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# Career Decision Self-Efficacy of Pre-Service Teachers

Lori Miller

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# **CAREER DECISION SELF-EFFICACY IN PRE-SERVICE TEACHERS**

By

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B.S., Corporate Training, Idaho State University, 1999  
M.S., Human Resource Training and Development, Idaho State University, 2000  
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DISSERTATION

Submitted in Partial Fulfillment of the  
Requirements for the Degree of

**Doctor of Philosophy  
Educational Psychology**

The University of New Mexico  
Albuquerque, New Mexico

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## Dedication

You know that you are lucky when you can talk about the person who has inspired you the most. Of all the wonderful people in my life, there is one person that has always been there for me...no matter what. The greatest gift that I have ever received is my dad, **Emil H. Mayer**. This dissertation would not be complete without dedicating it to him. Without his love and support, I would not be where I am at today. He is the most genuine, honest, and wonderful example of what a person should be. He instilled in me impeccable work ethic, and to always strive to do the right thing regardless of the rewards or consequences.

My dad has stood strong by side through my incredibly crazy and challenging life. Through the constant chaos of abusive people, mistakes, countless illnesses and breakdowns, there he is, my knight in shining armor. When I had cancer, my dad took care of me. He was there within a drop of a hat whenever I needed him. There is not a more dedicated and loyal father or friend. He is my best friend. My commandant in politics, football, gardening, and religion, but the best times was our hunting trips, long talks, and selling night crawlers from our home.

My greatest strength is my perseverance, but this is true only because I know that someone unconditionally loves me and is there for me. When times are hard, I think of my dad, and I know that I can conquer any obstacle. When times are good, I can count on sharing the joy with him. How lucky can a person be to have such an excellent role model, first-rate friend, and above all a wonderful dad? I know because I have been blessed. I love you dad!

## Acknowledgements

A dissertation is the final step of a PhD. It is to prove that you can individually implement all that you have learned in a research endeavor. However, this dissertation has not been an individual venture.

I would like to first thank my husband Rey Saiz for putting up my countless hours in the pursuit of my goals as well as the enormous stacks of books, journal articles, and papers throughout our living space. He has been supportive and understanding. Next, I would like to thank my son, Ty Miller, for his support as I have been in school most of his life. He is brilliant, and I am so proud of him. My daughter, Heather Pickard, is a go getter and self-starter. I am proud and grateful for her support. She has added to our family my beautiful granddaughter, Rhiannon and wonderful son-in-law Chris who I owe a special thanks for all that he has done for our family. To my family, I love you all more than I can possibly express.

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Without the “dream team” of committee members, this would not be possible. The DSG and I often talk about the wonderful committee that I work with. I am sincerely blessed to have this dissertation committee who has been encouraging and supportive (sorry Walt). Dr. Jay Parkes, Dr. Quincy Spurlin, and Dr. Deborah Rifenburg, I am so impressed with how well that you work together. I am thankful for the time and energy that you have invested in me. You are fantastic examples of stellar academic support. Dr. Terri Flowerday, you are more than an advisor and dissertation chair, you are a true friend. We have been together for years as I was your first advisee. I know that you have questioned whether or not I would get through this process. I could not have done this without your unwavering support, guidance, and friendship. Thank you for all that you have done for me.

The past three years have been a time of personal growth for me. These years of learning and personal development would not have been possible without a special person and the greatest boss ever, Anne Salzmann. I know that you were placed into my life to provide me with abundant wisdom. I am not sure that I could ever repay you for what you have given me in terms of personal and professional growth. To Phyllis Leavitt, even though I pay you to talk to me, you have become a friend and a mentor. Another mentor in my life is Dr. Betty Kelley. You are so kind and patient, and the best career counselor that I have ever known. To Shannon Burke, thank you for being a friend and a soul sister.

I wish to thank Lizzy, Opie, Layla, and Greta for your daily unconditional love. I miss you Lizzy. And above all I dedicate this dissertation to my dad, Emil H. Mayer. Thank you to all for EVERYTHING! I am truly blessed.

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## **ABSTRACT**

This study investigated the level of confidence that pre-service teachers have in regards to Career Decision Self-Efficacy. Career Decision Self-Efficacy is a person's belief and personal judgment of one's capability to perform career decision-making and career development tasks. The goal of this study was to discover the Career Decision Self-Efficacy needs of the pre-service teacher population in order to identify possible interventions. A demographic questionnaire and the Career Decision Self-Efficacy Scale (CDSE) consisting of Total Score, and five subscales: Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem Solving were used to assess 195 students in two junior level college classes that are required for a degree in Teacher Education. Descriptive statistics were used to describe the pre-service teachers. The data were analyzed using *t* tests and one-way ANOVAs.

In five demographics: gender, age, financial source of income, whether the participants have children or not, and GPA, statistical significance was determined between the Career Decision Self-Efficacy Scale scores and these demographics.

The results not only provided a descriptive picture of the participants, the outcome of this study provided information that can assist in possible interventions that can be implemented to better support pre-service teachers in their career endeavors.



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## **Chapter I**

### **Introduction**

In developing the skills that lead to a productive career, students need the confidence to pursue an occupational calling that organizes and relates to their educational preparation (Bandura, 1997). The career one chooses will help determine the shape and course that one's life will take. Hence, career choice will be one of the most important decisions an individual will make. Being able to navigate the world of career is also instrumental in solidifying one's direction. Knowing how to self-appraise, understand where to find occupation information, select appropriate goals, plan for the future, and problem solve obstacles along the way are key in obtaining a fulfilling career rather than settling or being content with a job one lands out of chance or desperation. Examining students' self-efficacy with regards to a career can determine the assistance they need to develop their career path. Derived from Bandura's self-efficacy theory and Crites's concept of career maturity, Career Decision Self-Efficacy measures an individual's Career Decision Self-Efficacy (Taylor and Betz, 1983). This study addresses Career Decision Self-Efficacy in pre-service teachers at a major southwestern university.

There are many reasons why someone would choose to be an educator. Plevin (1988) gives insight into some commendable reasons why someone may do so. Many indicate their number one priority is to assist others and make a positive significant difference in the lives of students. Further, they indicate that they enjoy being with students in an educational setting. Teachers want to increase students' cognitive ability as well as their own learning. The field of education offers the

opportunity to influence lives. Other reasons for choosing education may be due to the hours that teachers work. Someone may want a career that one can pursue while their children are in school. Working a Monday through Friday schedule and having summers off allows them to do so. Another reason for choosing education could be due to one's talent for building rapport with and teaching other people. Some may even want to increase their perceived esteem in the eyes of their family. For a first generation degree seeker, a teacher may be the only person he/she may know who has a degree, while another student may be following in their parent's footsteps as an educator.

For various independent reasons, pre-service teachers have already begun their own career decision-making and career development process by deciding on a field and investing in the knowledge, skills, and abilities required to begin their desired career focus. Super (1980) indicates that career can be defined as the lifetime of sequential roles played by a person during the course of a lifetime.

One's career is a major factor in the field of human development. Most adults spend a large percentage of their life at their jobs and their career becomes part of their identity. Career identity development starts in late adolescence as a serious pursuit. Ideally, individuals discover career identity by exploring what they love to do and what fulfills them. Vocational plans flow from deepening interests that evolve and emerge to have meaning and value. From this, individuals identify with an occupation that balances lifestyle formation, family influence and needs (Chickering & Reisser, 1993). Harkness (1976) believes a choice of vocation is extremely important because the vocational identity and the self become united into one single



identity. Even though the decision of a career is personal, there are factors that influence the outcome of the decision. Socioeconomic determinism, psychological determinism and events that shape one's life are factors in the career choice. Other types of circumstances such as heredity, traits, talents, and chance will also sculpt one's vocation (Brown, 2006).

Looking at career decision-making from a stage theory perspective, career development incorporates the full complexity of life decision-making that includes cognitive growth. Hoppock (1976) researched the importance of choosing a suitable career. He states that career exploration and planning must be taken seriously and with much conviction. One must consider that the choice of an occupation may determine whether one will be employed or unemployed, determine success or failure, whether one will enjoy or detest one's work, and that the choice of an occupation will influence almost every aspect of life. Vocational formation is a process of developing and learning. Increasing and improving knowledge of facts, skills, competence, engagement and social interactions, build vocational abilities and awareness that starts in childhood and lasts a lifetime (Brown & Lent, 2005). In developing the necessary skills and licensure to become a teacher, a pre-service teacher must decide on a teacher education program that will provide those skills.

Teacher education started over 150 years ago as the need to produce teachers became overwhelming. Normal Schools were developed to train teachers in the art and methods of teaching. As the supply and demand of students changed toward a more liberal arts rather than a narrowly focused school for a single occupation, Normal Schools were transformed into teacher colleges, bachelor

granting state colleges, and finally to state colleges (Labaree, 2008). Today, after one decides to become a teacher, teacher preparation at a college or university is typically sought.

Teacher preparation programs differ from state to state and institution to institution. The diverse preparation programs have generated controversy from many proponents, and more accountability in such programs has inspired many diverse and different contributions such as Bill and Melinda Gates and Teach for America (e.g., Crowe, 2011; Darling-Hammond et al., 2005). Bachelor's degrees of teacher education and teacher preparation programs focus preparation on several components.

Components needed for teacher preparation are knowledge of oneself as an individual, knowledge of subject content so that one can differentiate and modify teaching strategies based on the students' aptitudes, developmental stages, and cognitive ability to learn and store information, and knowledge of educational theory and research (Parkay, 2006; Bruning et al., 2004). Creating a community of learners is essential for setting the stage of learning. Fostering interpersonal interactions and understanding how the teacher's leadership style contributes to the development of the classroom environment is important in classroom management. Logistics of the classroom, rules, procedures, curriculum materials and activities are all part of the process of effective teaching. It is imperative that a teacher preparation program provides the tools needed to set this stage (Parkay, 2006; Seltzer-Kelly et al., 2011).

Other components of preparation are the abilities to assess and accommodate for special needs and developmental delays, to understand the

implications in the student population, and to meet the needs of all learners (Myers, Simonsen, & Sugai, 2012). Keeping up with the use of technology in the classroom and knowing when or when not to utilize technology to support the learning process have been important topics in teacher preparation (Kay, 2006). Assessment and the use of lesson plans and rubrics are essential to any teacher preparation program. For the students to understand the expectations and to assess the learning for grading or formative measures, the pre-service teacher must know how to be clear, match learning targets to understandable objectives, and use multiple indicators of performance. Also, to evaluate student's coursework, planning and knowledge of appropriate assessment practices are needed, and this requires good decision making skills on the part of the teacher (Nitko, 2004).

In addition to the knowledge, skills, ability, and experience, another important component of teacher preparation is induction into teaching, what to expect as a new teacher, and knowledge of how to get a job as a teacher. Influences such as content area, teaching in different geographic regions, the economy, and supply and demand impact the job market for new teachers. They may have to compete with experienced teachers for an opportunity to do what they have been trained to do (Parkay, 2006).

A well developed career plan to be a teacher requires an investment. Significant amounts of time, energy, and money is devoted to preparing for a career, and obtaining a college degree does not guarantee employment. Career development is indeed a process of finding one's strengths, interests, and a noble or defining goal that determines one's life direction (Fredrickson, 2009). After one finds

the path, then one invests in the education to gain the knowledge and credentials to qualify for the career. The rising cost of education is a factor as students may owe student loans and/or other debt that will require employment to pay back these costs; therefore, careful career decision making is important. In order to get ready for this transition, a student who pursues a career in education must now study, gain student teaching experience, and learn about resumes, cover letters, interviews, and networking, and focus on the world-of-work. For this reason, it is not enough for colleges and universities to provide a great education; academic institutions must identify the employability needs of the students so that their students can prosper and be successful. What is the Career Decision Self-Efficacy of pre-service teachers, and in what areas are they prepared or not prepared with regard to career decision and self-efficacy?

This study identifies the Career Decision Self-Efficacy needs of the pre-service teacher population. The information gained from this study is intended to address the needs that colleges, Career Services offices and university administrators that may better serve this population and similar populations.

### **Significance of the Study**

As this study provides a basis for identifying the Career Decision Self-Efficacy needs of pre-service teachers, looking at a population that has already decided on a major is different from the majority of research that has focused heavily on the college freshman student. The outcome of this study focused on interventions that can be applied to better assist the pre-service teacher population. This study will

expand the existing literature by looking at demographics of a population already committed to a teacher certificate degree program.

### **Definition of Terms**

1. **Career Decision Self-Efficacy** applies self-efficacy to the career development process. For the purpose of this study, Career Decision Self-Efficacy is defined as a person's belief and personal judgment of one's ability to perform career decision-making tasks and career development activities including (1) the ability to choose and execute appropriate occupations; (2) the willingness to put in the effort to train and attend educational programs; and (3) the commitment to obtain subsequent employment (Betz and Hackett, 1981).
2. **Career Decision Self-Efficacy Scale** measures Career Decision Self-Efficacy, a person's belief and personal judgment of one's ability to perform career decision-making tasks and career development activities (Betz and Hackett, 2006).
3. **First Generation College Student** is identified by the lack of college degree status of both their mother and father.
4. **Pre-Service Teachers** are students who have declared a major in education and is pursuing a teaching license, but who has not completed the necessary training to be a teacher.
5. **Self-Efficacy** is "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (Bandura, 1995, p. 2)

6. **Teacher Preparation Programs** provides a foundation of skills to educate a population of students and *prepares* students to apply for licensure according to state regulations.

## **Chapter II**

### **Review of Literature**

This study examines the Career Decision Self-Efficacy of pre-service teachers. Career Decision Theory and Career Development Theory are grounded in theories dating from the early 1900s. Two notable contributing theories are Career Decision Self-Efficacy theory, derived from Albert Bandura's Self-Efficacy Theory, and John Crites's Career Maturity theory. The review of literature will focus on Career Development Theory, Self-Efficacy, Career Maturity, and Career Decision Self-Efficacy, all of which have contributed to the foundation of determining the Career Decision Self-Efficacy of pre-service teachers.

#### **Career Development Theory**

The career development process starts with self-awareness and knowledge of occupational information; however, to find and keep a job, good decision-making skills, problem solving abilities and building relationships are also important. In addition, employability skills, networking skills, interviewing skills, and training and education equate to the job search process (Brown, 2006). The Career Development movement was part of the advancement and expansion that helped build the United States. Touching all aspects of the lives of humans, politics, educational systems, economics, and social advancement, career development has assisted in life as we know it. Career development has grown in stages beginning with the industrial revolution (Zunker, 2011).

Career development evolved in the United States in six stages beginning in 1890. Pope (2000) divides the history of career development into six stages (1) (1890-1919) starting with the growing needs of the industrial revolution, (2) (1920-1939) educational guidance in elementary through secondary education, (3) (1940-1979) the growth of college and university guidance counseling and enhancing the training of counselors, (4) (1960-1979) organizational career development as a lifestyle, (5) (1980-1989) transitions contributed by information technology and career counseling in private practice, and (6) (1990 to present) changing times of demographics, multicultural and evolving technology. Since the terrorist attacks in 2001, the depressed economy and the focus on career issues combined with life dilemmas takes career counseling into a new realm of importance. Balancing individual needs, wants, and dreams of a population trying to adapt to a shrinking workforce and a fierce competition to obtain employment, several historical career development theories must be reviewed in order to incorporate them to present situations (Zunker, 2011). Theories that lead to Career Decision Self-Efficacy are Trait and Factor, Life Span Development Theory, and Social Learning and Cognitive Theory.

### **Trait and Factor**

In the early 1900's, Frank Parsons established the foundation for Trait and Factor theory with the views and concepts he put forth in his 1909 book *Choosing a Vocation*. The concepts of Trait and Factors refer to an individual's characteristics, knowledge, skills, and abilities that are required to perform a particular job. Parsons believed that a counselor must first know the individual and second, have knowledge



of the job, including requirements, conditions, opportunities, advantages, and compensation. Third, knowledge of the individual and knowledge of the job must be correlated to determine suitable occupations. Parsons provided the foundation of the career counseling field as we know it today.

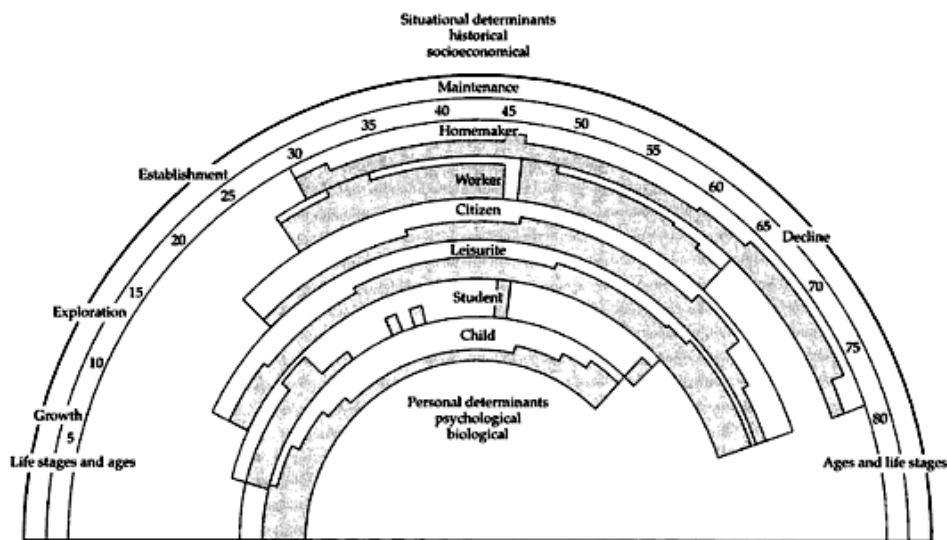
Parsons is also known as the father of career guidance (Brown, 2006). In the early 1940s, E. G. Williamson added to the straightforward work of Parsons by introducing six sequential counseling steps: analysis, synthesis, diagnosis, prognosis, counseling and follow-up. Williamson added a framework to the career counseling process using trait and factor theory (Zunker, 2011). Trait and Factor contributes to Career Decision Self-Efficacy as it is discussed further in the four perspectives of Career Decision Self-Efficacy. Trait and Factor theory inspired other theorists to elaborate and define other career development theory.

### **Life Span Development**

Another applicable approach to career development is Life Span Theory. A departure from the Trait and Factor theories, Donald Super's writings spanned nearly a half a century (Super, Savickas, & Super, 1996). Super postulated that career is a developmental process that occurs throughout a life span. Super first presented five developmental tasks: crystallization (14-18 years) – addresses the cognitive formulating of a vocational goal, specification (18-21 years) – the narrowing process of moving toward a vocational preference, implementation (21-24 years) – commitment to completing training, stabilization (24-35 years) – confirming commitments and working toward competency, and finally consolidation (35+ years) – arriving at the relative state of establishment. These stages were modified into

tasks that are cycled and recycled and resulted in the five modified developmental tasks of: Growth, Exploration, Establishment, Maintenance, and Decline. These five tasks move in and out of four age groups, Adolescence (14-25 years), Early Adulthood (25-45 years), Middle Adulthood (45-65 years) and Late Adulthood (65+ years) (Luzzo, 2000). The modified developmental tasks describe life stages in each age group. These modifications of life stages are flexible tasks that show growth in each life age. This is congruent with modern day life and career dilemmas as career is a process and an individual can change jobs and careers several times in a lifetime. It is forecasted that in the future, a large number of individuals will engage in several jobs and careers in their lifetime. This trend toward multiple jobs in multiple places gives credence to early career developmental stage theory (Drucker, 2002).

In a continuation of Super's stage development, Super developed The Life-Career Rainbow that explains the Life Span Cycle in this two dimensional graphic that represents a longitudinal dimension of a lifespan (Anderson & Vandehe, 2006). See Figure 2.1.



**Figure 2.1 The Life-Career Rainbow**

The stage and development theories inspired other theories that strived to contribute to career theory. Among those theories, Social Learning and Cognitive Theory took form.

### **Social Learning and Cognitive Theory**

Social Learning and Cognitive Theory was inspired by Bandura's Social Cognitive Theory, and many disciplines utilized these concepts to enrich their diverse fields. Research on Social Cognitive theory is insightful, and this theory has been used to conduct research on clinical problems, pain control, educational, motivation, human resources, and athletic performance just to name a few (Bandura, 1997). The research on self-efficacy, which is a construct of Bandura's Social Cognitive Theory, focuses on three major areas. The first area is motivation and academic performance. The second area is teacher's beliefs, teaching practices and student outcomes. The third is college major and career choice (Pajares, 1997).

More Social Learning and Cognitive Theory will be discussed as part of Career Decision Self-Efficacy Theory, but the origins will start with Self-efficacy Theory.

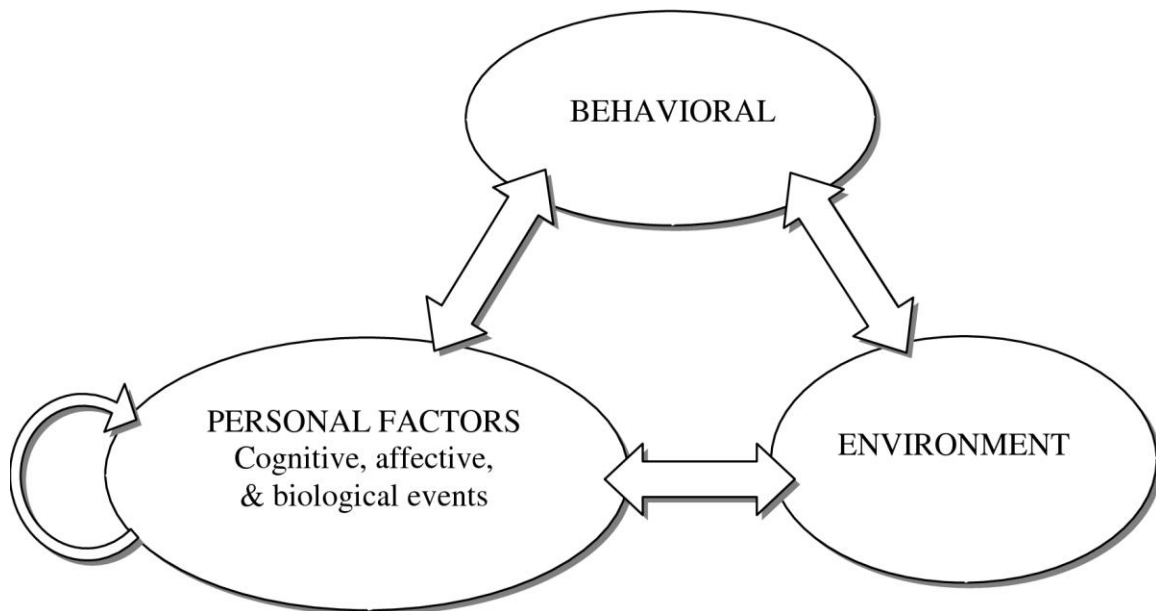
### **Self-Efficacy Theory**

Self-efficacy was introduced by Albert Bandura in 1977 in his publication, *Self-efficacy: toward a unifying theory of behavioral change*. The construct of self-efficacy was soon embraced by the field of psychology and now influences many domains in the discipline.

Bandura defines self-efficacy as “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations” (Bandura, 1995, p. 2). Perceived self-efficacy takes into consideration the personal responsibility component defined as “people’s beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives” (Wood & Bandura, 1989, p. 364). Self-efficacy is the belief that a person has the capacity to succeed in a particular situation. It is considered to be domain specific, implying that one may have high self-efficacy in one situation, while not in another. These self-beliefs are determinants of how a person feels, thinks, and behaves (Bandura, 1994). Behaviors and coping will depend upon the level of self-efficacy, the amount of effort that a person puts forth, and how long a person will endure in the face of obstacles (Bandura, 1977).

Self-efficacy is a construct of Bandura’s Social Cognitive Theory of Human Functioning that theorizes that a system of self-beliefs enables individuals to exercise control over their thoughts, actions, feelings, and motivations. How humans function is further explained in Social cognitive theory that promotes a model of

causation referred to as triadic reciprocity. This triangulation illustrated in Figure 2.2, consists of interactions of 1) personal factors (cognition, affect, and biological events), 2) behavior, and 3) environmental factors that influence each other bidirectional. Each of these three components of the Triadic Reciprocal Determinism Model influences the others independently but the components do not have to be equal in influence, nor do they transpire simultaneously. The beliefs that people have about themselves determine how they proceed in within this model. Individuals with high self-efficacy think and feel differently than those with low self-efficacy, influenced by the Triadic Reciprocal Determinism Model (Bandura, 1986). In addition to the triadic reciprocity, Bandura identified four main sources of cultivating self-efficacy.



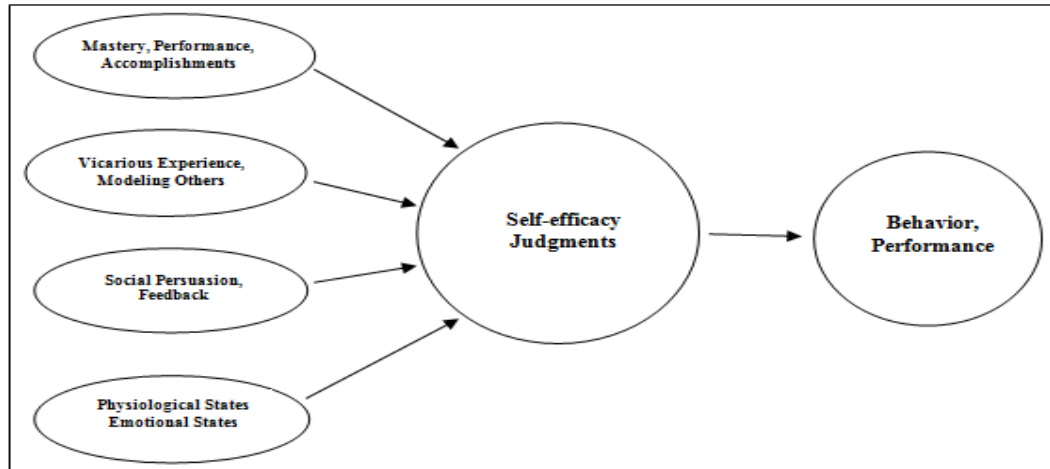
**Figure 2.2 Bandura's Triadic Reciprocal Determinism Model**

Four main sources of influence help develop individuals' beliefs about their self-efficacy. The strongest and most effective way to create self-efficacy is through

*mastery experience*. Outcomes of success, or mastery, build personal efficacy, thus promoting the belief in one's capacity and the ability to succeed. Experiences of failure however, deteriorate one's feelings of self-efficacy and replace those feelings with those of inadequacy, artificial limits, and doubt.

The second source of creating positive self-efficacy is through social models. *Vicarious experience* is watching similar individuals succeed, and the successful actions of others creating hope of succeeding themselves.

The third source is *social persuasions*. Individuals who receive positive feedback can be verbally persuaded to believe that they possess the capability to master activities, and therefore, they are more likely to put forth greater effort and ignore self-doubts. The final source is *physiological states* - referring to emotional states that affect a person's judgment in one's capacity to succeed. Stress, fatigue, anxiety and arousal can alter an individual's self-efficacy through negative emotion and hinder one's belief that he/she can succeed (Bandura, 1994). Research indicates that self-efficacy applied to numerous specific domains (such as education, motivation, career, phobias, and other clinical factors) is a good predictor of performance and behavior (Gist & Mitchell, 1992). See Figure 2.3.



**Figure 2.3 Four Sources of Self-Efficacy.** Adopted from Bandura, 1997.

Furthermore, self-efficacy theory has been used to explain motivation, academic learning, phobias, social skills, coping behaviors, sports performance, achievement and career efficacy (Bandura, 1997).

### **Career Maturity**

Another theory that is used in conjunction with Career Development Theory, Self-efficacy Theory and Social Learning and Cognitive Theory for the development and understanding of Career Decision Self-Efficacy is Career Maturity. Career Maturity was first introduced in the 1950's by Donald Super. Vocational maturity was a construct derived from Career Development Theory and developmental career stages. It is defined by Super as the degree of development or the place reached on the continuum of vocational development from exploration to decline (Super, 1957). He further states that the continuum of vocational development can be broken into vocational life stages, each defined by its particular characteristics (Super, 1957). Using life stages, career maturity can be thought of as vocational age, similar to mental age. Super and his colleagues elaborated on vocational maturity over a

course of four decades and the theory evolved into Super's Model of Career Maturity which includes two basic dimensions of maturity (Savickas, Biddick & Watkins, 2002). The first is attitudes toward career planning and exploration that include thinking about and planning for the future. Mature attitudes belong to individuals who look ahead, plan their approach and actively involve themselves in career planning activities; immature attitudes refrain from looking toward the future, do not apply themselves regarding career exploration activities and are unconcerned with obtaining career resources. The second dimension of maturity is the competencies for developing a career that include knowledge of occupations and range of careers available to them and competence and ability to apply decision-making principles and methods to solve problems (Super, Savickas & Super, 1996). In the theory, attitudes regulate the use of competencies generating outcomes such as decidedness and realism of choice (Savickas, Biddick & Watkins, 2002).

John Crites further refined the definition of career maturity by stating that career maturity explains the developmental approach to understanding behavior in regards to career and involves the assessment of an individual's level of career growth related to developmental tasks (Crites, 1976). Crites (1976) defines career maturity as the individual's ability and readiness to make appropriate career decisions, including awareness of what it takes to make career choices and the degree to which an individual's career selections are realistic and consistent over time. Crites developed a model of career maturity that includes two primary sets of process variables: career choice competencies and career choice attitudes measured by the Career Maturity Inventory, with career maturity displaying two



dimensions including affective and cognitive dimensions (Crites, 1973). The theory of career maturity was originally proposed as an explanatory construct to account for individual differences in readiness to make career decisions, to plan ahead, and to enter the world of work (Vondracek & Reitzle, 1998). Chickering and Reisser lists career development as part of developing a sense of purpose and defines career maturity as the ability to acquire accurate information about job opportunities, training requirements, and financial returns, to formulate career plans, and to reach a degree of certainty about one's plans (Chickering & Reisser, 1993). Higher career maturity is linked to school success. Research revealed that students with higher career maturity also have higher grade point averages (GPA) (Healy, O'Shea & Crook, 1985; Khan & Alvi, 1983) and that career maturity is associated with the curriculum that a student selects (Herr & Enderlein, 1976).

Career and academics are positively impacted by an increase in career maturity. Specific terms have been used to describe aspects of career maturity. Career decision status is defined as certainty or indecision and contributes to the development or the lack of career maturity (Patton & Creed, 2001). Career indecision is defined as an inability to make a decision about the vocation one wishes to pursue (Guay, Senecal, Gauthier & Fernet, 2004). Career Readiness is a level of maturity that allows one to acquire specific information on career options, to identify interests, values, and aptitudes, to use this information in career planning and course selection, and to change plans when pertinent information is presented (Adams, 1997). Identity development is the sense of awareness of oneself based upon a number of dimensions such as gender, race, sexuality, and ethnicity (Patton

& Creed, 2001). Career identity is a process that begins in late adolescence or early adulthood, and is subject to change throughout the life cycle. John Holland defines vocational identity as possessing awareness of and an ability to specify one's interests, personality characteristics, strengths, and goals as they relate to career choices (Holland, Gottfredson & Power, 1980). In addition to identity formation, self-regulation and planning are enhanced by career maturity.

Career maturity includes thoughts of temporal planning and the time/life management skills necessary for successful entry into and progression through the work force. Investigating variables that affect career maturity is important as it provides insight on the individual's work values and vocational potential (Lennings, 1994). People who possess high levels of career maturity are likely to obtain a successful and satisfying career due to better awareness of the career decision making process. These individuals often think about alternative careers, relate their present behavior with future goals, are committed to making career choices, and are willing to acknowledge and concede to the demands of reality (Savickas, 2001). Individuals entering the work-force with long-term goals and the capacity to view time positively should have high career maturity scores due to their ability to plan for the future realistically, positive attitudes toward work, and they should achieve at a higher level (Lennings, 1994).

Coming full circle, Career Maturity is directly linked to Career Development Theory, and Bandura's Self-Efficacy Theory and sets the stage for the construct of Career Decision Self-Efficacy.

## **Career Decision Self-Efficacy: Four Perspectives**

Self-efficacy theory has been used as a basis for understanding a person's career decision-making (Bandura, 1997). The following four represented theories are derived from the self-efficacy perspective.

1) *Career Decision Self-Efficacy* applies self-efficacy to the career development process. For the purpose of this study, Career Decision Self-Efficacy is defined as a person's belief and personal judgment of one's ability to perform career decision-making tasks and career development activities including (1) the ability to choose and execute appropriate occupations; (2) the willingness to put in the effort to train and attend educational programs; and (3) the commitment to obtain subsequent employment (Betz and Hackett, 1981). Career Decision Self-Efficacy is a well-accepted theory of understanding the career development process in general and in specific groups such as high school students, college students, and math/engineering students (Betz & Hackett, 2006). Bandura acknowledges Career Decision Self-Efficacy as a valid application of the theory in his book *Self-Efficacy: The Exercise of Control* (Bandura, 1997).

As in the general theory of self-efficacy, Career Decision Self-Efficacy includes the same four sources: (1) mastery and past performances and accomplishments, (2) vicarious and personal learning experiences, (3) verbal persuasion and the encouragement of parents, teachers, counselors and prominent adult figures who serve as role models, as well as (4) physiological states that can positively and negatively affect and impact Career Decision Self-Efficacy (Betz & Hackett, 1981).

In 1981, Nancy Betz researched women's obstacles in the pursuit of careers in math and science with a focus on math anxiety. She identified herself as a Trait and Factor Psychologist. Gail Hackett's research interests were in cognitive behavioral interventions grounded in social learning theory, and she identified as a Cognitive Behaviorist. She was a former career counselor who wanted to research the career development of women. Together, they created a 20-item Occupational Self-Efficacy Scale to measure underrepresented women in nontraditional career fields. They determined that women's self-efficacy was lower than that of men with respect to male dominated careers (nontraditional women's careers), and Career Decision Self-Efficacy and Career Decision Self-Efficacy took root (Betz & Hackett, 2006). After the 1981 study, Betz and Taylor developed the CDSE Scale, and the use of Career Decision Self-Efficacy rose in prominence in the career decision-making literature.

In 1983, Betz and Taylor developed the Career Decision Self-Efficacy (CDSE) Scale based on principles from career development theory, Bandura's self-efficacy theory, and Crites's career maturity theory. The CDSE was designed to measure a person's belief in his/her ability to implement the necessary tasks to make career decisions. In other words the CDSE measures Career Decision Self-Efficacy, a person's belief and personal judgment of one's ability to perform career decision-making tasks and career development activities (Betz and Hackett, 2006).

Building on Betz and Hackett's 1981 gender study, *The relationship of career-related self-efficacy expectation to perceived career options in college women and men*, Taylor and Betz found that because mathematics is gender-biased as a

masculine activity, women have a lower self-efficacy in math (1983). This lower self-efficacy deters women from selecting scientific and technology careers because mathematics is an essential component of these so-called nontraditional careers. This phenomenon starts as early as elementary school when girls underestimate their math ability and boys overestimate their ability (Wigfield et al., 1996). Pajares (1996) found this to be prominent in gifted students. Selection of college majors is directly influenced by mathematical skills and mathematics is sex-typed as a masculine activity. As a result, gender and prior math preparation directly influence college major selection (Hackett, 1985).

Another area of research is Career Decision Self-Efficacy and vocational identity. Erikson (1963) reported that forming a vocational identity is important in the development of identity development in adolescents. Individuals that have higher vocational identity also have stable career goals, interests and talents (Holland, Daiger & Power, 1980). Betz (2001) reported that the CDSE is correlated with career indecision and vocational identity. Using the CDSE Scale, a study of African American high school students showed a positive relationship between career exploratory behavior and vocational identity (Gushue et al., 2006). Robbins, 1985, also reported that vocational identity and Career Decision Self-Efficacy are associated. In addition, college major selection has been associated with vocational identity (Leung, 1998).

In addition, the CDSE has been used to assess Career Decision Self-Efficacy in science and engineering students (Lent, Brown, & Larkin, 1984; 1986), other cultures (Hampton, 2006), vocational schemas in career decision-making (Neimeyer

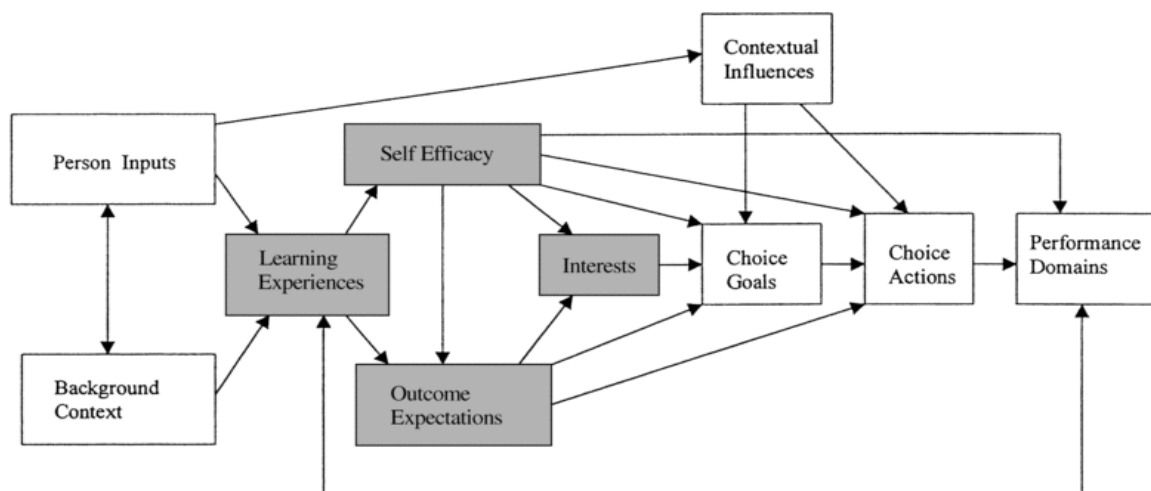
& Metzker, 1987), fear of commitment (Betz & Serling, 1993), academic and social integration (Peterson, 1993a), under-prepared students (Peterson, 1993b), SAT and ACT scores (Taylor & Betz, 1983), career development interventions (Betz & Luzzo, 1996), and computer assisted career guidance programs (Fukuuama, Probert, Neimeyer, Neville, & Metzler, 1988).

2) John Krumboltz, another researcher using social learning theory, cognitive theory and self-efficacy in regards to vocational development, identified interventions career counselors can use to identify, assess and change faulty career beliefs. Krumboltz's Social Learning Theory of career development is based on Bandura's theories and Krumboltz uses reinforcement theory and classical behaviorism in his interventions (Krumboltz, 1979).

Krumboltz further identified four influences regarding the career decision-making process. The first influence is characteristics inherited through heredity and environment over which there is little control (ethnicity, gender, aptitude, and coordination) and abilities that set limits on an individual's perceived career opportunities. The second influence is concerned with two different learning experiences. Instrumental learning occurs with positive outcomes (praise, financial prosperity and positive emotions) and the reactions of consequences. Associative learning comes from reactions to observations, media and written items or the experiences of others that are observed by the learner. The third influence occurs when behaviors are positively or negatively rewarded with merit or punishment. The fourth influence is tasks or skills obtained through the previous influences and techniques of learning that can be applied to assist individuals with career

development (Mitchell & Krumboltz, 1996). Although Krumboltz's theory proposes practical strategies for career counselor interventions, self-concept is utilized to navigate the career development tasks introduced by Super and Bandura's Social Cognitive Theory (Krumboltz, 1994).

3) Derived from Bandura's Self-Efficacy Theory and Betz and Hackett's Career Decision Self-Efficacy (Betz & Hackett, 2006), Lent, Brown, and Hackett (1994), developed Social Cognitive Career Theory (SCCT) that offers a career development approach utilizing self-efficacy to interact with three segmental models: the development of educational interests (Learning Experiences), career interests and performance (Outcome Expectations) in the context of academic and career spheres. Each model is distinct; however, each model connects with the other models. It postulates that people (Person Inputs), behavior (Contextual Influences) and the term environment that is interchangeable with the word "contextual" in this model, all intertwine and influence each other. See Figure 2.4.

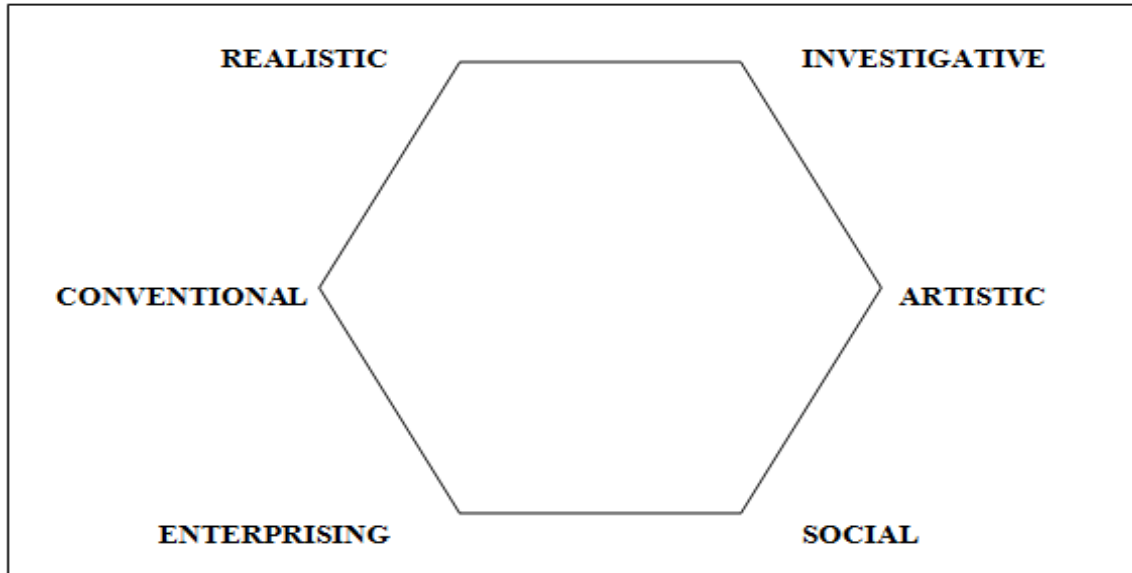


**Figure 2.4 Social Cognitive Career Theory.** Adopted from Lent, Brown, & Hackett, 1994.

In SCCT there are ecological layers of contextual environments called the Concentric Model of Environmental Influences. The proximal layer (Person Inputs) that include gender, ethnicity, and health is the immediate environment that surrounds the person. The proximal layer is surrounded by the distal layer (Background Context) which is the social-cultural context (parents, teachers, counselors), and both the proximal and distal layers influence the perception of possible career choices that an individual will consider (Lent, Brown & Hackett, 2000).

4) Intersecting with self-efficacy and Career Decision Self-Efficacy, Holland explains how individuals interact with their environment, personal characteristics and interests resulting in vocational pursuits, by utilizing interest types: (I) investigative, (A) artistic, (S) social, (E) enterprising, (C) conventional, (R) realistic. Configured on a hexagon that statistically correlates in relation to the next interest type, the closer the letters on the hexagon, the more related they are to the interest types next to them (Holland,1997). See Figure 2.5.





**Figure 2.5 Holland Hexagon.** Adopted from Holland, 1997.

The letter codes have been successfully used to determine occupational interests. Codes are assigned in one to three letter codes to show similar patterns of preferences that result in similar vocational interests associated with career pursuits (Holland, 1997). Well researched and accepted, Holland's interests codes have been used for decades to assist career counselors in diagnostically serving clients to find career direction as efficacy beliefs build interests in activities and efficacy beliefs influence career choice through vocational interests (Bandura, 1997). The Career Decision Self-Efficacy as it measures a person's belief in their ability to implement the necessary tasks to make career decisions and defined by Betz and Taylor will be used in this study.

After reviewing research, it appears that self-efficacy and career maturity figure prominently in scholars' thinking about Career Decision Self-Efficacy and its development. The review of literature indicates that the role of career decision-

making in conjunction with self-efficacy is important. Assessing one's self-appraisal, knowledge of occupational information, selecting goals appropriate for the individual, proper planning for the future and the ability to solve problems as they arise are key components for success and significantly add to a student's educational experience and future. Identifying the student's demographics in conjunction with the Career Decision Self-Efficacy scales will assist in discovering the individuals that need career interventions.

The purpose of this study is to measure the Career Decision Self-Efficacy of pre-service teachers so that their career needs may be focused on by colleges of education, career services offices and administrations to better serve future teachers in their career endeavors. For the purpose of this study, a pre-service teacher is a student who has declared a major in education and is pursuing a teaching license, but has not completed the necessary training to be a teacher. A pre-service teacher must complete a period of observing teachers at the level that they intend to teach (such as elementary, middle school or secondary) through a student teaching experience, working alongside a master teacher before graduating and obtaining a license.

### **Research Questions**

In order to gain a better understanding of who will be more successful in the endeavor to obtain a desired career and who will need interventions based on the review of literature, this study focused on: 1) describing pre-service teachers by using demographics (gender, age, ethnicity, socio economic status, whether participant has children, GPA, year in school/credits earned, majors, number of

times they have changed their major, parents' educational level and participation in career guidance experiences at The University of New Mexico or other educational institutions).; and 2) determining the Career Decision Self-Efficacy of pre-service teachers using the Career Decision Self-Efficacy Scale (Total Score, and five subscales: Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem Solving).

The following questions were asked:

1. *What is the relationship between gender and the subscales of Career Decision Self-Efficacy of pre-service teachers?*

Past research ( Luzzo, 1993; Wilson, 2000) has failed to show significant difference between genders, so none was anticipated in this study.

2. *What is the relationship of student age to the subscales of Career Decision Self-Efficacy of pre-service teachers?*

Students in a degree program have already made some career choices, and it is believed for the purpose of this study that an older student will have a higher Career Decision Self-Efficacy than a younger student because of work experience and a familiarity with the process of obtaining a job and experience in problem solving.

3. *What is the relationship between ethnicity and the subscales of Career Decision Self-Efficacy of pre-service teachers?*

Although ethnicity has been a factor in Career Decision Self-Efficacy in regards to the perceived barriers and the influence of internal and external influences, it is predicted that there will be little difference in the level of Career

Decision Self-Efficacy. It is hypothesized that positive role models and the high percentage of diversity in the state of New Mexico will have lessened some of the barriers to the students who have already decided on a career path.

4. *What is the relationship between socioeconomic status (SES) and the subscales of Career Decision Self-Efficacy of pre-service teachers?*

Based on research that low SES students struggle with career development and navigating the educational system, it is hypothesized that low SES students will have low Career Decision Self-Efficacy (Hotchkiss & Borrow, 2002).

5. *What is the relationship between grade point average (GPA) and the subscales of Career Decision Self-Efficacy of pre-service teachers?*

It is hypothesized that a high GPA will produce high Career Decision Self-Efficacy and low GPA will score lower on Career Decision Self-Efficacy.

6. *What is the relationship between first generation college students and college students whose family members have previously attended college in the subscales of Career Decision Self-Efficacy of pre-service teachers?*

It is predicted that first time college students will have a lower Career Decision Self-Efficacy. First generation college students typically have a disadvantage because they have a more difficult time in seeing themselves as college material and do not have the support or advice of their family. They have a tendency to navigate the educational system on their own and are unfamiliar with college support departments (Williams & Butler, 2010).

*7. What is the relationship between the number of career guidance experiences and the subscales of the Career Decision Self-Efficacy of pre-service teachers?*

It is hypothesized that students that seek out resources such as a Career Services department, workshops, and presentations will have higher Career Decision Self-Efficacy. Career activities will provide students with occupational information, assessments and counseling to assist with their career endeavors.

## **Chapter III**

### **Methods**

This chapter will discuss participant selection, description of the instruments used for data collection, procedures, and methods of analysis to be used in this study.

#### **Participant Selection**

The participants selected for this study were undergraduate students enrolled in educational psychology classes at The University of New Mexico EDPY 303 – Human Growth and Development and EDPY 310 – Learning in the Classroom. The two targeted educational psychology courses are required curriculum for the teacher education program. Students who are not majoring in teacher education taking the educational psychology courses were welcome to participate. All of the students in the undergraduate educational psychology courses were required to participate in a research study, or write a research paper as an alternative, and it was estimated that 150 to 200 participants would participate in the study.

#### **Procedures**

The participants were provided a variety of times that the educational psychology lab was available to sign up for their participation in this study. The students of the undergraduate educational psychology classes who chose to participate received a notice on the participant pool website indicating the times and place for participation. It was explained that they will complete a survey and that the responses to the self-rating survey and demographic questionnaire will be anonymous. As the participants entered the lab, they were greeted and informed

about the study. The participants were given a consent form, the paper demographic questionnaire and the Career Decision Self-Efficacy Scale (CDSE) as well as writing materials. The participants were instructed that they were giving their consent to participate when they answered the first question. After the participants completed the demographic questionnaire and (CDSE), the instruments were collected, and the instruments and consent forms were locked in a secure file before and after the data were loaded into a password secured computer. All participants were given a debriefing form to complete and take to their instructors to receive credit for their research participation.

### **Description of the Instruments and Rationale for Use**

I. *Consent Form.* The consent form explained that by participating in this study, they have fulfilled their class research requirement. Each participating student was given a debriefing form to give to their instructor, proof that the student participated in a research project. The consent form clearly stated that participating in this study is a voluntary process. If the participant wished not to participate or wished to drop out from participating at any time, they would not be penalized for dropping out of the study. The consent form indicated that there are no known risks in completing the survey, and all data collected will be handled lawfully and treated with confidentiality. It was also explained that the materials used will be stored in a locked cabinet, and that the information input into the computer will not have any identifying information. See appendix A.

II. *Demographic Questionnaire.* This study looked for results based on specific demographics; therefore, the demographic questionnaire was extensive to

gather as much information as possible. The demographic questionnaire gathered information about gender, age, ethnicity, socio economic status, children, GPA, year in school and credits earned, major and certifications in teaching sought, number of times they have changed their major, role model information, parents' educational level and career related activities that they have participated in at The University of New Mexico or other educational institutions. See appendix B. If published, the results will be in summary format only and no names or identifying information will be used. As the demographic questionnaire was an important instrument for identifying demographic information the rationale for the specific information is given.

*Rationale for including gender.* In regards to perceived capabilities, men and women differ in various occupations. Typically, women possess less self-efficacy in the field of math and science (Betz & Hackett, 1983). After arriving at an occupational decision, the differences in capabilities tend not to differ (Bandura, 1997). More recent studies show a different scenario emerging as the self-efficacy of female students enrolled in entrepreneurship studies in Master of Business Administration programs were stronger than the men in the same program (Wilson, Kickul, & Marlino, 2007).

*Rationale for including age.* Age is a common variable studied by researchers utilizing the CDSE. Luzzo reports weak correlations .17 and .27 that were considered significant, and suggested that self-efficacy may increase with age (Luzzo, 1993; Luzzo & Ward, 1995). Biological and normative social events link age to status and roles that involve family, education and occupation (Pajares & Urdan, 2005). Development and life experience makes age an enticing demographic.



*Rationale for including ethnicity.* The demographic of ethnicity is important to educators and instructional institutions. Study skills, identity perceptions, and financial situations of students of color were perceived barriers in the study of undergraduate university students (Luzzo, 1993). Students of color are more affected by internal and external influences regarding career and educational endeavors. The internal and external influences were parental influence, finding a job, improving reading and learning skills, and becoming more cultured. It was found that the majority of students of color were first generation college students, and students of color that aspired for a bachelor's degree or higher were fewer than the white students (Laanan, 2000).

*Rationale for including socioeconomic status.* A key predictor of self-efficacy is socioeconomic status (SES) and the influence of family (Call, Mortimer, Lee & Dennehy, 1993). Status Attainment Theory (SAT) postulates parental status and cognitive variables contribute to educational pursuits that directly affect career development, occupational choice and earning potential (Hotchkiss & Borrow, 2002). SES impacts aspirations, efficacy, standards, affective states, and self-regulatory abilities (Bandura, 1993).

*Rationale for including GPA.* According to a previous study, grades and academic performance are positively associated with a student's self-efficacy (Taylor & Betz, 1983; Luzzo, 1993; Mau, 2000; Hampton, 2006). Self-efficacy is related to academic performance behavior as students with 3.5 to 4.0 grade point averages (GPA) have been reported to have higher Career Decision Self-Efficacy in comparison to those with lower GPAs 2.99 to 1.0 (Peterson, 1993). The relationship

of self-efficacy beliefs regarding persistence and academic success was reported in students majoring in science and engineering majors. It was reported that those who scored high on the CDSE also had higher GPA averages, and that the level of self-efficacy not only predicted GPA, it also predicted retention (Lent, Brown & Larkin, 1984).

*Rationale for including college major.* The decision of a college major can be complex, and the career decision making process is a cognitive and developmental process that may change as a student's brain develops and the student has more experiences (Feldman, 2005; Newman & Newman, 2003; Brown & Lent, 2005). It is not unusual for a college student to change his/her major three to four times before graduating from college leading to an extended time in college (Johnson, 2011).

*Rationale for including information on parental educational level.* First-generation college students are students whose parents did not attend college. They have unique obstacles that produce challenges to college administrators and counselors because first-generation college students are not aware of their own academic and social needs (Williams & Butler, 2010). First-generation students are more likely to be older, have lower incomes, be married, and have dependents. They are more likely to enroll in postsecondary education as a part-time student and attend public community colleges that are less likely to have support resources. First-generation students attain credentials at a slower rate making their academic goals slower and distant, hence producing a negative effect on persistence and attainment (Horn, 1996). Often facing unique challenges such as conflicting obligations, unrealistic expectations, a lack of appropriate preparation, and poor

support, first-generation college students have a difficult time reaching their goal of obtaining a college degree (Hsiao, 1992).

*Rationale for including role model.* A role model is a person who provides guidance, inspires, and/or offers a good example for someone to follow in a particular behavioral, social and/or vocational role. Role models influence individuals and influence other's lives and activities. Bandura (1986) indicates that individuals identify with role models that are similar to themselves in regards to demographics such as race and gender. Bandura's second source of self-efficacy is vicarious through social models and watching similar individuals succeed. Watching others succeed and emulating the success of others creates hope of similar success. A role model is an influence that supports and has a direct effect on career choice (Lent, Brown & Hackett, 2000). Especially important to women, role models serve as an essential component to women who seek nontraditional careers in math, engineering and science fields (Betz, 1994).

*Rationale for including information on career guidance experiences.* A college career guidance office should be comprehensive and provide a range of services that are conducive to the college population's needs. The services should include career advising, career counseling, and career planning. These services can be provided in several modalities such as career courses, workshops, presentations, one-on-one counseling (career decision-making, choosing a college major, the job search, interview techniques, resumes and cover letters), career fairs, job placement, internships, and assessments. Career placement activities are typically part of a process rather than a single event (Zunker, 2002; Herr & Cramer, 2003). A

career service department is a college resource. Career professionals work to market and build awareness of their services, provide counseling and advisement, make career presentations, build relationships with industry to promote on campus recruiting and career fairs to support the education, career building and personal well-being of their students.

In addition to the demographic questionnaire for identifying demographics, information regarding Career Decision Self-Efficacy was sought for information to compare with the demographics. The Career Decision Self-Efficacy Scale measures the confidence level of participant's Career Decision Self-Efficacy. In researching instruments for this study, the CDSE not only measured the criteria that the study desired, it is a respected instrument that shows validity and reliability of the scores.

III. *Career Decision Self-Efficacy Scale (CDSE)*: This study was designed to use survey research to determine the level of Career Decision Self-Efficacy of Pre-Service Teachers. Based on Albert Bandura's Self-Efficacy Theory, The Career Decision Self-Efficacy(CDSE) was developed by Taylor and Betz (1983) to measure "an individual's degree of belief that he/she can successfully complete tasks necessary to making career decisions," (Betz & Taylor, 2006, p. 6).

The original form created in 1983 has a scale of 50 items. A short form of this instrument Career Decision Self-Efficacy Scale – Short Form (CDSE-SF), consisting of 25 items, was developed in 1996 (Betz, Klein & Taylor, 1996). Within the 25-item instrument, five subscales are measured by five questions per subscale contained in the CDSE-SF, and within the 50-item version, 10 items measure each of the five subscales. For the purpose of this study, the CDSE 50-item version will be used

because the 50-item version has been shown to be slightly more reliable (Betz, Klein & Taylor, 1995; Betz & Luzzo, 1996). In addition to Bandura, the CDSE is built on other career theories. Another major theorist used in the development of the CDSE was John Crites. The CDSE has five subscales based on Crites's Career Choice Competencies in his model of Career Maturity (1978): Self-Appraisal, Occupational Information, Goal Selection, Planning for the future, and Problem Solving.

The CDSE defines *Self-Appraisal* as the ability to assess personal aptitude, interests, and values in relation to career satisfaction and success. Ten items measure Self-Appraisal: an example of a Self-Appraisal item is “how much confidence do you have that you could accurately assess your abilities.”

The subscale *Occupational Information* is defined as the ability to gather information about different careers in regards to job duties, tasks, and employment outlook. One of the ten items that measures Occupational Information is “how much confidence do you have that you could use the internet to find information about occupations that interest you.”

*Goal Selection* refers to choosing a selected lifestyle and appropriate/realistic occupations. It is also measured by ten items, including “how much confidence do you have that you could define the type of lifestyle you would like to live.”

*Planning for the future* is defined as selecting the course of action and logical steps to achieve selected goals. An item that will measure planning for the future is “how much confidence do you have that you could make a plan of your goals for the next five years.”

*Problem Solving* is defined as planning strategies to overcome barriers that will inevitably occur in the pursuit of a career. An example item for Problem Solving is “how much confidence do you have that you could apply again to graduate school after being rejected the first time.”

All items on the questionnaire are rated using a five point Likert type scale with the following valuation: 1 is equivalent to “no confidence at all,” 2 is equivalent to “very little confidence,” 3 is equivalent to “moderate confidence,” 4 is equivalent to “much confidence,” and 5 is equivalent to “complete confidence” (Betz, Klein & Taylor, 1996). See Appendix C.

### **Reliability**

Taylor and Betz (1983) first administered the CDSE to 346 college students of which 128 were male and 218 were female. These students attended either a private liberal arts college or a large state university in the Midwest. Estimated with coefficient alpha, the internal consistency reliability is reported high for all of the CDSE subscales: Self-Appraisal (.88), Occupational Information (.89), Goal Selection (.87), Planning (.89), and Problem Solving (.86) (Benish, 1999). The 50 item instrument reports a total reliability of .97 for scores, and the 25 item reports an alpha value of .94 (Betz, Klein & Taylor, 1996). Utilizing a test-retest reliability coefficient six months between tests reported a coefficient of .83 (Betz & Taylor, 2006).

Because the CDSE reports high reliability when administered to college students and the instrument was designed to be used with college students, the CDSE was a suitable instrument for measuring the degree of career/self efficacy and

career decision making in the College of Education students in this study. Reliability will also be analyzed for the current sample.

### **Validity**

The evidence of validity supported by test content starts with the definition of the domain of interest which is the construct of self-efficacy referring to the beliefs of one's capabilities. This construct is based on the theory of career maturity (Crites, 1978), (Taylor & Betz, 1983) and self-efficacy (Bandura, 1977). The CDSE's content measures self-efficacy by measuring self-reported responses in relation to the five subscales developed by Crites (Crites, 1978).

Validity, a unitary concept, is the degree that theory and evidence support the intended use of the test and the scores obtained (AERA, APA, NCME, 1999). Evidence based on internal structure of the CDSE is supported by research showing relationships to variables including educational and career attitudes, career indecision, career exploration, and progress toward educational and career goals (Betz & Hackett, 2006). The CDSE has a high degree of validity for measuring Career Decision Self-Efficacy, the intended construct as the first CDSE validation was in a sample of college students (Taylor & Betz, 1983). Although adaptations to the CDSE have been implemented that apply the instrument to middle school and high school students, the majority of research has been conducted with college students (Betz & Taylor, 2006).

## **Method of Analysis**

*Statistical Analytical Software:* The demographic questionnaire information and the data from the (CDSE) was analyzed using an SPSS software version 19 (SPSS for windows, version 19).

*Demographics Questionnaire:* The first objective was to describe the college students demographically. The variables were described using frequencies and percentages, as well as means and standard deviations where appropriate. Reliability was analyzed using Cronbach's alpha, Cohen's  $d$ , and omega squared for Total Scores and subscale scores in this sample.

Descriptive statistics such as frequencies, and percentages were used to describe the demographic variables: gender, age, ethnicity, socio economic status, whether participant has children, GPA, year in school/credits earned, majors, number of times they have changed their major, parents' educational level and participation in career guidance experiences that the student has participated in at The University of New Mexico or other educational institutions. The demographic of role model was an open ended question. The open ended response was solicited because the researcher did not want to influence the response with categories. The demographic questionnaire asks "do you have a role model" yes or no, if so who and what is the relationship of this person to you. Quantitative coding was not used for the demographic data concerning role models because the question regarding role model did not result in a significant result.

*Career Decision Self-Efficacy:* The Career Decision Self-Efficacy was measured using the five subscale scores, and Total Score from the Career Decision



Self-Efficacy instrument. To determine the Career Decision Self-Efficacy of pre-service teachers, the five subscales, (Self-Appraisal, Occupational Information, Goal Selection, Planning for the future, and Problem Solving), was examined.

The objective determined what relationship exists between the CDSE subscales and the demographic characteristics. ANOVAs were used to compare the relationships between the CDSE subscales and the demographic characteristics in order to test for evidence of statistical significance among them. The ANOVAs were followed by Tukey's post hoc multiple comparison to test differences between the individual subscales and demographic characteristics when appropriate.

### **Analysis of Research Questions**

Is there a main effect for demographic variable on Self-Appraisal?  
(Self-Appraisal x gender; Self-Appraisal x age; Self-Appraisal x ethnicity; Self-Appraisal x socio economic status; Self-Appraisal x credits earned; Self-Appraisal x times you changed your major; Self-Appraisal x GPA; Self-Appraisal x major; Self-Appraisal x parental education level; Self-Appraisal x role model; and Self-Appraisal x career guidance experiences).

Is there a main effect for demographic variable on occupation information?  
(Occupational Information x gender; Occupational Information x age; Occupational Information x ethnicity; Occupational Information x socio economic status; Occupational Information x credits earned; Occupational Information x times you changed your major; Occupational Information x GPA; Occupational Information x major; Occupational Information x parental education level; Occupational Information x role model; and Occupational Information x career guidance experiences).

Is there a main effect for demographic variable on Goal Selection?

(Goal Selection x gender; Goal Selection x age; Goal Selection x ethnicity; Goal Selection x socio economic status; Goal Selection x credits earned; Goal Selection x times you changed your major; Goal Selection x GPA; Goal Selection x major; Goal Selection x parental education level; Goal Selection x role model; and Goal Selection x career guidance experiences).

Is there a main effect for demographic variable on planning for the future?

(Planning for the future x gender; Planning for the future x age; Planning for the future x ethnicity; Planning for the future x socio economic status; Planning for the future x credits earned; Planning for the future x times you changed your major; Planning for the future x GPA; Planning for the future x major; Planning for the future x parental education level; Planning for the future x role model; and Planning for the future x career guidance experiences).

Is there a main effect for demographic variable on Problem Solving?

(Problem Solving x gender; Problem Solving x age; Problem Solving x ethnicity; Problem Solving x socio economic status; Problem Solving x credits earned; Problem Solving x times you changed your major; Problem Solving x GPA; Problem Solving x major; Problem Solving x parental education level; Problem Solving x role model; and Problem Solving x career guidance experiences).

## **Summary**

The participants for this study were undergraduate students enrolled in two educational psychology classes required for a degree in the teacher education program. These participants who choose to participate in the study signed up for

different time slots. Afternoon and evening times were provided for the participants to take the survey and 5-25 participants took the survey at one time at the Educational Psychology Lab. Each participant received a consent form, demographic questionnaire and a CDSE Scale. Each session took approximately 35 minutes. All participants remained until all materials were collected.

The consent form stated that the study was voluntary, confidential, IRB approved, there was no known danger in participating and the participants could opt out at any time without penalty. See Appendix A. The Demographic Questionnaire consisted of 15 questions regarding (Gender, Age, Ethnicity, Socio economic Status, Children or No Children, GPA, Credits Earned, Majors, number of times they have changed their major, Parents' Educational Level and Career Guidance Experiences). See Appendix C. Career Decision Self-Efficacy Scale (CDSE) (Taylor & Betz, 1983) consisted of 50 items and 5 subscales (Self-Appraisal, Occupational Information, Goal Selection, Planning and Problem Solving). Each subscale was measured by 10 questions. A Likert 5 point scale: 1 is equivalent to "no confidence at all," 2 is equivalent to "very little confidence," 3 is equivalent to "moderate confidence," 4 is equivalent to "much confidence," and 5 is equivalent to "complete confidence." Each participant received a debriefing form to provide evidence that they participated in a research project. See Appendix D.

Descriptive statistics such as means, frequencies, and percentages were used to describe the demographic variables. ANOVAs and *t* tests were used to look at relationships between the demographic characteristics and sub scales. Tukey's

post hoc multiple comparison was used as follow up tests to determine differences when appropriate.

## **Chapter IV**

### **Results**

This research study examined the Career Decision Self-Efficacy of pre-service teachers enrolled in educational psychology classes at The University of New Mexico.

#### **Screening the Data**

Before analyzing the data, entries were double checked for errors and outliers. As for the categorical and continuous variables, frequencies and descriptive statistics were inspected looking at the minimum and maximum scores and the mean scores to check for accuracy and outliers.

#### **Assumptions**

Assumptions for normality, independent measures and homogeneity of variables were examined utilizing box plots, histograms, skewness and kurtosis, and Kolmogorov-Smirnov for normality and Levene's Test for Homogeneity of Variances. Valid and missing data were addressed using exclude cases pairwise.

The assumption of independence of observation is defined as "each observation or measurement must not be influenced by any other observation or measurement" (Pallant, 2010, p. 205). In this study, all participants were observed by assessment facilitators. It can be assured that each participant took the assessments only once, not as a group, and there was no interaction between the participants during the assessment. The assumptions for normality were assessed and showed to be close to approaching normality according to the Q-Q Plot. However, the assumption of normality in social science studies is frequently not

normally distributed. Research supports that comparison of means such as ANOVAs (Kuninskaya & Dollinger, 2006; Schmider et al, 2010) and independent *t* tests (Tsou, 2003) are reasonably robust or tolerant of the violation of normal distribution. In addition, Levene's test of homogeneity is provided for the demographic variables to report whether or not the assumption of homogeneity has been determined.

### **Demographics**

Out of the 195 university undergraduate participants, 151 (77.4%) were female, and 44 (22.6%) were male. Out of 195 participants, 194 participants answered the demographic age, and one participant left this demographic blank. One participant, in particular, reported the age of 12. All facilitators were asked if they observed anyone that could be that age, and they reported that they did not see a participant that looked the age of 12. That participant's age was discarded from the data. The years of age ranged from 18 to 58 with the  $M = 25.20$ ,  $SD = 7.77$  and  $Mdn = 22$ . The mean-median comparison indicates a negative skew. The continuous variable of age was categorized into four groupings, as shown in Table 4.3.

Because the median was 22, the sample was divided into two groups at that cut point. In correlation with the two group split, the first age group 18 to 20 represents the early college ages or early adult transition, and the second group ages 21-22 represents the college ages entering early adulthood. Referencing emerging adulthood theory proposed by Jeffrey Arnett in 2000 and supported by Levinson (Levinson et al, 1978; Levinson & Levinson, 1996), early adulthood begins at age 22 and ends between ages 28 to 32. The third group ages 23 to 27 represents early adulthood. The age of 28 is the cut point in the fourth age

distribution representing young-to-midlife adults as defined by Arnett in 2001. These four categories were 18-20 years 56 (29%), 21-22 years 54 (28%), 23-27 years 36 (18.7 %), and 28+ years 47 (24.3%). These divisions of age categories represent the skewed college age distribution.

The ethnic composition for the 194 participants who answered the demographic of ethnicity includes 88 (46.1%) White, 84 (44%) Hispanic, while the remaining participants were constituted of 9 (4.7%) for American Indians/Alaskan Natives, 6 (3.1%) Black 4 (2.1%) for Asian/Asian Americans, and 3 who identified as others and thus eliminated. Going by these figures and those presented in Table 4.4, the disparities present in the demographics become readily apparent. For example, there were more females than males and there were also more Whites and Hispanics than any other ethnic group in the study.

Household financial information was collected to determine the socio-economic status (SES) of the participants and these demographics are presented in Table 4.8, which accounts for self-reported primary financial source, parenting status, income, and socio-economic status and the Career Decision Self-Efficacy of the Total Score and the five subscales. Out of the 195 participants surveyed, 119 (61%) identified themselves as their own source of financial support, while 76 (39%) reported that their family of origin was their source of financial support. The majority of the respondents 136 (69.7%) indicated that they did not have children, while 59 (30.3%) indicated that they did have children. The participants were asked to report their income based on how they answered the question if they or their family was their primary source of income, and 193 participants answered the question. Still

regarding their income, they were provided with categories to choose from, and the majority 70 (36.3%) of them fell within the \$0 - \$20,000 range, while the \$20,001 - \$30,000 range accounted for 22 (11.4%), and the \$30,001 - \$40,000 range accounted for 19 (9.8%). Furthermore, 29 (15%) of them fell within the \$40,001 - \$60,000 range, 22 (11.4%) within the \$60,001 - \$100,000 range, and the remaining 31 (16.1%) reported having incomes of \$100,000 and above. The Federal Free and Reduced lunch formula was then applied to the findings. This formula involves the multiplication of the Federal income poverty guidelines by 1.85 (for reduced meals) and 1.30 (for free meals). The Federal income eligibility guidelines are, in turn, set in turn set every year by the Federal government based on the household size and the State the family resides in. (Department of Agriculture, 2012). Applying this formula revealed that 99 (51.3%) of the participants have a disadvantaged SES, while 94 (48.7%) do not.

Participants were asked to identify the number of college credits that they had earned, and these data are represented in five categories. The educational psychology classes that were used in this study are typically junior level classes. However, the majority of participants identified themselves as junior and senior level students. Seniors, with credits that fell between 91 – 124 credits accounted for 77 (39.5%), and juniors with credits between 61 – 90 accounted for 74 (37.9%). Because the class is a junior level class, only four participants were identified as freshmen and twenty-six as sophomore, and thus categories were combined. They were 30 (15.4%) and their credits were between 0 – 60 and post BA/BS with 125+ credits accounted for 14 (7.2%).



Participants were asked how often they had changed their major. It was found that the most common responses were 1 - 2 times 97 (49.7%) and never 76 (39%), and 3+ times, 22 (11.3%). Only 2 participants indicated that they had changed their major over 5 times, because the representation fell off at the 3 to 4 range, the 2 that indicated 5+ were combined with the 3 to 4 to be 3+. These results are presented in Table 4.10 below. In addition, participants were asked to indicate their current cumulative college grade point average (GPA) and the findings were also categorized as seen in Table 4.11. The percentage of participants whose GPA was 3.50 and above accounted for 72 (36.9%), between the GPA ranges of 3.00 and 3.49 was 79 (40.5%), while 2.99 and below had 44 (22.6%). Regarding the participants majors, 82 (42%) were in Elementary Education, 55 (28.2%) were in Secondary Education, 20 (10.2%) were in Health, Exercise, Sport Science (HESS) that includes Health Education, Physical Education Teacher Education, Exercise Science and Athletic Training Majors, 20 (10.2%) were also doing other College of Education majors (Special Education, Art Education, Early Childhood Education, Family Studies, and Educational Leadership), and 23 (11.7%) were doing other majors outside education. Five students indicated two majors, and these participant's scores were calculated into both majors that were indicated.

To determine the status of first generation college students, participants were asked about the educational level of both parents. For the father's education, 194 participants answered the question. Data collection produced the following findings. The students whose fathers did not graduate from high school accounted for 21 (10.8%) of the participants, while the fathers of 56 (28.9%) of the participants went to

high school or earned a GED. The fathers of 30 (15.5%) of the participants had some college, and the fathers of 20 (10.3%) had some 2-year, associate degree or trade school degree. For 4-year or bachelor's degree, it was 34 (17.5%), while for graduate or master's degree, it was 22 (11.3%), and for PhD, JD or MD, it was 11 (5.7%). As for the mothers' education, data collection revealed the following findings. The mothers of 19 (9.7%) of the students did not graduate from high school. For those that attended high school or received a GED, it was 48 (24.6%), while for some college, it was 28 (14.4%), and for 2-year, associate degree or trade school, it was 25 (12.8%). In the case of 4-year or bachelor's degree, the mothers of 34 (19.5%) had it while for graduate or master's degree, it was 22 (15.4%), and for PhD, JD or MD, it was 7 (3.6%). These findings are presented in Table 4.19, and from these, the First Generation College Students were identified by the lack of college degree status of both their mother and father. This accounted for 76 (39%) of the participants.

Information about key aspects of career development was collected for each participant. In addition, 147 (75.4%) of these students reported that they had a role model and the remaining 48 (24.6%) reported not having a role model. When asked whether they had utilized services offered by the campus Career Services Department, 132 (67.7%) indicated that they had not used it, while the remaining 63 (32.3%) students indicated having used the services.

### **Check for Internal Consistency**

The reliability of the scores obtained during this study was analyzed. Cronbach's alpha was computed for the Total Score and for each of the five

subscale scores to establish levels of reliability of the scores for this study. The findings are as computed in Table 4.1. The obtained figures indicate highly reliable scores, and comparing the reliability of the scores of this study and the data obtained by Betz, Hammond and Multon in 2005 regarding reliability and validity of response continua for the Career Decision Self-Efficacy Scale, this study slightly exceeded the reliability scores obtained in the previous study.

**Table 4.1 Cronbach's  $\alpha$**

Subscale	Number of Items	Cronbach's $\alpha$ for Current Study	Cronbach's $\alpha$ from Published Data*
Self-Appraisal	10	.86	.81
Occupational Information	10	.87	.82
Goal Selection	10	.85	.84
Planning	10	.87	.84
Problem Solving	10	.84	.80
Total Scale	50	.96	.95

\*Published data: Betz, N.E., Hammond, M., & Multon, K . (2005).

## Gender

Comparison of means utilizing independent  $t$  tests were implemented to determine if a relationship existed between Career Decision Self-Efficacy and gender. Levene's Test for Equality of Variances ranged from .075 and .867 indicating that the assumption of homogeneity was determined for gender. The comparison of the subscale mean scores of females and males showed that females scored higher on all subscales, but only one had a significant difference between the means with the level of significance set at .01 as shown in Table 4.2. Females did have a statistically significant higher Career Decision Self-Efficacy than males in the subscale of Occupational Information given that  $t_{(195)} = 7.93$ ,  $MSe = .353$ ,  $p = .005$ ,

and  $d = .49$ . The effect size using Cohen's  $d$ , ranged .12 - .49 which is small to medium (Cohen, 1988).

**Table 4.2 Career Decision Self-Efficacy and Gender**

Demographics	Male		Female					
Number	44		151					
Percent	22.6		77.4					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Total Score	4.01	0.55	4.20	0.54	4.44	190	.037	.37
Self-Appraisal	4.15	0.56	4.32	0.56	3.24	192	.074	.29
Occupational Information	3.96	0.58	4.25	0.60	7.94	194	.005	.49
Goal Selection	4.16	0.59	4.22	0.59	0.37	192	.543	.12
Planning	3.94	0.69	4.20	0.59	6.60	194	.011	.42
Problem Solving	3.82	0.60	4.04	0.68	3.88	194	.050	.35

### Age

With the significance level set at .01, ANOVAs were used to compare the age groupings. A significant difference was found with the age groupings in the Total Score and two subscales; Goal Selection and Problem Solving. These differences can be observed in Table 4.3.

Since there was a significant  $F$ , Tukey's post hoc multiple comparison was used to determine the groups that were different. The results showed that the age group of 28-58 years had higher means in the Total Score and all five of the subscales (Self-appraisal, Occupational Information, Goal Selection, Planning, and Problem Solving). Even after placing the cut at a conservative age of 28 for the oldest group, the group of students ranging from 28-58 years were still discovered to have scored higher in the Total Score and all five subscales, but only showed a statistically significance difference in two of them (Goal Selection and Problem Solving). Levene's Test for Equality of Variances ranged from .118 and .860

indicating that the assumption of homogeneity was established. The effect size using omega squared ranged from .042 to .074, all of which are small to medium (Keppel & Saufley, 1980).

**Table 4.3 Career Decision Self-Efficacy and Age Groups**

Demographics	18-20		21-22		23-27		28+					
Number	56		54		36		47					
Percent	29		28		18.7		24.3					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>p</i>	$\omega^2$
Total Score	4.01	0.57	4.14	0.52	4.11	0.51	4.43	0.52	5.46	3, 185	.001	.066
Self-Appraisal	4.13	0.62	4.30	0.48	4.22	0.53	4.49	0.55	3.81	3, 187	.011	.042
Occupational Information	4.06	0.62	4.15	0.53	4.14	0.58	4.44	0.63	3.24	3, 189	.011	.042
Goal Selection	4.06	0.60	4.16	0.57	4.15	0.61	4.52	0.47	6.08	3, 187	.001	.074
Planning	4.06	0.65	4.11	0.57	4.04	0.57	4.41	0.61	3.84	3, 189	.011	.042
Problem Solving	3.81	0.65	3.96	0.70	4.00	0.56	4.27	0.64	4.39	3, 189	.005	.043

## Ethnicity

One-way ANOVAs were also conducted on ethnicity and no significant *F* values were found. This implies that there were no significant differences of Career Decision Self-Efficacy among the ethnic groups. Levene's Test for Equality of Variances ranged from .016 and .250 indicating that the assumption of homogeneity was violated in the Total Score and three subscales (Occupational Information, Goal Selection, and Planning). Because the violation was found, a robust test of equality means were observed. Both Welch and Brown and Forsythe ranged from .11 to .51 indicating *F* ratio was found to not be significant. The effect size using omega squared ranged from .000 to .012 and all effect sizes were absent to small (Keppel & Saufley, 1980). Table 4.4 presents these results.

**Table 4.4 Career Decision Self-Efficacy and Ethnicity**

Demographics	White		Hispanic		American Indian		Black		Asian					
Number	88		84		9		6		4					
Percent	46.1		44		4.7		3.1		2.1					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>p</i>	$\omega^2$
<b>Total Score</b>	4.16	0.56	4.13	0.55	4.31	0.43	4.62	0.21	4.13	0.81	1.23	4, 183	.343	.005
<b>Self-Appraisal</b>	4.13	0.62	4.28	0.58	4.50	0.52	4.75	0.20	4.33	0.76	1.28	4, 184	.274	.012
<b>Occupational Information</b>	4.20	0.66	4.17	0.57	4.27	0.50	4.61	0.20	4.15	0.68	0.92	4, 184	.509	.003
<b>Goal Selection</b>	4.20	0.58	4.18	0.61	4.27	0.54	4.68	0.23	4.15	0.97	1.02	4, 186	.346	.000
<b>Planning</b>	4.16	0.67	4.11	0.60	4.23	0.50	4.71	0.21	4.27	0.78	1.75	4, 189	.441	.009
<b>Problem Solving</b>	4.02	0.66	3.94	0.67	4.26	0.45	4.33	0.48	3.75	0.90	0.98	4, 186	.433	.004

### Household Financial Source

Career Decision Self-Efficacy and Household Financial Source (family versus self) was computed by a comparison of means utilizing independent *t* tests to determine if a relationship existed. Levene's Test for Equality of Variances ranged from .261 and .926 indicating that the assumption of homogeneity was determined for Household Financial Source. The comparison of the subscale mean scores of financial source family and themselves showed that if they identified themselves as their primary financial source, they scored higher on all subscales. In addition, significant difference between the means with the level of significance set at .01 was detected in the Total Score and three of the five subscales (Self-Appraisal, Goal Selection and Problem Solving) as shown in Table 4.5. Those participants who had their financial source as themselves did have a statistically significant higher Career Decision Self-Efficacy than those whose family was their financial source. The effect size using Cohen's *d*, range .33 - .45 is small (Cohen, 1988).

**Table 4.5 Career Decision Self-Efficacy and Household Financial Source Household Financial Income**

Demographics	Yourself		Family					
Number	119		76					
Percent	61		39					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Total Score	4.25	0.54	4.01	0.54	9.31	190	.003	.45
Self-Appraisal	4.38	0.52	4.14	0.59	8.44	192	.004	.42
Occupational Information	4.26	0.60	4.06	0.59	5.17	194	.024	.33
Goal Selection	4.31	0.55	4.05	0.61	9.11	192	.003	.44
Planning	4.23	0.59	4.01	0.64	5.85	194	.017	.35
Problem Solving	4.09	0.66	3.83	0.63	7.22	193	.008	.40

One-way ANOVAs were conducted on Household Financial Income, and data revealed that no significant *F* values were found. This indicates that there were no significant differences of Career Decision Self-Efficacy among the Household Financial Income groups. As shown in Table 4.6, the effect size using omega squared ranged from .01 to .02 and all effect sizes were small (Keppel & Saufley, 1980). Levene's Test for Equality of Variances ranged from .084 and .521 indicating that the assumption of homogeneity was met.

**Table 4.6 Career Decision Self-Efficacy and Household Financial Income**

Demographics	0-20,000		20,001-30,000		30,001-40,000		40,001-60,000		60,001-100,000		
Number	70		22		19		29		22		
Percent	36.3		11.4		9.8		15		11.4		
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Total Score	4.13	0.52	4.19	0.68	4.41	0.47	4.07	0.54	3.98	0.64	
Self-Appraisal	4.27	0.54	4.31	0.66	4.53	0.53	4.17	0.57	4.12	0.64	
Occupational Information	4.15	0.58	4.18	0.76	4.44	0.54	4.10	0.61	4.02	0.63	
Goal Selection	4.20	0.58	4.17	0.66	4.52	0.47	4.20	0.56	4.01	0.68	
Planning	4.12	0.56	4.14	0.75	4.39	0.54	4.07	0.66	3.99	0.70	
Problem Solving	3.94	0.67	4.05	0.72	4.27	0.52	3.92	0.67	3.74	0.73	
Demographics	100,000+										
Number	31										
Percent	16.1										
Subscales	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>p</i>	$\omega^2$					
Total Score	4.29	0.48	1.79	5, 183	.118	.02					
Self-Appraisal	4.39	0.45	1.56	5, 185	.174	.01					
Occupational Information	4.37	0.52	1.74	5, 187	.128	.02					
Goal Selection	4.23	0.58	1.60	5, 185	.163	.02					
Planning	4.30	0.59	1.35	5, 187	.246	.01					
Problem Solving	4.16	0.61	1.93	5, 187	.092	.02					

### Children or No Children

Comparison of means utilizing independent *t* tests were implemented to determine if a relationship existed between Career Decision Self-Efficacy and whether the participants reported having children or not. The comparison of the subscale mean scores that indicated whether the participants had children or not revealed that participants that said yes to having children have a statistically significantly higher Career Decision Self-Efficacy than participants who do not have children in the Total Score and all five of the subscales. These are also presented in Table 4.7. Levene's Test for Equality of Variances ranged from .063 and .438 indicating that the assumption of homogeneity was determined for this demographic.



**Table 4.7 Career Decision Self-Efficacy and Rather Participants Have Children or Not**

Demographics	Children		No Children						
Number	59		136						
Percent	30.3		69.7						
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>	
Total Score	4.37	0.47	4.07	0.56	12.77	189	.000	.58	
Self-Appraisal	4.46	0.49	4.21	0.57	8.30	191	.004	.47	
Occupational Information	4.36	0.55	4.11	0.61	7.39	193	.007	.43	
Goal Selection	4.45	0.50	4.11	0.59	15.12	191	.000	.64	
Planning	4.35	0.56	4.06	0.62	9.39	193	.003	.49	
Problem Solving	4.22	0.55	3.89	0.68	10.44	193	.001	.53	

### SES Disadvantaged or Non-disadvantaged

Comparisons of means utilizing independent t tests were implemented to determine if a relationship existed between Career Decision Self-Efficacy and socio-economic status (SES). The comparison of the subscale mean scores of disadvantaged SES and non-disadvantaged SES did not show much significance as can be seen in Table 4.8. Levene's Test for Equality of Variances ranged from .099 and .968 indicating that the assumption of homogeneity was met. The effect size using Cohen's *d*, ranged from .00 - .12 which is also observed as small (Cohen, 1988).

**Table 4.8 Career Decision Self-Efficacy and SES Disadvantaged and Non-disadvantaged**

Demographics	Disadvantaged		Non-disadvantage						
Number	99		94						
Percent	51.3		48.7						
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>	
Total Score	4.17	0.53	4.15	0.57	.059	187	.808	.04	
Self-Appraisal	4.30	0.56	4.27	0.57	.136	189	.713	.05	
Occupational Information	4.18	0.59	4.21	0.62	.153	191	.696	.05	
Goal Selection	4.24	0.58	4.17	0.60	.625	189	.430	.12	
Planning	4.15	0.59	4.15	0.66	.019	191	.891	.02	
Problem Solving	3.99	0.65	3.99	0.65	.000	191	.998	.00	

## Credits – Year in School

One-way ANOVAs were conducted on credits earned, and data revealed that no significant *F* values were found. From Table 4.9, it is indicated that there were no significant differences of Career Decision Self-Efficacy among the credits earned groups. The effect size using omega squared ranged from .010 to .030 and all effect sizes ranged from absent to small (Keppel & Saufley, 1980). Levene’s Test for Equality of Variances ranged from .083 and .996 indicating that the assumption of homogeneity was determined for year in school.

**Table 4.9 Career Decision Self-Efficacy and Credits Earned – Year in School**

Demographics	Freshmen/ Sophomore		Junior		Senior		Post BA/BS						
Number	30		74		77		14						
Percent	15.4		39.5		37.9		7.2						
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>p</i>	$\omega^2$	
Total Score	3.92	0.58	4.17	0.54	4.21	0.52	4.39	0.58	3.01	3, 187	.032	0.03	
Self-Appraisal	4.12	0.59	4.26	0.59	4.35	0.50	4.45	0.63	1.61	3, 189	.188	0.01	
Occupational Information	3.93	0.65	4.22	0.60	4.22	0.58	4.40	0.57	2.57	3, 191	.056	0.02	
Goal Selection	4.01	0.62	4.18	0.60	4.29	0.51	4.37	0.81	2.07	3, 189	.106	0.02	
Planning	3.94	0.72	4.14	0.61	4.19	0.57	4.41	0.61	2.09	3, 191	.103	0.02	
Problem Solving	3.73	0.65	4.03	0.61	4.00	0.72	4.33	0.52	2.99	3, 191	.032	0.03	

## Times of Major Change

One-way ANOVAs were conducted on the times that the participants changed majors, and no significant *F* values were found. This indicates, as will be seen in Table 4.10, that there were no significant differences between Career Decision Self-Efficacy among the groups based on times that the participants changed their major. The effect size using omega squared ranged from .000 to .02 and all effect sizes were absent to small (Keppel & Saufley, 1980). Levene’s Test for Equality of

Variances ranged from .212 and .539 indicating that the assumption of homogeneity was met.

**Table 4.10 Career Decision Self-Efficacy and Times of Major Change**

Demographics	Never		1-2		3+					
Number	76		97		22					
Percent	39		49.7		11.3					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>p</i>	$\omega^2$
Total Score	4.26	0.56	4.08	0.56	4.21	0.43	2.36	2, 188	.098	0.01
Self-Appraisal	4.41	0.56	4.20	0.58	4.30	0.43	3.12	2, 190	.047	0.02
Occupational Information	4.28	0.59	4.09	0.62	4.34	0.52	2.93	2, 192	.056	0.02
Goal Selection	4.34	0.58	4.13	0.61	4.11	0.48	3.27	2, 190	.040	0.02
Planning	4.25	0.63	4.04	0.62	4.27	0.50	3.11	2, 192	.047	0.02
Problem Solving	4.07	0.72	3.93	0.64	4.01	0.57	1.07	2, 192	.344	0.00

## GPA

One-way ANOVAs were used to compare the GPA groupings and a significant difference was found in the age groupings in the Total Score and three of the subscales, (Self-Appraisal, Occupational Information, and Planning). This can be observed in Table 4.11. Since there was a significant *F*, Tukey’s post hoc multiple comparison was used to determine which of the groups were different. The results showed that both the GPA groups 3.00-3.49, and 3.5 +, were significantly higher in Career Decision Self-Efficacy than the group 2.99 and below, in Total Score, as well as the subscales Self-Appraisal, and Planning. In the subscale of Occupational Information, the GPA group 3.5+, was significantly higher than the 2.99 and Below category. Levene’s Test for Equality of Variances ranged from .222 and .911 indicating that the assumption of homogeneity was determined for GPA. The effect size using omega squared ranged from .04 to .06 all of which are small to medium (Keppel & Saufley, 1980) as can be seen in Table 4.11.

**Table 4.11 Career Decision Self-Efficacy and GPA**

Demographics	< 2.99		3.00 - 3.49		3.50+					
Number	44		79		72					
Percent	22.6		40.5		36.9					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>p</i>	$\omega^2$
Total Score	3.93	0.54	4.23	0.53	4.24	0.54	5.36	2, 188	.005	0.04
Self-Appraisal	4.03	0.53	4.35	0.57	4.39	0.52	6.85	2, 190	.001	0.06
Occupational Information	3.95	0.61	4.23	0.62	4.34	0.52	4.76	2, 192	.010	0.04
Goal Selection	4.05	0.57	4.28	0.57	4.23	0.61	2.35	2, 190	.098	0.01
Planning	3.87	0.66	4.20	0.57	4.26	0.60	6.33	2, 192	.002	0.05
Problem Solving	3.75	0.58	4.08	0.65	4.04	0.70	3.89	2, 192	.022	0.03

## Majors

Career Decision Self-Efficacy and Academic Majors were analyzed by a comparison of means utilizing *t* tests to determine if a relationship existed. The comparison, of the subscale mean scores of Elementary, Secondary, HESS (including Health Education, Physical Education Teacher Education, Exercise Science and Athletic Training majors), Other College of Education Majors and Other Majors outside the College of Education revealed that there were no significant differences between Career Decision Self-Efficacy among the college majors as shown in Tables 4.12 – 4.16. The assumptions of homogeneity were assessed using Levene’s Test for Equality of Variances for Elementary, Secondary, and Other College of Education were met. However, HESS (Total Score, Self-Appraisal, Occupational Information, Planning, and Problem solving) and Other Majors outside the College of Education (Goal Selection) did not meet the Homogeneity of variance. SPSS provides an alternative *t* value, and this data was utilized as revealed in Tables 4.14 and 4.16.

**Table 4.12 Career Decision Self-Efficacy and Elementary**

Demographics	Elementary		Non-Elementary					
Number	82		113					
Percent	42.1		57.9					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Total Score	4.25	0.55	4.09	0.54	4.08	189	.045	.29
Self-Appraisal	4.38	0.54	4.22	0.57	3.91	191	.050	.29
Occupational Information	4.30	0.60	4.11	0.60	4.43	193	.037	.30
Goal Selection	4.31	0.55	4.14	0.61	4.01	191	.047	.29
Planning	4.22	0.62	4.10	0.61	1.91	193	.169	.20
Problem Solving	4.10	0.66	3.92	0.66	3.46	193	.065	.27

**Table 4.13 Career Decision Self-Efficacy and Secondary**

Demographics	Secondary		Non-Secondary					
Number	55		140					
Percent	28.2		71.8					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Total Score	4.05	0.56	4.20	0.54	2.80	189	.096	.28
Self-Appraisal	4.21	0.58	4.32	0.55	1.62	191	.205	.19
Occupational Information	4.05	0.63	4.24	0.59	4.03	193	.046	.31
Goal Selection	4.31	0.55	4.24	0.58	0.91	191	.342	.15
Planning	4.22	0.62	4.19	0.60	1.76	193	.187	.21
Problem Solving	3.89	0.68	4.03	0.66	1.69	193	.195	.21

**Table 4.14 Career Decision Self-Efficacy and HESS**

Demographics	HESS*		Non-HESS*					
Number	20		175					
Percent	10.3		89.7					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Total Score	4.12	0.56	4.17	0.57	0.11	189	.666	.09
Self-Appraisal	4.19	0.42	4.30	0.57	0.70	191	.289	.22
Occupational Information	4.18	0.46	4.19	0.62	0.01	193	.920	.02
Goal Selection	4.13	0.49	4.22	0.60	0.48	191	.492	.18
Planning	4.12	0.47	4.15	0.64	0.07	193	.744	.07
Problem Solving	4.01	0.48	3.99	0.68	0.01	193	.912	-.02

\* Includes Health Education, Physical Education Teacher Education, Exercise Science and Athletic Training majors

**Table 4.15 Career Decision Self-Efficacy and Education Other**

Demographics	Education Other*		Non-Education Other*					
Number	20		175					
Percent	10.3		89.7					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Total Score	4.27	0.58	4.15	0.55	0.98	189	.324	-.23
Self-Appraisal	4.42	0.47	4.27	0.57	1.35	191	.246	-.29
Occupational Information	4.28	0.63	4.18	0.60	0.47	193	.492	-.16
Goal Selection	4.35	0.51	4.19	0.60	1.25	191	.265	-.27
Planning	4.34	0.61	4.13	0.62	2.21	193	.139	-.35
Problem Solving	3.98	0.80	3.99	0.65	0.01	193	.944	.02

\* Special Education, Art Education, Early Childhood Education, Family Studies, and Educational Leadership

**Table 4.16 Career Decision Self-Efficacy and Other**

Demographics	Other*		Other*					
Number	20		175					
Percent	10.3		89.7					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Total Score	3.91	0.60	4.19	0.54	5.29	189	.023	.49
Self-Appraisal	4.04	0.70	4.32	0.53	5.14	191	.024	.45
Occupational Information	3.97	0.62	4.22	0.60	3.66	193	.057	.41
Goal Selection	3.89	0.72	4.25	0.56	7.76	191	.029	.59
Planning	3.87	0.59	4.19	0.62	5.26	193	.023	.53
Problem Solving	3.74	0.68	4.03	0.66	3.73	193	.055	.43

\* Majors other than the College of Education

### Parents' Education Level and First Generation College Students

One-way ANOVAs were conducted on Father's/Mother's Education Level and no significant *F* values were found. From Tables 4.17 and 4.18, it can be observed that there were no significant differences for Career Decision Self-Efficacy among the Father's/Mother's Education Levels. The effect size using omega squared ranged from .00 to .20 and all effect sizes were small. The assumption of homogeneity was assessed using Levene's Test for Equality of Variances which showed that this assumption was met in Father's Education and First Generation

College Students. However, in assessing the Mother's Education, the assumption of homogeneity was not evident in Self-Appraisal, Occupational Information, Planning, and Problem Solving. Both Welch and Brown and Forsythe ranged from .22 to .41 indicating *F* ratio was found to not be significant.

Furthermore, participants were divided into two groups: First Generation College Students and Non-First Generation College Students. Comparison of means was implemented to determine if a relationship existed between Career Decision Self-Efficacy and First Generation College Students versus Non-First Generation College Students as tabulated in Table 4.19. The comparison of the subscale mean scores did not show significance. The effect size using Cohen's *d*, ranged .00 - .55 which is small to medium (Keppel & Saufley, 1980).

**Table 4.17 Career Decision Self-Efficacy and Father's Education Level**

Demographics	Did not graduate		High school or GED		Some College		2-Year, AS or Trade		4-Year, BA or BS	
Number	21		56		30		20		34	
Percent	10.8		28.9		15.5		10.3		17.5	
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total Score	4.16	0.62	4.27	0.57	4.13	0.47	4.27	0.46	4.02	0.55
Self-Appraisal	4.27	0.66	4.36	0.58	4.27	0.49	4.46	0.40	4.10	0.62
Occupational Information	4.12	0.71	4.32	0.57	4.19	0.56	4.29	0.58	4.05	0.60
Goal Selection	4.18	0.65	4.32	0.61	4.20	0.53	4.36	0.50	4.13	0.52
Planning	4.13	0.64	4.28	0.62	4.10	0.59	4.17	0.53	3.99	0.63
Problem Solving	4.01	0.62	4.07	0.69	4.00	0.60	4.07	0.64	3.85	0.64
Demographics	Graduate or MA or MS		PhD, JD, MD							
Number	22		11							
Percent	11.3		5.7							
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>p</i>	$\omega^2$		
Total Score	4.06	0.55	4.20	0.64	.974	6,183	.444	0.00		
Self-Appraisal	4.22	0.49	4.40	0.59	1.239	6,185	.288	0.01		
Occupational Information	4.10	0.66	4.22	0.58	.945	6,187	.464	0.00		
Goal Selection	4.05	0.62	4.08	0.84	.971	6,185	.447	0.00		
Planning	4.18	0.65	4.12	0.70	.805	6,187	.567	0.01		
Problem Solving	3.92	0.67	4.17	0.79	.617	6,187	.716	0.01		

**Table 4.18 Career Decision Self-Efficacy and Mother's Education Level**

Demographics	Did not graduate		High school or GED		Some College		2-Year, AS or Trade		4-Year, BA or BS	
Number	19		48		28		25		38	
Percent	9.7		24.6		14.4		12.8		19.5	
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total Score	4.10	0.61	4.30	0.51	4.13	0.55	4.08	0.61	3.95	0.58
Self-Appraisal	4.20	0.73	4.42	0.47	4.27	0.56	4.19	0.61	4.08	0.60
Occupational Information	4.13	0.62	4.34	0.50	4.15	0.66	4.12	0.64	3.97	0.69
Goal Selection	4.07	0.71	4.43	0.53	4.19	0.60	4.13	0.56	4.09	0.62
Planning	4.12	0.52	4.26	0.58	4.12	0.64	4.01	0.72	3.98	0.70
Problem Solving	3.89	0.74	4.06	0.69	4.01	0.60	3.96	0.73	3.73	0.66
Demographics	Graduate or MA or MS		PhD, JD, MD							
Number	30		7							
Percent	15.4		3.6							
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>p</i>	$\omega^2$		
Total Score	4.36	0.42	4.11	0.49	2.30	6,184	.037	0.04		
Self-Appraisal	4.52	0.37	4.21	0.57	2.42	6,186	.028	0.04		
Occupational Information	4.38	0.49	4.17	0.44	2.00	6,188	.067	0.03		
Goal Selection	4.25	0.48	3.97	0.83	1.84	6,186	.094	0.03		
Planning	4.37	0.51	4.08	0.34	1.67	6,188	.130	0.02		
Problem Solving	4.26	0.49	4.11	0.68	2.04	6,188	.062	0.03		

**Table 4.19 Career Decision Self-Efficacy and First Generation College Students and Non First Generation College Students**

Demographics	First Generation		Non-First Generation							
Number	76		119							
Percent	39		61							
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>		
Total Score	4.20	0.57	4.14	0.54	0.50	189	.496	.10		
Self-Appraisal	4.32	0.58	4.26	0.55	0.53	191	.532	.09		
Occupational Information	4.21	0.59	4.18	0.61	0.71	193	.709	.55		
Goal Selection	4.25	0.62	4.19	0.57	0.45	191	.446	.11		
Planning	4.18	0.60	4.13	0.63	0.57	193	.574	.08		
Problem Solving	3.99	0.70	3.99	0.64	0.98	193	.978	.00		

**Role Model**

A comparison of means utilizing *t* tests were implemented to determine if a relationship existed between Career Decision Self-Efficacy and if the participant had a role model or not. The comparisons of the subscale mean scores of the participant



having a role model or not did not show significance as can be observed in Table 4.20. The effect size using Cohen's *d*, range .02 - .32 is small (Cohen, 1988). The Assumption of Homogeneity was violated in the subscale of Role Model. SPSS provides an alternative *t* value, and this data was utilized. Since there was a lack of significance, a qualitative coding of the role models was not conducted.

**Table 4.20 Career Decision Self-Efficacy and Role Model or No Role Model**

Demographics	Role Model		No Role Model					
Number	147		48					
Percent	75.4		24.6					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
Total Score	4.14	0.53	4.24	0.60	1.17	189	.280	.18
Self-Appraisal	4.26	0.56	4.37	0.57	1.21	191	.273	.19
Occupational Information	4.19	0.58	4.19	0.67	0.00	193	.949	.02
Goal Selection	4.17	0.59	4.35	0.60	3.56	191	.061	.31
Planning	4.15	0.58	4.13	0.72	0.05	193	.838	.03
Problem Solving	3.94	0.66	4.15	0.68	3.50	193	.063	.32

### Career Services

A comparison of means utilizing *t* tests were implemented to determine if a relationship existed between Career Decision Self-Efficacy and if the participant had participated or utilized the Career Services Office. The comparisons of the subscale mean scores of if the participant had a role model or not did not show significance. Levene's Test for Equality of Variances ranged from .159 and .991 indicating that the assumption of homogeneity was determined for participants that participated or utilized the Career Services Office. The effect size using Cohen's *d*, range .00 - .23 is small (Cohen, 1988). Because there was a lack of significance, the individual activities/services/programs were not conducted.

**Table 4.21 Career Decision Self-Efficacy and Participated in Career Services**

Demographics	Career Services		Non-Career Services					
Number	63		132					
Percent	32.3		67.7					
Subscales	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>
<b>Total Score</b>	4.21	0.56	4.14	0.55	0.56	189	.455	.12
<b>Self-Appraisal</b>	4.29	0.60	4.29	0.54	0.00	191	.991	.00
<b>Occupational Information</b>	4.26	0.56	4.16	0.62	1.09	193	.299	.16
<b>Goal Selection</b>	4.22	0.61	4.21	0.59	0.01	191	.939	.01
<b>Planning</b>	4.24	0.56	4.10	0.64	2.80	193	.151	.23
<b>Problem Solving</b>	4.04	0.69	3.97	0.65	0.44	193	.508	.10

### Summary

The intent of this study was to gain a better understanding of the Career Decision Self-Efficacy of pre-service teachers to better assist this population in successful career endeavors and to determine interventions if needed. A description of the pre-service teachers was provided using descriptive statistics and demographics (gender, age, ethnicity, financial source of income, income range, socio economic status, whether participant has children, GPA, year in school/credits earned, majors, number of times they have changed their major, parents' educational level and participation in career guidance experiences at The University of New Mexico or other educational institutions). In addition, the Career Decision Self-Efficacy of pre-service teachers was assessed using the Career Decision Self-Efficacy Scale consisting of Total Score, and five subscales: Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem Solving.

Overall, there were differences of means in five demographics: gender, age, financial source of income, whether the participants have children or not, and GPA.

The results not only provided a descriptive picture of the participants, the results provided statistical significances that assist in the understanding the development of Career Decision Self-Efficacy and possible interventions that can be implemented to better support pre-service teachers. In Chapter V, a discussion of these results along with implications of these findings, limitations of the study and suggestions for further research.

## **Chapter V**

### **Discussion**

#### **Summary of Study**

The purpose of this study was to identify the Career Decision Self-Efficacy needs of pre-service teachers at a major southwest university in order to better serve this population in the future. This study focused on pre-service teacher's demographics and Career Decision Self-Efficacy measured by the Career Decision Self-Efficacy (CDSE). The CDSE consists of five subscales: Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem Solving.

The selected participants were undergraduate students in two Educational Psychology classes, EDPY 303 – Human Growth and Development and EDPY 310 – Learning in the Classroom, required curriculum for the teacher education program at the University of New Mexico in Albuquerque, New Mexico. 195 participants completed the demographic questionnaire and the CDSE Scale. Descriptive statistics were used to analyze and describe the participants. Comparisons of mean scores were used to determine if a relationship existed between the subscales and Total Score of the CDSE and the demographic characteristics.

#### **Summary of Findings**

Of the 195 participants, the majority were female (77%), between the ages of 18-22 years (56%), and white (45%) or Hispanic (43%). The majority of participants (61%) reported that they were the primary source of household income. Forty-Eight percent of the household incomes were less than \$30,000, (70%) did not have children, and (51%) were determined to be socio-economically disadvantaged using

the Federal Free and Reduced Lunch formula. Elementary and secondary education majors accounted for (70%) of the sample, and (77%) were junior or senior level students. The participants reported that (77%) of them had a GPA greater than 3.0, and (50%) had changed their majors 1-2 times. Participants were determined to be first generation college students if neither their mother nor father had finished a college degree. First generation college students accounted for (39%) of the sample and of these, (55%) of the fathers and (49%) of the mothers did not have a college degree. The majority of participants (75%) had role models, while only (32%) of the participants reported utilizing the Office of Career Services.

Significance alpha was set at .01 to minimize the possibility of type 1 error. Even at a conservative alpha, statistically significant findings were evident in this study. Utilizing independent *t*-tests, significance was apparent in several demographics. This study indicated that females have significantly higher Career Decision Self-Efficacy than males in the Occupational Information subscale. With regard to household financial source (themselves or parent/family), the participants that indicated that they, themselves were the primary source of income were significantly higher in Career Decision Self-Efficacy in the Total Score, Self-Appraisal subscale, Goal Selection and Problem Solving. The participants who had children were significantly higher than those who did not have children in the Total Score and all subscales.

This study determined that in the demographic of age, there was a significant difference in Total Score. Participants were 28+years was significantly higher in Career Decision Self-Efficacy than those who were 21-22 years of age. For goal

Selection, participants who were 28+ years of age scored higher than participants who were 21-22 years of age and 23-27 years of age and in Problem Solving. Participants who were 28+ years of age scored higher than those who were 21-22 years of age. In the demographic of GPA, significance was apparent in the Total Score, Self-Appraisal subscale, Occupational Information subscale, and Planning subscale. GPA groups 3.00-3.49 and 3.5+ were significantly higher in Career Decision Self-Efficacy than the lower GPA group < 2.99 in Total Score, Self-Appraisal, and Planning. In the subscale of Occupational Information, the GPA group 3.5 + had significantly higher scores than the < 2.99 group.

### **General Conclusions**

Overall, the pre-service teachers who participated in this study self-identified a favorable level of Career Decision Self-Efficacy. The means on the Total Score (4.2 out of 5.0) and subscales (3.9 to 4.3 out of 5.0) indicated that the pre-service teachers in this study have a positive level of confidence in their abilities to make and execute career endeavor activities and decisions. This will be important as groups of students leave college and begin to compete for jobs in the field for which they have trained. However, comparing demographic means, significant findings support the need for interventions for a number of groups.

### **Conclusions for Gender**

Females scored higher than males in Total Score and every subscale. Previous studies (Luzzo, 1993; Wilson, 2000) did not find significance between gender, and it was hypothesized that this study would not find significance as well. Females typically demonstrate lower Career Decision Self-Efficacy in traditional

male careers and math and engineering related careers (Betz & Hackett 1983; Hackett, 1985; Hackett & Betz 1989). Females were identified as having more Career Decision Self-Efficacy in working with people and occupations requiring social interactions (Lucas et al., 1997). This may explain why the females in this study have higher Career Decision Self-Efficacy than males as education is considered a traditional female occupation dealing with people and social interactions. However, in a study of Career Decision Self-Efficacy in college seniors, females were higher than males in all subscales of the CDSE (Stacy, 2003). Wang and Parker, (2011) reports that females are surpassing males in record numbers in college admissions, and females report higher satisfaction in their college education. With this said, it is possible that the Career Decision Self-Efficacy of women has increased in the past two decades. This study indicated that males pursuing educational majors may benefit from more Occupational Information interventions.

### **Conclusions of Age**

Age seems to affect career maturity and Career Decision Self-Efficacy. Participants who identified as 28+ years of age group had higher Career Decision Self-Efficacy in all subscales than < 20 years of age group. This is not a surprise because developmentally, people in their late twenty's consists of identity achievement and begin to decide on a definite adult path and living enough time to search and tryout various options (Erickson, 1963). Identify markers of adulthood in American Society include marriage, having children, and accepting responsibility for one's actions (Arnett, 2000, 2001). Levinson (1978,1996) described this stage (age 28-33) as Age 30 Transition characterized by life transitions. During the

development in the late twenties and early thirties, one's intelligence is focusing on long-term goals that consist of career, family and society (Erickson, 1963). This coincides with the source of financial income as 91.5% of the 28+ years of age group were their own source of income. Full-time employment and being financially responsible are also markers of adulthood (Arnett, 2000, 2001).

### **Conclusions for Income Source**

The pre-service teachers who indicated they themselves were their primary source of income scored higher in Career Decision Self-Efficacy than those whose income was generated by their family, statistically significant in the Total Score and three subscales (Self-Appraisal, Goal Selection, and Problem Solving). Autonomy and self-sufficiency and the degree of financial independence is achieving separation from parents, and this maturity builds confidence in making good decisions. This developmental process sets the stage for basic ego structures that includes identity, morality and career goals creating purpose for taking life seriously (Newman & Newman, 2003). As with age, being the primary source of income is a maturity that builds experience and perhaps motivation both intrinsic as well as extrinsic (the need for money for example). Similar to the demographic of age and financial source of income, although not significant at an alpha of .01, this study did show that participants with Post BA/BS had higher Career Decision Self-Efficacy than the freshmen/sophomore group in Total Score and the subscale of Problem Solving. Another factor in human development and maturity is being responsible for another person.



### **Conclusions for Children Verses No Children**

The pre-service teachers that have children were significantly higher in Career Decision Self-Efficacy in the Total Score and all five of the subscales. The decision to have a child is an enormous commitment as the responsibility of caring for a child and financial commitment is life changing (Feldman, 2005). Typically, having a child changes one's friendships, social life, and perspective on day to day activities. The means to care for your child and becoming a role model can become a priority which inspires maturity as well as career maturity as in this study. It would not be recommended to become a parent to increase Career Decision Self-Efficacy. Instead, there is another more academic predictor that can contribute to Career Decision Self-Efficacy such as GPA.

### **Conclusions for GPA**

As anticipated, a higher GPA is a good predictor of Career Decision Self-Efficacy. In the Total Score and subscales of Self-Appraisal and Planning, a GPA of 3.00-3.49 and a GPA of 3.5 and above were significantly higher than 2.99 and below. In the subscale of Occupational Information, a GPA of 3.5 and above was significantly higher than GPA of 2.99 and below. Not significant at an alpha of .01, participants who never changed their major had higher Career Decision Self-Efficacy than those who changed their major 1-2 times in the subscales of Self-Appraisal, Goal Selection and Planning, but there were no differences in the means of for 3+ times changers.

### **Conclusions for Ethnicity, SES, and Income**

In regards to ethnicity, SES, and income, it is encouraging to note that there was not any significance what so ever in these groups. Although these finding were not predicted, there may be interesting circumstances that make the findings worthy of discussion. As the majority of students in this study were juniors and seniors who already selected a career choice, resilience theory may take part in the absence of significant results in these demographics. Educational resilience is the increased probability of success in academics as well as various life accomplishments regardless of difficulties induced by past experiences, environmental issues or conditions (Wang, Haertel & Walberg, 1994). If these experienced students were ever affected by adversity or pressures due to these demographics, resiliency may have assisted in overcoming obstacles or difficult situations. McMillan and Reed (1994) reported that resilient students choose to be successful and report higher self-efficacy in regards to academics. With this said, the ability to prevail and navigate difficulties or hardships may provide additional problem solving and planning skills that support career decision self-efficacy.

### **Conclusions for Parents Education Level and Role Models**

The education level of Father and Mother did not impact the Career Decision Self-Efficacy of the pre-service teachers. First generation college students were hypothesized to have lower Career Decision Self-Efficacy, but this was not true in this study. Perhaps college juniors and seniors, who not only decided on a career, have learned to navigate the university and college system and this is not an issue at this position in their education. Parents often encourage their children to be

successful and to exceed their accomplishments. Therefore, in addition to learning to plot the course of the educational system, resilient students frequently have parents who promote autonomy and resist in insisting on conformity (Dai & Feldhusen, 1996). Experienced students who are in the junior and senior years in college may have found that they have resilient attributes supported by encouraging parents serving as role models.

Related findings showed that having a role model or not having a role model produced no significant findings most likely for similar reasons. At first, the lack of significant findings in the demographic of role model was surprising as role models are typically sourced as promoting career success (Lent, Brown & Hackett, 2000). More recent research on role models indicates that the definition and impact could be changing to focus on possibilities rather than to define an identity from leaders, educators, or coaches who are admired. Role Model defined, "Cognitive construction based on the attributes of people in social roles an individual perceives to be similar to him or herself to some extent and desires to increase perceived similarity by emulating those attributes" (Gibson, 2004), could assist in explaining why having a role model may not be as critical to students who are established in a career decision.

### **Conclusions for Career Services**

Whether or not a participant utilized the Office of Career Services was not significant. On the other hand, this may not be the best determination of the effectiveness of this office and other studies focused directly on these services should be conducted.

## **Limitations**

Limited to pre-service teachers taking educational psychology classes for the prescribed completion of their degree from a public southwest university, this study is a sample of a specific population. As a sample, the information of this study infers that this information represents the population. However, some members of this population did not have a chance of being selected for this study. The Educational Psychology Participation Pool is composed of undergraduate students from two required educational psychology classes required for the completion of a teacher education degree. This study focused on pre-service teachers and may not represent the population as a whole. In addition, the students who chose to write the research paper instead of participating in the study for the inconvenience of the dates and times or other unknown reasons were not included in this study. The sample from this study was a volunteer sample that can be prone to self-selection bias. As sampling error can be a limitation, self-rating assessments can be a limitation as well.

The data of this study were self-reported and the demographic questionnaire data was taken at face value. Inaccuracies in the data could include memory issues, misunderstanding of the questions, systematic response distortions, intentional deception, and perceptual and attitudinal issues which raise concerns regarding the validity and reliability of the results. Other self-rater concerns are a conscious or unconscious effort of the participant to create a socially desired response or represent themselves in favorable light or “faking good.” Even though this study was confidential and identification of the participant could not be associated with the

results, participants may answer the demographic questionnaire the way that they want their instructor to see them. Developmental or mental disorders can also affect the self-rate answers. Varying degrees of understanding the questions will depend on their understanding of the material and cultural bias can influence the question or how they perceive themselves

Asking participants about their income or credits may be information that they estimated as they were not warned that they needed to know this information before the research. This lack of information could affect the results of the study. Another limitation was that the participants were not asked if they were pursuing a second career. This may have been an interesting demographic to inquire as nontraditional students returning to train for a new career may shed light on Career Decision Self-efficacy of pre-service teachers.

### **Future Research**

The results of this study expand and contribute to the existing body of research by showing statistical significance between CDSE and demographics: gender, age, financial source of income, children (yes or no), and GPA. As for GPA, the results are typical and predictable from previous research (Taylor & Betz, 1983; Lent, Brown & Larkin, 1984; Luzzo, 1993; Peterson; 1993 Mau, 2000; Hampton, 2006). The contributing factor between age 28 and above, having children and being your own source of financial income is responsibility and maturity. According to this study, these three factors were significant when determining higher Career Decision Self-Efficacy. Does responsibility and maturity contribute to high Career Decision Self-Efficacy? Utilizing a maturity and responsibility instrument such as or similar to

The Psychosocial Maturity Inventory developed by Greenberger, E., Josselson, R., Knerr, C., & Knerr, B. in 1974 or WORKING (Assessing Skills Habits and Style) developed by Miles, C. & Grummon, P. in 1996 to assess positive work ethic such as personal habits, skills, and styles to see if there is a correlation between Career Decision Self-Efficacy and responsibility (maturity) could be conducted.

As for gender, it would be interesting to duplicate the studies conducted by Beta & Hackett in 1983 that found that women possess less self-efficacy in the field of math and science or Hackett, 1985 that postulate that gender and prior math preparation directly influences college major decisions to see if this is the present case. In addition, future research on women from underrepresented minorities in regards to Science, Technology, Engineering and Mathematic (STEM) careers and Career Decision Self-Efficacy would be of value to determine the possible needs of this population. Further research should be conducted to see if female's Career Decision Self-Efficacy is increasing as more women are attending college and are satisfied with their educational experience. Stacy (2003) found females had higher Career Decision Self-Efficacy than males by measuring college seniors across a variety of college majors.

In regards to SES, income, ethnicity, and first generation college students, assessing freshmen and sophomore students who may be more impacted by these demographics would be needed. A longitudinal study assessing the same students during their freshmen year, then sophomore year, junior year and senior year to see if this Career Decision Self-Efficacy increases or impacts graduation could be conducted.

Teacher demographics of the past were predominately white and middle class; however, this may be shifting (Van Galen, 2010). The demographics of this study regarding SES, income, ethnicity, and first generation college students show that this may indeed be the case. A shift in social status may be advantageous for students to identify with teacher of a similar background. A concern for the academic field is that teaching may be viewed as an entry career or stepping stone to a more lucrative career. Future research on social class of pre-service may be warranted.

Other research could compare different teacher preparation programs in different regions of the United States to see if there is a difference in Career Decision Self-Efficacy confidence levels. Additional demographics that need to be explored are students with disabilities and gay/lesbian/bisexual/transvestite populations to ensure that they are indeed receiving appropriate interventions if needed. By implementing future studies, the results of this study can be further investigated and have significance in assisting future findings and interventions.

In conclusion, the significance of this study was to identify Career Decision Self-Efficacy needs of pre-service teachers by describing the participants and statistically analyzing by comparing the means to their responses to the CDSE. College admissions and enrollment offices may be able to implement information from this study. Practical applications of this study may provide insight that older students, students with children, and independent students with full-time jobs may be secure students in respect to elevated Career Decision Self-Efficacy. As these students may choose and execute appropriate occupations; be willing to put in the effort to train and attend educational programs; and commit to obtain subsequent

employment. Further research can only benefit pre-service teachers and their future career endeavors.



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## **Appendix A**

### **Informed Consent Form for Participants**

**UNIVERSITY OF NEW MEXICO**

#### **INFORMED CONSENT COVER LETTER FOR ANONYMOUS SURVEYS**

##### **STUDY TITLE**

**CAREER DECISION SELF-EFFICACY OF PRE-SERVICE TEACHERS**

You are being asked to participate in a research study that is being conducted by Lori A. Miller who is the Principal Investigator, and Terri Flowerday from the College of Education – Educational Psychology.

You are being asked to participate in this study because you are a pre-service teacher, and you are taking an educational psychology class. One hundred and fifty students will take part in this study at the University of New Mexico on the main campus at Albuquerque, New Mexico.

Your participation will involve filling out a demographic questionnaire and another questionnaire that will ask you to rate yourself on a scale to questions such as “how much confidence do you have that you could accurately assess your abilities.” The survey should take about 20-30 minutes to complete.

There are no names or identifying information associated with this survey. There are no known risks in this study, but some individuals may experience discomfort when answering questions. All data will be kept for 3 years in a locked file cabinet in Ms. Miller’s office and then destroyed. Your involvement in the study is voluntary, and you may choose not to participate. You can refuse to answer any of the questions at any time. If you choose not to participate in this study, your teacher will be able to provide alternative methods of fulfilling your class research requirement.

The findings from this project will provide information on the career development needs to better serve future teachers in their career endeavors. If published, results will be presented in summary form only.

If you have any questions, concerns or complaints at any time about this research project, Lori A. Miller or her associate Terri Flowerday will be glad to answer and address them at (505) 473-0262. If you have questions regarding your legal rights as a research subject, you may call the UNM Human Research Protections Office at (505) 272-1129.

By returning this survey, you will be agreeing to participate in the above described research study.

Thank you for your consideration.

Sincerely,

Researcher’s Name  
Lori A. Miller  
Researcher’s Title  
Ph.D Candidate

## Appendix B

### IRB Determination of Exempt Status



THE UNIVERSITY of  
NEW MEXICO

Main Campus Institutional Review Board

Human Research Protections Office

MSC08 4560

1 University of New Mexico~Albuquerque, NM 87131-0001

<http://hsc.unm.edu/som/research/HRRC/>

18-Jan-2012

Responsible Faculty: Terri Flowerday

Investigator: Lori A. Miller

Dept/College: Individual Family Comm Educ IFCE

**SUBJECT: IRB Determination of Exempt Status**

**Protocol #: 12-024**

**Project Title: CAREER DECISION SELF-EFFICACY IN PRE-SERVICE TEACHERS**

**Approval Date: 18-Jan-2012**

The Main Campus Institutional Review Board has reviewed the above-mentioned research protocol and determined that the research is *exempt* from the requirements of Department of Health and Human Services (DHHS) regulations for the protection of human subjects as defined in 45CFR46.101(b) under category 2, based on the following:

1. Exemption Determination Form dated 01-13-12.
2. Study Protocol dated 01-13-12.
3. Informed Consent Cover Letter for Anonymous Surveys version 01-18-12.
4. Demographic Questionnaire Form and Career Decision Self-Efficacy Scale dated 01-13-12.

Because it has been granted exemption, this research project is not subject to continuing review.

Changes to the Research: It is the responsibility of the Principal Investigator to inform the IRB of any changes to this research. A change in the research may disqualify this project from exempt status. Reference the protocol number and title in all documents related to this protocol.

Sincerely,

J. Scott Tonigan, PhD  
Chair  
Main Campus IRB

## Appendix C

### Demographic Questionnaire Form

---

# Demographic Questionnaire Form

---

Please tell me about yourself. Read each question carefully and either fill in the blank or circle in the appropriate response.

1. Gender (Please check the one option that best describes you)
  - Male
  - Female
  
2. Age: \_\_\_\_\_
  
3. Ethnicity: How do you describe yourself? (Please check the one option that best describes you)
  - Hispanic or Latino
  - American Indian or Alaska Native
  - Asian or Asian American
  - Black/African American
  - White, non Hispanic or Latino
  - Other \_\_\_\_\_
  
4. What is your primary source of financial support? (Please use this answer in regards to questions 4 and 5)
  - Parent or Family of Origin
  - Yourself
  
5. Using your response to question 4, what is your annual family income?
  - 0-\$20,000
  - \$20,001-\$30,000
  - \$30,001-\$40,000
  - \$40,001-\$60,000
  - \$60,001-\$100,000
  - \$100,000+
  
6. Using your response to question 4, how many members are in your family including yourself? \_\_\_\_\_
  
7. Do you have children?
  - Yes
  - No

8. How many college credits have you earned?
- 0-30 Credits – Freshmen
  - 31-60 Credits – Sophomore
  - 61-90 Credits – Junior
  - 91-124 Credits – Senior
  - 125 Credits and Above – Post BA/BS
9. How many times did you change your major?
- Never
  - 1 – 2
  - 3 – 4
  - 5 +
10. What is your cumulative college GPA?
- 2.00 – 2.49
  - 2.5 – 2.99
  - 3.0 – 3.49
  - 3.50 +
11. What is your major?
- Elementary Education
  - Secondary Education (If so, please select the endorsement(s) that you are pursuing)
    - Bilingual Endorsement
    - Communicative Arts
    - Earth Science
    - Fine Arts Theatre
    - French
    - German
    - Life Science
    - Mathematics
    - Spanish
    - Physical Science with Chemistry
    - Physical Science with Physics
    - Social Studies
    - TESOL
  - Special Education
  - Art Education
  - Health, Exercise, Sport Science (HESS)
  - Other (Please identify)\_\_\_\_\_

12. What is your father's or male guardian's highest education level?
- Did not graduate from high school
  - High school or GED Graduate
  - Some college, but no degree completed
  - 2-Year, Associate Degree, or Trade Certificate
  - 4-Year, Bachelor's Degree
  - Graduate Degree, Master's Degree
  - Graduate Degree, PhD, JD, MD
13. What is your mother's or female guardian's highest education level?
- Did not graduate from high school
  - High school or GED Graduate
  - Some college, but no degree completed
  - 2-Year, Associate Degree, or Trade Certificate
  - 4-Year, Bachelor's Degree
  - Graduate Degree, Master's Degree
  - Graduate Degree, PhD, JD, MD
14. Do you have a "role model" (a person who has influenced your career and/or education)?
- Yes
  - No
    - Relationship to you\_\_\_\_\_
15. Have you participated in or utilized any of the following career related activities/services/programs offered at The University of New Mexico or other college?  
(check all that apply, and indicate how many times)
- Individual Career Counseling\_\_\_\_\_
  - Standardized Assessment (Myers-Briggs or Strong Interest Inventory)\_\_\_\_\_
  - Resume Workshop\_\_\_\_\_
  - Mock Interviews\_\_\_\_\_
  - Job Fairs\_\_\_\_\_
  - Employment Online Resource\_\_\_\_\_
  - On-Campus Recruiting\_\_\_\_\_

## Appendix D

### Career Decision Self-Efficacy Scale

#### Career Decision Self-Efficacy Scale

Please read each statement carefully below and indicate the degree of confidence that you have in your knowledge and ability to accomplish each of these tasks or activities by using the following scale: No Confidence at All, Very Little Confidence, Moderate Confidence, Much Confidence, or Complete Confidence. Please do so by filling in the correct circle out to the side of the question.

**HOW MUCH CONFIDENCE DO YOU HAVE THAT YOU COULD:**

	Complete Confidence	Much Confidence	Moderate Confidence	Very Little Confidence	No Confidence At All
1. List several majors that you are interested in.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Use the internet to find information about occupations that interest you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Select one major from a list of potential majors you are considering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Make a plan of your goals for the next five years.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Determine the steps to take if you are having academic trouble with an aspect of your chosen major.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Accurately assess your abilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Find information about companies who employ people with college majors in education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Select one occupation from a list of potential occupations you are considering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Determine the steps you need to take to successfully complete your chosen major.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Persistently work at your major or career goal even when you get frustrated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. List several occupations that you are interested in.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Complete Confidence	Much Confidence	Moderate Confidence	Very Little Confidence	No Confidence At All
12. Find information about educational programs in education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Choose a career that will fit your preferred lifestyle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Prepare a good resume.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Change majors if you did not like your first choice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Determine what your ideal job would be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Talk to a faculty member in a department you are considering for a major.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Make a career decision and then not worry about whether it was right or wrong.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Get letters of recommendation from your professors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Change occupations if you are not satisfied with the one you enter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Decide what you value most in an occupation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Ask a faculty member about graduate schools and job opportunities in your major.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Choose a major or career that your parents do not approve of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Get involved in a work experience relevant to your future goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Resist attempts of parents or friends to push you into a career or major you believe is beyond your abilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Complete Confidence	Much Confidence	Moderate Confidence	Very Little Confidence	No Confidence At All
26. Figure out whether you have the ability to successfully take math courses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Describe the job duties of the career/occupation you would like to pursue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Choose a career in which most workers are the opposite sex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Find and use the Office of Career Services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Move to another city to get the kind of job you really would like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Determine the academic subject you have the most ability in.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Find out the employment trends for an occupation in the next decade.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Choose a major or career that will fit your interests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Decide whether or not you will need to attend graduate or professional school to achieve your career goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Apply again to graduate school after being rejected the first time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Determine whether you would rather work primarily with people or with information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Find out about the average yearly earnings of people in an occupation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. Choose a major or career that will suit your abilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Plan course work outside of your major that will help you in your future career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



	Complete Confidence	Much Confidence	Moderate Confidence	Very Little Confidence	No Confidence At All
40. Identify some reasonable major or career alternatives if you are unable to get your first choice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Figure out what you are ready to sacrifice to achieve your career goals and what you are not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. Talk with a person already employed in the field you are interested in.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Choose the best major for you even if it takes longer to finish your college degree.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Identify employers, firms, institutions relevant to your career possibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. Go back to school to get a graduate degree after being out of school 5-10 years.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. Define the type of lifestyle you would like to live.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Find information about graduate or professional schools.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. Choose the major you want even though the job market is declining with opportunities in this field.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Successfully manage the job interview process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. Come up with a strategy to deal with flunking out of college.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>