz & Hackett, 1981), career self efficacy scale.

Concerning Research Hypothesis 3, there was not a significant difference in the treatment group and the control group on the OSES (CR) pretest scale score. ANCOVA was used to test the difference of the post test scores, using the pretest scores as covariates. As shown in Table 7, the adjusted post test scores of the treatment group was 176.64. The adjusted post test scores of the control group was 171.35. It was determined that this was not a significant difference ($p < .01$). The data did not support the acceptance of Research Hypothesis 3.

Research Hypotheses 4, 5, and 6.

Research Hypothesis 4 states: There will be a significant difference in vocational identity of 10th grade Hispanic students who go through the career development workshop and 10th grade Hispanic students who do not, as measured by My Vocational Situation, vocational identity scale. Research Hypothesis 5 states: There will be a significant difference in the career indecision of 10th grade Hispanic students who go through the career development workshop and 10th grade Hispanic students who do not, as measured by the Career Decision Scale, career indecision scale. Research Hypothesis 6 states: There will be a significant difference in the career self efficacy of 10th grade Hispanic students who go through the career development workshop and 10th grade Hispanic students who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.

Multiple comparison tests were run to determine if there was a significant difference between Hispanics in the treatment group and Hispanics in the control group in terms of vocational identity, career indecision, and career self efficacy. Using adjusted post test scores on the MVS (V.I.) scale, Hispanics in the treatment group score was 11.77. The adjusted post test score for Hispanics in the control group was 11.62. This was not determined to be a significant difference at the ($p < .01$) level. Research Hypothesis 4 was rejected.

The adjusted post test score on the CDS (C.I.) scale for Hispanics in the treatment group was 32.68. The adjusted post test score for Hispanics in the control group was 35.37. This was not significant ($p < .05$). Therefore, Research Hypothesis 5 was rejected. Because there was not a statistical significant difference in the career self efficacy of students in the treatment

group and students in the control group, multiple comparison tests were not considered for this summary. Research Hypothesis 6 was not accepted.

Research Hypotheses 7,8, and 9

Research Hypothesis 7 states: There will be a significant difference in the vocational identity of 10th grade students with high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not, as measured by My Vocational Situation, vocational identity scale. Research Hypothesis 8 states: There will be a significant difference in the career indecision of 10th grade students of high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not, as measured by the Career Decision Scale, career indecision scale. Research Hypothesis 9 states: There will be a significant difference in the career self efficacy of 10th grade students of high, medium, and low academic ability levels who go through the career development workshop than 10th grade students who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.

Multiple comparison tests were run to determine if there was a significant difference in academic ability of the treatment group and the control group on vocational identity, career indecision, and career self efficacy. Using adjusted post test scores on the MVS (V.I.) scale, the mean score for the treatment group is as follows: high academic ability, 11.36; middle academic ability, 12.21; and low academic ability, 11.52. The mean score for the control group is as follows: high academic ability, 9.16; middle academic ability, 9.58; and low academic ability, 9.73. Several between group interactions were determined to be

significant (see Table 9 for specific cell interaction data). A test of ($p < .05$) level of significance was used. Research Hypothesis 7 was accepted.

Adjusted post test scores on the CDS C.I. scale were used to determine if there was a significant difference between the treatment group and the control group's score for career indecision. The mean score for adjusted post test scores for the treatment group is as follows: high academic ability, 33.32; middle academic ability, 29.59; and low academic ability, 32.10. The mean score for the adjusted post test scores for the control group is as follows: high academic ability, 34.29; middle academic ability, 35.13; and low academic ability, 36.70. There were several between group interactions (see Table 11 for specific between cell interaction data) that were considered to be significant. A test of ($p < .05$) was used to test for significance. Research Hypothesis 8 was accepted. No data was analyzed for Research Hypothesis 9 because there was not a significant difference between the treatment group and the control group in terms of career self efficacy in the main effects. The data did not support the acceptance of Research Hypothesis 9.

Research Hypotheses 10, 11 and 12

Research Hypothesis 10 stated: There will be a significant difference in the vocational identity of 10th grade boys and girls who go through the career development workshop and boys and girls who do not, as measured by My Vocational Situation, vocational identity scale. Research Hypothesis 11 stated: There will be a significant difference in the career indecision of 10th grade boys and girls who go through the career development workshop and 10th grade boys and girls who do not, as measured by the Career Decision Scale, career indecision scale. Research Hypothesis 12 stated: There will be a significant

difference in the career self efficacy of 10th grade boys and girls who go through the career development workshop and 10th grade boys and girls who do not, as measured by the Occupational Self Efficacy Scale, career self efficacy scale.

Using the adjusted post test scores on the MVS (V.I.) scale, multiple comparison tests were run to determine if there was a significant difference between girls and boys in the treatment group and girls and boys in the control group. The adjusted post test score was 11.23 for girls in the treatment group and 8.87 for girls in the control group. The adjusted post test score was 12.16 for boys in the treatment group and 10.11 for boys in the control group. As shown in Table 8, the difference for both girls and boys was determined to be significant ($p < .01$). Therefore, in terms of vocational identity, Research Hypothesis 10 was accepted.

Multiple comparison tests were run using the CDS (C.I.) adjusted post test scores to determine if there was a statistical significant difference in girls and boys in the treatment group and girls and boys in the control group in terms of career indecision. Table 10 shows the treatment group girls' adjusted post test score was 31.37, while the control group girls' adjusted post test score was 35.72. The difference was determined to be significant at the ($p < .05$). Boys in the treatment group's adjusted post test score was 31.97, while boys in the control group's adjusted post test score was 35.03. The difference of ($p=.0563$) approaches significance but is not considered significant at the ($p < .05$). Therefore, Research Hypothesis 11 was rejected. Because there was not a significant difference between the treatment group and the control group in terms of career self efficacy in the main effects, multiple comparison tests were not considered for this summary. Research Hypothesis 12 was not accepted.

Chapter 5

Summary

Introduction

This chapter's purpose is to present conclusions and recommendations concerning this study. The remarks are presented in the following sections:

(a) summary, (b) conclusions, (c) discussion, (d) future research recommendations, and (f) general implications.

Summary

The purpose of this project was to study the effects of a career intervention workshop on the vocational identity, career indecision, and career self efficacy of 10th grade high school students. The population was selected from two rural high schools in Colorado, having total student populations of less than 500. A total of 171 students participated in this project. Students at Roaring Fork High School (n=84) formed the control group and students at Battle Mountain High School (n=87) formed the treatment group. The study took place over a six week period of time in February and March 1996.

A career workshop was selected as the treatment because many high school counselors use classroom interventions to reach the most students in the

least restrictive environment. The setting used in this study seemed to mirror the most appropriate location for a similar project to be replicated. There was previous research that supported the use of a career workshop as an intervention with students. The Harrington O'Shea Career Decision Making System Revised (Harrington & O'Shea, 1992) and the accompanying video series, CDMS: Tour of your Tomorrow (Feller & Vasos, 1993) were chosen because of the accessibility to the researcher and subjects. The assessment instrument had its own own validity and reliability as a tool to aid students in career exploration and decision making.

The dependent variables of vocational identity, career indecision, and career self efficacy were selected because of their validity as constructs of career intervention activities. Numerous studies in the past decades have investigated vocational identity and career indecision. Career self efficacy is a fairly new construct, as a result of Betz and Hackett's (1981) initial research.

There were three standardized instruments that were selected for use with the selected population. My Vocational Situation (Holland, Daiger & Power, 1980b); Career Decision Scale (Osipow, Carney, Winer, Yanico, & Koschier, 1976) and the Occupational Self Efficacy Scale (Betz and Hackett, 1981b) were chosen because they were easy to read, administer, and score. Each had been used in prior research projects and was accepted as being a valid and reliable instrument to measure vocational identity, career indecision, or career self efficacy.

The treatment group and the control group were administered the three tests two weeks before the treatment group began the career development workshop. The treatment group participated in workshop activities for ten, 50 minute class periods for two weeks and missed one full day of school to shadow

a business person who was performing in an area of the student's career interest, based on the results of the individual's Career Decision Making System. The students in the control group participated in no career activities during this period of time. The post test MVS, CDS, and OSES were administered one week after the completion of the workshop intervention to both the treatment and control groups.

A one-way ANOVA was selected to compare the differences in the mean pretest scores on the MVS, CDS and OSES between the two groups. The difference in the pretest score on the MVS between the groups was significant. The difference in the pretest scores on the CDS and OSES was not significant.

Using the pretest scores as covariates, an ANCOVA was used to equate the groups by controlling for the pretest score differences. It was also used to test the significance of the adjusted post test score means of the treatment and control group on the MVS, CDS and OSES. The difference on the adjusted post test mean scores for the MVS (V.I.) Scale was significant ($p < .01$). The difference between the treatment and control group adjusted post test mean scores for the CDS (C.I.) scale was also significant ($p < .01$). There was not a significant difference found between the two groups on the adjusted post test mean scores for the OSES (CR) scale.

Conclusions

The conclusions presented here are based on the data that was collected and analyzed. Twelve research hypotheses were developed. Based upon the findings, the treatment of a career development workshop did significantly increase the vocational identity of Battle Mountain High School students, as measured by the MVS, vocational identity scale.

Further, the career development workshop treatment did significantly decrease the career indecision of Battle Mountain High School students, as measured by the CDS, career indecision scale. The career development workshop did not significantly increase the career self efficacy of Battle Mountain High School students as measured by the OSES, self efficacy scale.

Based on analyzing the data, Hispanic students in the treatment group did not differ significantly from Hispanic students who were in the control group in vocational identity, career indecision or career self efficacy. Both girls and boys in the treatment group increased their vocational identity ($p < .01$). Girls in the treatment group decreased their career indecision significantly ($p < .05$) more than girls in the control group.

Last, based upon these findings, there were significant differences in high, middle, and low academic achievers in the treatment group in terms of increasing their vocational identity and decreasing their career indecision compared to the high, middle, and low academic achievers in the control group.

Discussion

The implementation of career development programs in schools has long been a topic of research. An effort was made to bring together conceptually related constructs of vocational identity, career decision making, and self efficacy, and provide some validity of using these constructs with gender, ethnicity, and academic levels of tenth grade high school students. High school counselors continue to be accountable to and meet the demands of students' emotional and social needs. Programs that target the greatest number of students, in the least, yet most productive amount of time, will become more

appealing and necessary.

This study makes a specific contribution to the body of research by providing data on a career development workshop that incorporated established career theory (Bandura, 1977; Holland, 1973; & Super, 1972); assessment (Harrington & O'Shea, 1992; Holland, et al. 1980b; & Osipow, et al., 1976); visual aids (Feller & Vasos, 1993); and the community members who supported a business/education partnership (Herr & Watts, 1988). It also provides data concerning using this type of intervention with an identifiable population and by measuring the effects on valid career development outcomes. However, a discussion of related research and previous findings regarding the constructs measured and the intervention employed was necessary to provide perspective to the findings in this research and to guide future studies.

The vocational identity of the subjects in this study was expected to change, and the findings show it did. As noted in Chapter 2, Savickas (1985) indicated a relationship between vocational development and vocational identity. Holland (1985) defined the construct of vocational identity as having a "clear and stable picture of one's goals, interests, personality, and traits" (p.1). The career development workshop which focused on assessment of the subjects' abilities, values, interests, and talents did significantly increase the vocational identity of treatment subjects.

The career indecision of subjects in the treatment group was expected to decrease as a result of the career development workshop and it did. Previous studies support the result concerning a decrease of career indecision when students are provided with activities that extend their awareness of occupations (Poole & Cooney, 1985). However, most studies attempted to determine what

kinds of indecision subjects seemed to portray. Fuqua and Hartman (1983), for example, describe individuals having career indecision as three types: developmental, acute, and chronic. The scope of this study was to determine whether there was a change in indecision and was not to measure the level, amount, or type of indecision subjects had. Holland and Holland (1977) suggested several practical applications for students who are decided or undecided about vocational goals. "It is probably a mistake to treat all individual students as if they have an indecisive disposition Some undecided students do not want or need assistance. They will come up with their decision when realities demand it" (p.413). The career development workshop did significantly decrease the career indecision of students in the treatment group.

The career self efficacy of students in the treatment group was expected to increase as a result of the career development workshop. Although most previous research has been conducted with college students (Betz & Hackett, 1981; Hackett & Betz, 1983; Lent, Brown & Larkin, 1984,1986,1987), their conclusions supported the result expected concerning an increase in self efficacy. Lauver and Jones (1991) supported the expected result of increasing self efficacy through using this model in determining gender and ethnic differences when those individuals consider career options.

It was surprising and somewhat unexpected that the career self efficacy of subjects did not reach the .01 level of significance. One possible explanation was an observation made by the teachers who proctored the pre and post testing situation. Students were overheard making comments such as: "There's nothing on this list I want to be," or " I want to be a _____and it's not here." One subject responded, "I only want to do ranching, ranching, ranching"

and circled "no" for all the choices.

Proctors wanted to direct students towards correctly assessing their confidence in regards to completing the educational requirements for and performing the job duties of occupations, not their fondness for the 20 occupations listed. Their awareness that giving assistance to the students in understanding the test's intent would nullify the assessment results kept them from interaction, but they were frustrated by what they perceived as direction confusion.

This observation shared in the post test discussion with proctors led the researcher to hypothesize that perhaps the results of the OSES were more a reflection of like or dislike of the career rather than the individual's career self efficacy confidence. Perhaps the use of career self efficacy in general and the use of the OSES in particular is not as effective as it was in the increase in career self efficacy found in the subjects in the study by Lauver and Jones (1991).

An expected result of this study was that Hispanics would show a significant increase in the vocational identity, decrease in career indecision, and increase in career self efficacy if they participated in the career development workshop. A survey of research indicates a limit of studies and findings for this group (Arbona, 1990). Research supported the expectations of this project that Hispanics' view of the career world is similar to the view held by the majority population (Cook, 1991), and that intervention would increase identity and aspirations of this group (Bowman, 1993). The reader is cautioned to note that the cell groups for Hispanics in the treatment group (n=20) and the cell group for Hispanics in the control group (n=10) may have been too small to make any valid conclusions. Arbona (1990) found in her review of studies that

"it is possible that the difference in educational and occupational attainment between Hispanics and Anglos may be more a function of level of acculturation and/or socioeconomic background than just ethnicity. . . . It is important that investigators take into account the heterogeneity among Hispanics in studying the vocational behavior of this population" (p.315). If one agrees with this premise, the Hispanics in the treatment group contributed 27% of the scores of the 87 treatment subjects, and the group did significantly increase in the area of vocational identity and decrease their career indecision. There was not, however, a significant difference in the two Hispanic populations in the study.

It was expected that girls and boys and students of high, middle, and low academic abilities who participated in the career development workshop would increase their vocational identity, decrease their career indecision, and increase their career self efficacy significantly over those girls and boys and students of high, middle, and low academic abilities who did not participate in treatment.

Vocational identity, as measured by the MVS (V.I.) scale did increase significantly for girls and boys in the treatment group and also for high, middle and low academic abilities. The career indecision, as measured by the CDS (C.I.) scale did decrease for girls and students of high, middle and low academic abilities in the treatment group. Career self efficacy did not significantly change for girls and boys, or for high, middle, and low academic abilities.

There were some limitations to this study. First, the subjects chosen were from two rural high schools and were available as intact groups. Generalizability to other demographic areas is limited. Second, the primary independent variable was the treatment workshop. Workshops using other

instruments and intervention tools over a time period other than six weeks, may result in different findings. Last, since the focus was primarily the treatment workshop, rigor of the academic programs at the two schools in determining students' grade point averages, was not within the scope of this study.

The career development workshop appeared to be a positive experience for the students in the treatment group at Battle Mountain High School. Students experienced a significant increase in their vocational identity and a significant decrease in their career indecision, although not an increase in their career self efficacy. They seemed to enjoy completing the Career Decision Making System-Revised assessment and found watching the video CDMS:Tour of Your Tomorrow a more detailed description of what their field of interest entailed. They wrote reaction sheets to their shadowing experience with community mentors and were extremely enthusiastic about this being a valuable way to determine if this career field was indeed one they were interested in. This was supported by McKenna and Ferraro (1991) who studied how students choose their careers and attitudes towards nontraditional career options. Of six possible methods to obtain information, students chose "watch/talk to workers" as their top choice. Most importantly, perhaps, is that all 10th graders involved in the career development workshop became engaged in a productive process of career exploration. This workshop supported the idea that career counseling is most effective when part of an ongoing process where continual investigation, exploration, and discussion of career options is encouraged throughout the year. Some questions remain concerning the effectiveness of career self efficacy as an assessment tool for high school students, and continued research is encouraged.

Research recommendations

The following are recommendations for future research. They are based on the limitations of this study and the questions posed by this research. These recommendations serve only as a guide for future studies on the use of career development interventions and their use in career counseling at the high school level as a valid activity to measure vocational behaviors.

1. Continued study is needed on the appropriateness of the career self efficacy theory with high school students and the adaptations that may be included for meeting the developmental needs of this age group.

2. Replicating this study with a larger Hispanic population using appropriate assessment tools and videos that include Hispanic role models is needed to determine career constructs with this special population.

3. Continued research is needed on the types of subjects who would most benefit from a career intervention workshop using subjects with different demographic characteristics than those in this study.

4. Future studies should investigate the use of a career intervention workshop that utilizes more than one computer aided guidance programs and computerized scoring and printouts of assessment tools used in this study, to determine the effectiveness of combinations of computerized strategies. This would be especially helpful in large populations where hand scoring would impact efficiency.

5. Continued study is needed on the use of career development workshops that measure career development constructs. This study should be replicated using other standardized assessments and valid techniques.

6. Replicate this study with a longer wait time between the treatment workshop and the post test assessment to determine if there are long lasting effects of the workshop.

General Implications

Survival in a global economy; keeping pace with the technology explosion; and greater expectations from society, parents, and students have placed an increased demand on counselors to provide new and effective career counseling services. Counseling programs are required to provide assistance to a rapidly growing group of diversified students who come with a wide array of developmental needs. To continue to expect that students wanting help will knock on the counselor's door is naive and exclusionary. Career intervention workshops that include (a) sound career development theory, (b) standardized assessments, (c) opportunity for students to explore careers, and (d) opportunity for understanding self, are a promising source of meeting counseling demands. It is a challenge for high school counselors to provide the information necessary to help adolescents acquire and use the knowledge and skills needed to make their work lives satisfactory and productive. Hispanics are the the fastest growing minority group in this country. Schools with this population need to gain insight and sensitivity to cultural, attitudinal, and educational needs of this group to provide appropriate assessment and

intervention in helping them become aware of career options. Counselors have the additional burden of doing more with less.

Providing effective services to large groups of students while attending to individual differences may be best achieved by the intervention workshop techniques used in this project. Experimentation utilizing these techniques with different populations, or different techniques with a similar population is strongly encouraged. Investigating characteristics of effective systems can provide further insight and give counselors the ability to improve their services. Having those services backed by sound research validation and methodologically effective techniques will enhance the success of counselors meeting the demands of the public, school, parents, and students.

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Appendixes

Appendix A
Colorado State University Human Research Project Form
and Project Approval Memorandum

THIS FORM MUST BE TYPEWRITTEN

COLORADO STATE UNIVERSITY
Human Research Project Form

1. PROJECT TITLE: *A Career Workshop's Effect on the Self-Efficacy, Career Indecision and Vocational Identity of 10th Graders*

2. PRINCIPAL INVESTIGATOR: *Dr. Joseph Daly, Advisor*

DEPARTMENT: *School of Education*

PHONE: 970-491-6826

Principal Investigator (PI) must be a faculty member at Colorado State University even if the project is to be completed by a student or faculty affiliate or if the project is to be administered off-campus.

3. CO-INVESTIGATOR: *Judith A. Caligiuri, PhD. candidate*

DEPARTMENT: *School of Education*

PHONE: 970-949-7118

The Co-investigator (co-PI), if there is one, may be a student, other faculty, or faculty affiliate. Physicians and other professionals associated with the project may be listed as Co-PI's. If off-campus expertise is utilized, identify that person's qualifications.

4. FUNDING AGENCY: *n/a*

DEADLINE: *n/a*

If this project is the subject of a grant proposal, the agency and the deadline for submission to the funding agency must be listed.

5. PROJECT START DATE: *January 22, 1996* PROJECT END DATE: *March 15, 1996*

Self-explanatory. No contact may be made with subjects until final approval is received from the Human Research Committee.

6. OBJECTIVES OF PROPOSED RESEARCH: Provide a description of the objectives of the proposed research. This information is used in assessing the risk/benefit ratio for subjects. The purposes may be listed as the hypotheses to be tested.

1. *The vocational identity and career self-efficacy of 10th grade students who go through the career development workshop will increase significantly more than those students who do not.*

2. *The career indecision of 10th grade students who go through the career development workshop will decrease significantly more than those students who do not.*

3. *The vocational identity and career self-efficacy of 10th grade Hispanic students who go through the career development workshop will increase significantly more than those Hispanic students who do not.*

4. *The career indecision of 10th grade Hispanic students who go through the career development workshop will decrease significantly more than those Hispanic students who do not.*

5. *The vocational identity and career self efficacy of 10th grade students of high, middle and low academic abilities who go through the career development workshop will increase significantly more than those students of high, middle and low academic abilities who do not.*

6. *The career indecision of 10th grade students of high, middle and low academic abilities who go through the career development workshop will decrease significantly more than those students of high, middle and low academic abilities who do not.*

7. *The vocational identity and career self efficacy of boys and girls who go through the career development workshop will increase significantly more than those boys and girls who do not.*

8. *The career indecision of boys and girls who go through the career development workshop will decrease significantly more than those boys and girls who do not.*

7. **DESCRIPTION OF HUMAN SUBJECTS;** The number, age range and gender of the subjects must be identified. Indicate whether the subjects are employees or students of Colorado State University. Describe any special characteristics of the subjects, such as disease conditions, congenital dysfunction, behavioral abnormalities and so forth. The method by which subjects are to be solicited must be indicated. Letters of agreement and/or approval from an Institutional Review Board must be submitted from groups or agencies where subjects are being sought. These approvals should be included as an appendix to the project to speed consideration. If subjects are to be contacted initially by mail, newspaper advertisement, or posting flyers, the letter of introduction to the study, newspaper advertisement and/or flyer should be attached as an appendix.

School staff will screen transcripts of the 10th graders at Battle Mountain High School and Roaring Fork High School to identify high (3.0-4.0 G.P.A.), middle (2.0-3.0 G.P.A.) and low (less than 2.0 G.P.A.) academic achievement and to define ethnicity. It is expected that no more than 200 students will be identified as 10th graders for this study. Students at Battle Mountain High School will form the treatment group and students at Roaring Fork High School will form the control group.

The students will be contacted by the counseling offices at both high schools and invited to participate in the study. They will be given a letter (Appendices A and B) and consent form (Appendices C and D) that explain the study and their participation in detail. They will read and return the consent form signed by the students and their parents to their counselors. This process will be repeated until the desired number of student participants is reached.

At the time of treatment intervention (the career development

workshop) the subjects will be 10th grade students (ages 14-16). It is expected they will be from different ethnic backgrounds, gender and academic abilities as well as other characteristics.

The letters of approval from each high school is attached. Appendix E.

8. DESCRIBE THE RESEARCH INCLUDING PROCEDURES TO BE FOLLOWED WITH SUBJECTS: Attach a description of the research and procedures. Identify variables to be measured within the scope of the study, including the technique(s) used to measure those variables. Delineate actual tests on humans including type and frequency of tests. Specify any equipment such as hyperbaric chamber, EEG, etc. If a questionnaire is to be used, include a copy and describe the qualifications of those people who will administer it. In studies where sensitive topics are addressed which may cause the subject psychological distress, indicate provisions for the resolution of that distress in the form of counseling, who the counselors are, and their qualifications. A letter of agreement to serve as a counselor for the study should be attached to the proposal. Studies involving stress, either physical or psychological, should indicate the protocol to be used and factors leading to the cessation of testing. If biological samples are to be taken, give details of the methodology and the qualifications of those taking samples. Indicate the process for debriefing subjects, who will debrief and his/her qualifications.

Please refer to the attached description of the research and procedures (Appendix F). The variables to be measured are the constructs of "career self efficacy", "career indecision" and "vocational identity". The standardized instrument Occupational Self-Efficacy Scale (Appendix G) self-efficacy scale, will be used pre- and post-test treatment to measure the effects of a career development workshop on students' career self-efficacy. The standardized instrument Career Decision Scale (Appendix H), career indecision scale, will be used pre- and post-test treatment to measure the effects of a career development workshop on students' career indecision. My Vocational Situation (Appendix I), vocational identity scale, will be used pre- and post-test treatment to measure the effects of a career development workshop on students' vocational identity. These three instruments are easy to complete and will be administered in a group setting one class period two weeks before and two weeks after the career development workshop treatment.

The co-investigator will meet with classroom teachers to outline the pre/post test procedures. Staff will only be expected to be on hand to help with the procedure of disseminating protocols, not to administer or interpret assessments.

The treatment used will be a career development workshop and includes a variety of activities that utilize Bandura's theory of learning and modifying information. Students will complete the Harrington O'Shea Career Decision Making System-Revised, which will provide them with information about their career choice, based on their abilities, values and interests. This will give them scale scores in 18 different job clusters. Students will confer with their teacher regarding results of the interest survey. Students will watch the Career Decision Making System: Tour of Your Tomorrow video series in the areas of their interest to see others performing tasks they might pursue. They will participate in a "Shadow Day" to work alongside a mentor already involved in a career the student is interested in. They will learn to use College

View and Discover --two computer aided guidance systems.

The workshop will take place over the span of two weeks with ten, 50 - minute classes planned during the students' regularly scheduled English class. Students will miss one full school day to participate in the shadowing mentorship experience.

The co-investigator will administer, score and interpret the instruments utilized. The co-investigator is a guidance counselor with 16 years experience working with adolescent populations. She holds a Bachelors Degree in Special Education, a Masters in Learning Disabilities, and an endorsement in Guidance and Counseling high school students. She has had relevant course work in tests and measurements and is experienced in administering career assessment instruments.

It is believed that physical or psychological stress is not of concern as a result of participating in this study.

9. Will blood or other biological samples be taken? Yes_____ No X_____
 If yes, the Institutional Biosafety Committee must approve the procedures. To apply for approval, file the application for Recombinant DNA and/or Infectious Microorganism (Plant or Animal) Projects. This application may be obtained from the administrator of the Human Research Committee and submitted with your Human Research Project Form.

10. DESCRIBE AND ASSESS ANY POTENTIAL RISKS: Risks to the subject in the form of physical injury, psychological trauma, or of a social or legal nature should be addressed. If methods of research create potential risks, describe other methods, if any, that were considered and why they will not be used. While not all risks can be accounted for, it is the responsibility of the PI to identify such risks as may be presented by participating in this study. Methods of handling risks should be identified. It is important that full disclosure of risks be presented for an adequate review of the study. If the committee determines that significant risks exist which are not addressed, further consideration will be delayed until addressed by PI. If there appear to be no risks, insert the statement "No known risks." The attached Procedure/Risk List (Attachment 1) illustrates the risks for some research routinely conducted. The risks listed in this section must be stated in the consent form.

The risks to the subjects in this study are almost non existent. One possible risk is that students participating in the career development workshop will miss one day of school to participate in the shadow work experience. This may place an additional burden on those students who experience difficulty completing assignments and comprehending concepts discussed while they are absent.

Students will not be penalized for participating in the shadow experience and will be given the opportunity to make up missed work, as is customary for any school related excused absence.

All attempts are being made to conduct the workshop treatment during the students' regularly scheduled English class so as to not disrupt their day. All instructors will be notified prior to the shadowing experience about the

students' absence that day so they can plan alternate activities for non participating students in their classes who are juniors or seniors.

11. ASSESS THE POTENTIAL BENEFITS TO BE GAINED: Benefits to be derived by the subject from participating in the proposed study should be listed. Also indicate how the information obtained from this study will benefit society-at-large. Use additional paper if necessary.

The benefits assumed for participating students include assessment of their career self-efficacy, career indecision and vocational identity; the opportunity to spend a day with someone working in a job cluster students are interested in; the use of computer guidance programs; assistance with their exploration and development of career plans, and an increased awareness of the relationship between school and work transition.

The high schools will benefit from this study in several ways. Data will be available on the effectiveness of an organized career development workshop on the career self-efficacy, career indecision and vocation identity of 10th grade students. The resulting data will contribute to an objectively based assessment of whether the schools want to purchase the tests used in this study to enhance their career centers. The treatment intervention will provide concrete career development activities for all 10th grade students and support other career and guidance services offered at both schools. The study will serve as a model and set a precedent for future studies.

Information from this study will benefit society-at-large by providing data concerning the effectiveness of a career development workshop with 10th grade students of diverse ethnic backgrounds and differing academic abilities. The study will be shared through professional journals and/or publications; a dissertation and various presentations to counselors wishing to incorporate guidance interventions in the classroom. In this time of increased accountability using shrinking financial resources, identifying interventions that are cost effective, easy to use and yet yield positive, significant results is critical and a valuable contribution to career education.

12. DESCRIBE CONSENT PROCEDURES TO BE FOLLOWED, INCLUDING HOW AND WHEN INFORMED CONSENT WILL BE OBTAINED. Before being included in the study, each subject must be informed of the procedures to be followed, the risks associated with participating in the study, and the benefits to be expected. The manner in which these details are explained to potential subjects must be specified. See Attachment 2 for basic elements of informed consent.

School staff will screen and identify 10th grade students' Grade Point Average for high, middle and low academic achievement and for ethnicity of individual participants. It is expected that not over 200 students will be identified. Students at Battle Mountain High School will be assigned to the treatment group ($n < 100$) and students at Roaring Fork High School will be assigned to the control group ($n < 100$).

These students will be contacted by the counselors at the two participating schools and invited to participate in the study. They will be

given a letter (Appendices A and B) and a consent form (Appendices C and D). They will be asked to read and sign the consent form, take it home, have their parents read and sign it and return it to the counselors in their individual buildings.

At the time of the intervention, students will be in the 10th grade, ages 14-16. It is expected that students are of diverse ethnicity, both genders, varying academic abilities, as well as other representative characteristics.

When a consent form is needed (See Attachment 3 for example) it must be submitted before the project will be considered. You may use any appropriate format for this form, including a letter, as long as the information delineated in the attached sample is included. The form you submit should be a copy of the actual one you intend to use. IT MUST BE WRITTEN IN SUCH A WAY THAT THE PROSPECTIVE SUBJECTS (OR THEIR GUARDIANS) CAN UNDERSTAND IT. If subjects will receive remuneration for participation or will be videotaped or audiotaped, that information must be disclosed. Disposition of the tapes at the end of the study must be divulged. A signed copy of the consent form must be given to the subject for his/her records and the PI must retain a copy in his/her files for a period of three years after completion of the study. If only an innocuous, anonymous, voluntary questionnaire is to be completed, then a consent form is not necessary since return of the questionnaire implies consent. In this case, a letter which encompasses all the information on the sample consent form must be sent or given to the subject. However, it is NOT necessary to include the sections on the financial obligation, the second paragraph under Participation or a signature block for subjects.

13. DESCRIBE THE CONFIDENTIALITY SAFEGUARDS: Methods to protect the confidentiality of subjects must be indicated. Reports generated from the research are not allowed to reveal the identity of individuals or the specific data from a given person.

Three instruments will be used pre- and post-treatment to assess the effectiveness(if any) of a career development workshop. The Occupational Self Efficacy Scale, career self-efficacy scale, will be used to measure students' career self-efficacy. The Career Decision Scale, career indecision scale, will be used to measure career indecision. The My Vocational Situation, vocational identity scale will be used to measure students' vocational identity. Additionally, the Harrington O'Shea Career Decision Making System-Revised and accompanying Tour of Your Tomorrow video series will be used in the treatment group workshop.

A coding scheme has been designed to match pre/post test documents using an alphabetical numbering system. Students will receive a number to put on each test instrument and the number will be used only to compare scores pre- and post-treatment. Students will not be identified on any reports nor results of individual students shared with anyone without the written consent of that individual student.

The Harrington O'Shea Career Decision Making System-Revised protocol that each treatment group student fills out will not be collected by the investigator, but will be given to the students to keep.

14. **LOCATION OF RESEARCH PROJECT:** If the data will be collected on the Colorado State University campus, identify the building where the activity will occur. If the information is to be gathered elsewhere, describe those locations. If an agency office or other specific office is to be used, a letter of agreement to participate must be included which demonstrates that the person responsible for the location is familiar with the protocols to be used and is in agreement with the purpose(s) of the study.

Data will be collected in two locations. The Occupational Self-Efficacy Scale, Career Decision Scale and My Vocational Situation pre- and post-treatment administration will occur at Battle Mountain High School, Minturn, Colorado and Roaring Fork High School, Carbondale, Colorado. The Harrington Q'Shea Career Decision Making System-Revised will be administered at Battle Mountain High School. The letters of approval from both schools represent agreement to conduct the study at those locations.

I certify that the preceding information is an accurate description of the research to be conducted using human subjects.

Principal Investigator

Date

I understand that my signature certifies that I have read and approve of this research.

Department Head

Date

MEMORANDUM

TO: Joseph Daly
School of Education

FROM: Celia S. Walker, Administrator *Celia S. Walker*
Human Research Committee

SUBJECT: PROJECT APPROVAL
 Title: A Career Workshop's Effect on the Self-Efficacy, Career Indecision and Vocational Identity of 10th Graders
 Protocol No.: 96-005H
 Funding Agency: N/A
 Funding Agency Deadline: N/A

DATE: February 2, 1996

The above-referenced project was approved by the Human Research Committee on February 1, 1996 for the period February 1, 1996 to February 1, 1997 with the condition that the attached consent forms are signed by the subject and each subject is given a copy of the form. It is the investigator's responsibility to obtain these consent forms from all subjects. NO changes may be made to this document without first obtaining the approval of the Committee.

A status report of this project will be required within a 12-month period from the date of approval. The necessary form (H-101) will be mailed to you prior to that date.

It is the responsibility of the investigator to immediately inform the Committee of any serious complications, unexpected risks or injuries resulting from this research.

It is also the investigator's responsibility to notify the Committee of any changes in experimental design or consent procedures (file Form H-101).

Any questions about the Committee's action on this project should be directed to me.

Attachment

xc: J. Caligiuri w/attachment 

Appendix B

Permission to use information from

My Vocational Situation

Career Decision Scale

Occupational Self Efficacy Scale

from authors/publishers



Department of Psychology

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

97

Date 6/27/96

To:

Judith Caliguiri

From:

Nancy Betz (Phone 614-292-4166, Fax 614-292-4537)
E-Mail: NBETZ@MAGNUS.ACS.OHIO-STATE.EDU

Department of Psychology
The Ohio State University
137 Townshend Hall
1885 Neil Avenue Mall
Columbus, OH 43210-1222

Message:

I've received \$50.00
for rights to use
Occupational Self-
Efficacy Scale in
one study. You have
my permission to
reproduce the scale
as often as needed.

Sincerely,

Nancy Betz

NANCY E BETZ
DEPARTMENT OF PSYCHOLOGY
OHIO STATE UNIVERSITY
137 TOWNSHEND HALL
1885 NEIL AVENUE MALL
COLUMBUS, OHIO 43210-1222

NANCY E BETZ
DEPARTMENT OF PSYCHOLOGY
OHIO STATE UNIVERSITY
137 TOWNSHEND HALL
1885 NEIL AVENUE MALL
COLUMBUS, OHIO 43210-1222

January 12, 1996

Judy Caligiuri
Battle Mountain High School
750 Eagle Road
Milltown, CO 81645

Dear Ms. Caligiuri:

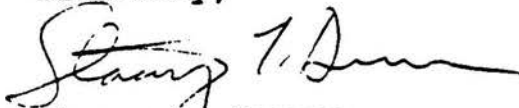
Thank you for your letter and order. This is in response to your request for permission to use the Career Decision Scale (CDS) and My Vocational Situation (MVS) in your research.

With the qualification form that you filled out, indicating your credentials and with the signature of your supervisor, we are able to rank you as a "B" level which allows you to purchase this test. We have no objection to your using the CDS in your research. However, we are not able to grant permission for the MVS as we distribute rather than publish this test. The publisher's name and address are as follows:

Consulting Psychologists Press
P.O. Box 10096
Palo Alto, CA 94303
(800) 624-1765

Please let me know if I may be of further assistance. Thank you.

Sincerely,



Stacey L. Dawson
Assistant Director of Customer Service



Permission Department

Dear Customer,

You recently requested permission to "use" one of our testing instruments. No permission is necessary if you wish to use the tool in your research exactly as it is printed. As permission is NEVER granted for photo-copying, you must be qualified, to purchase our materials.

The catalog I have enclosed for your examination contains Consulting Psychologists Press, Inc.'s Purchaser Qualification Form which details the requirements for the purchase of restricted materials. CPP requires a written copy of each customer's qualifications before selling any restricted test materials. For this reason, we believe that the responsibility for "use" belongs to the customer. In the case of a student the request should come jointly from the student, and the professor who supervises the research (and who cosigns the Purchaser Qualification Form). Please send your completed Purchaser Qualification Form, order, and prepayment to:

Consulting Psychologists Press, Inc.
Attn: Qualifications Department
3803 East Bayshore Road
Palo Alto, CA 94303-0979
Fax: (415) 969-8608

If you have purchased restricted material from us previously, you may call our Customer Service Department at (800) 624-1765 or (415) 969-8901 to place an order. Thank you for your interest in our materials!

Permissions Editor

Appendix C

Permission to proceed with the study from Battle Mountain High School

101

Battle Mountain High School

P.O. Box 249 / 750 Eagle Road Minturn, Colorado 81645 (970) 949-4490 Fax: (970) 949-1550

Dr. Erik S. Fredell - Principal
Ms. Ronda S. Woodall - Assistant Principal
Mr. Michael King - Athletic Director

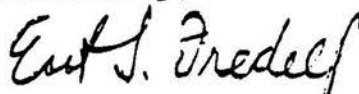
Mr. Gerald Schmidt
Ms. Judy Caligiuri
Guidance Counselors

December 1995

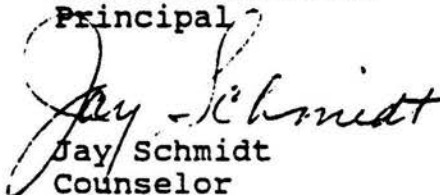
Dear Ms. Judy Caligiuri,

We have read a copy of your dissertation proposal and plans for conducting research with students in our school. This correspondence serves as a letter of approval to conduct your research, as presented in the consent form, this school year, from January 1996 through March, 1996. Please let us know the specific date you plan to inservice teachers and initiate your project.

Sincerely,



Dr. Erik Fredell
Principal



Jay Schmidt
Counselor

Appendix D

Permission to proceed with the study from Roaring Fork High School

ROARING FORK HIGH SCHOOL

**100 SNOWMASS DRIVE
CARBONDALE, COLORADO 81623
(970) 883-3840**

December 4, 1995

To: Judith Colliguri,

We, at Roaring Fork High School, agree to participate as the control group for the Caitlin study. We agree to using our sophmores in the pre and post testing. We agree that after the testing is over and data is collected we will be given the prescription to use with our students.

Sincerely,



Diane Corbett
Counselor



Jerry Schott
Principal

Appendix E

Letter to students and parents at Battle Mountain High School

January 1996

Battle Mountain Sophomore and Parents:

You are invited to participate in a special career development research project conducted by Battle Mountain High School and Colorado State University. Only sophomores are being invited to participate. You will have a unique opportunity to participate in a career development workshop for two weeks to explore your career interests and plans.

The details of the research project are outlined in the consent form attached to this letter. I realize it's a lengthy form but it's required by school policy to include all of these statements!

I am interested in evaluating whether a career development workshop using a variety of different activities is an effective tool in helping students with career plans. The results will be used to identify a potentially effective method of intervention in career planning and for my doctoral research through Colorado State University. You get the benefits of participating in this program and investigating your career interests, plans and possibilities. This program is approved by Battle Mountain High School and Colorado State University.

Your participation in this workshop is completely voluntary. All of the results are confidential and independent of your grades and other school records. You are simply being offered an opportunity to participate in a fun workshop for two weeks during your regularly scheduled English class, where you will take a close look at yourself, and your career interests. At the same time, you will be helping me with an important study.

Please take a few minutes to read the Consent Form. Then take it home to your parents/guardians, and ask them to read the form as well. If you choose to participate in this research project, you and your parent/guardian need to sign and return this form. If you or your parent/guardian have questions, please ask me. I look forward to working with you.

Sincerely,

Ms. Judith Caligiuri
CSU doctoral candidate

Appendix F

Letter to parents and students at Roaring Fork High School

January 1996

Roaring Fork Sophomore and Parents:

You are invited to participate in a special career assessment research project conducted by Roaring Fork High School and Colorado State University. Only sophomores are being invited to participate. You will have a unique opportunity to explore your career interests and plans!

The details of this research project are explained in the attached consent form. I realize it's a pretty lengthy form but it's required by school policy to include all of the statements in the form!

As a high school counselor, I am interested in evaluating the impact of your career interests, and plans and find out what needs you have for career assistance. The results will be used to identify a potentially effective guidance tool for students and for my doctoral research through Colorado State University. You get the benefits from getting knowledge about your career interests, plans and possibilities! This project is approved by Roaring Fork High School and Colorado State University. It has the support of your principal, Mr. Schott and Ms. Corbett, your counselor.

Your participation is completely voluntary. All of the results are confidential and independent of your grades or other school records. You are simply being offered an opportunity to take a close look at yourself and your career interests, and career plans. At the same time, you will be helping me with an important study.

Please take a few minutes to read the accompanying form. Ms. Corbett, your counselor, will explain the project to you if you have questions. Please ask your parent/guardian to read the form as well. If you choose to participate in this research project, please sign the form, have your parent/guardian sign it as, and return it to the counseling office. If you have any further questions, please call me. I look forward to working with you.

Sincerely,

Ms. Judith Caligiuri

CSU doctoral candidate

Appendix G

Consent form to participate in research project for Battle Mountain High School

**COLORADO STATE UNIVERSITY
INFORMED CONSENT TO PARTICIPATE IN A RESEARCH PROJECT
FORM**

This form is required by CSU to conduct studies involving students. It follows a required format and contains required information about the project. You and your parent/guardian need to read it and initial or sign where indicated. Please return your signed form to the counseling office at Battle Mountain High School. A copy of your form will be given to you for your records.

TITLE OF PROJECT: The Effects of a Career Development Workshop with 10th grade students

PRINCIPAL INVESTIGATOR: Dr. Joseph Daly, School of Education, Colorado State University

CO-INVESTIGATOR: Judith Caligiuri, doctoral candidate, Colorado State University

CONTACT FOR QUESTIONS OR PROBLEMS: Judith Caligiuri, Eagle County School District, Box 249 Minturn, Colorado 81645 (970)-949-4490

PURPOSE OF RESEARCH: This research is designed to evaluate the effect of a career workshop on career self-efficacy, career indecision and vocational identity of 10th grade students. Your participation will span two weeks and require approximately 10 hours of your time, plus one day out of school to participate in a shadowing work experience.

PROCEDURES/METHODS TO BE USED: You will participate in this workshop in your English class. An orientation meeting will take place for one class period. Two weeks later, you will participate in activities including completing a career interest survey, viewing videos, using Discover, a computer-aided guidance program and setting up your shadowing experience. This will take place during English over the next two weeks. You will be then be excused from school to shadow a career mentor for one full day. A final meeting will be held during one class period two weeks after the workshop is over. Definite instructions as to times, dates, and particulars about the shadowing day will be provided to you once you have signed and returned the
Page 1 of 3 Student Initials_____ Parents Initials_____ Date_____

form. Total time commitment will be ten, 50 minute class periods, plus one full day out of school.

During the orientation meeting you will be asked to fill out three brief surveys, (about 10 minutes each) concerning your career plans and needs. During the workshop, you will fill out the Harrington O'Shea Career Decision Making System-Revised and from that choose an area of interest to learn more about . It's a fun survey and you will gain some knowledge about your strengths and interests. Other activities already outlined above, will also be part of the workshop. At the final meeting , we will take the same three career surveys that you took at the orientation meeting. This is also a good time to ask questions about what next steps to take or to ask about other career resources and services that are available to you in the counseling center.

Participation in all ten, 50 minute research related meetings, completing the activities in the workshop and a sincere effort on your part is essential. There are no scheduled times for "make-up" meetings. Please agree to participate in this research if you are willing to commit to completing the objectives and activities involved in the research.

RISKS INHERENT IN THE PROCEDURES: No known risks.

BENEFITS: The results of the three surveys, plus the workshop activities will help you learn about career interests and aptitudes you have and provide you with information to help you in pursuing career plans. Counselors at your school will give you further resources and tell you of services available to continue your career planning

CONFIDENTIALITY: The results of the surveys are completely confidential. A coding scheme has been designed to match the pre/post test scores. I will use the results in the evaluation, but at no time will a student be identified by name. None of the results will have an impact on your grades and will not be included in your school records.

LIMITATION OF LIABILITY: (REQUIRED STATEMENT) Because Colorado State University is a publicly-funded, state institution, it may have only limited legal responsibility for injuries incurred as a result of participation in this study under a Colorado law known as the Colorado Governmental Immunity Act (Colorado Revised Statutes, Section 24-10-101, et. seq.). In addition, under Colorado law, you must file any claim against the University within 180 days after the date of the injury. In light of these laws, you are encouraged to evaluate your own health and disability insurance to determine whether you are covered for any injuries you might sustain by participating in this research,

Page 2 of 3 Students initials _____ Parents Initials _____ Date _____

since it may be necessary for you to rely on your individual coverage for any such injuries. Questions about subjects' rights may be directed to Celia S. Walker at (970)-491-1563.

PARTICIPATION: I understand that my participation in this research project is voluntary. If I participate, I understand that I may withdraw from participating at any time without penalty or loss of benefits to which I am otherwise entitled.

I have read and understand the information stated and willingly sign this consent form. My signature also acknowledges that I have received , on the date signed, a copy of this document in its entirety (3 pages).

Student. Please print your name

Student Signature

Date

**Parent's Signature for minor Students
(this is required if student is participating)**

I authorize _____(print student's name) to become a subject for the described research. The purpose of the study has been explained to me in the consent form and I am satisfied that proper precautions will be observed.

Student's date of birth

Parent/Guardian (please print your name)

Parent/Guardian Signature

Date

Page 3 of 3 Students initials_____Parents Initials_____Date_____

Appendix H

Consent form to participate in research project from Roaring Fork High School

**COLORADO STATE UNIVERSITY
INFORMED CONSENT TO PARTICIPATE IN A RESEARCH PROJECT
FORM**

This form is required by CSU to conduct studies involving students. It follows a required format and contains required information about the project. You and your parent/guardian need to read it and initial or sign where indicated. Please return your signed form to the counseling office at Roaring Fork High School. A copy of your form will be given to you for your records.

TITLE OF PROJECT: The Effects of a Career Development Workshop with 10th grade students

PRINCIPAL INVESTIGATOR: Dr. Joseph Daly, School of Education, Colorado State University

CO-INVESTIGATOR: Judith Caligiuri, doctoral candidate, Colorado State University

CONTACT FOR QUESTIONS OR PROBLEMS: Judith Caligiuri, Eagle County School District, Box 249 Minturn, Colorado 81645 (970)-949-4490.

PURPOSE OF RESEARCH: This research is designed to evaluate the effect of a career workshop on career self-efficacy, career indecision and vocational identity of 10th grade students.

PROCEDURES/METHODS TO BE USED: During the forty five minute orientation meeting and a final meeting six weeks later, you will be asked to fill out three brief surveys, (about 10 minutes each) concerning your career plans and needs. These are fun surveys and you will gain some knowledge about your strengths and interests. The final meeting will also be a good time to ask questions about what next steps to take or to ask about other career resources and services that are available to you in the counseling center. Total time commitment will be 90 minutes.

Page 1 of 3 Students Initials _____ Parent Initials _____ Date _____

Participation in each of the two, 45-minute, research related meetings, completing the activities and a sincere effort on your part is essential. There are no scheduled times for "make-up" meetings. Please agree to participate in this research if you are willing to commit to completing the objectives and activities involved in the research.

RISKS INHERENT IN THE PROCEDURES: No known risks.

BENEFITS: The results of the three surveys will help you learn about career interests and aptitudes you have and provide you with information to help you in pursuing career plans. Counselors at your school will give you further resources and tell you of services available to continue your career planning.

CONFIDENTIALITY: The results of the surveys are completely confidential. A coding will be used to match pre/post test scores. I will use the results in the evaluation, but at no time will a student be identified by name. None of the results will have an impact on your grades and will not be included in your school records.

LIMITATION OF LIABILITY: (REQUIRED STATEMENT) Because Colorado State University is a publicly-funded, state institution, it may have only limited legal responsibility for injuries incurred as a result of participation in this study under a Colorado law known as the Colorado Governmental Immunity Act (Colorado Revised Statutes, Section 24-10-101, et. seq.). In addition, under Colorado law, you must file any claim against the University within 180 days after the date of the injury. In light of these laws, you are encouraged to evaluate your own health and disability insurance to determine whether you are covered for any injuries you might sustain by participating in this research, since it may be necessary for you to rely on your individual coverage for any such injuries. Questions about subjects' rights may be directed to Celia S. Walker at (970) 491-1563.

PARTICIPATION: I understand that my participation in this research project is voluntary. If I participate, I understand that I may withdraw from participating at any time without penalty or loss of benefits to which I am otherwise entitled.

I have read and understand the information stated and willingly sign this consent form. My signature also acknowledges that I have received , on the date signed, a copy of this document in its entirety (3 pages).

Student. Please print your name

Student Signature

Date

**Parent's Signature for minor Students
(this is required if student is participating)**

I authorize _____(print student's name) to become a subject for the described research. The purpose of the study has been explained to me in the consent form and I am satisfied that proper precautions will be observed.

Student's date of birth

Parent/Guardian (please print your name)

Parent/Guardian Signature

Date

