An examination of the effect of a career exploration course on the career decision self-efficacy of traditional-age undecided college students

Lisa M. Bollman

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A Dissertation

entitled

An Examination of the Effect of a Career Exploration Course on the Career Decision Self-Efficacy of Traditional-age Undecided College Students

By

Lisa M. Bollman

Submitted as partial fulfillment of the requirements for The Doctor of Philosophy degree in Counselor Education

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The University of Toledo

May 2009
An Abstract of a Dissertation

 entitled

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This study investigated the effect of a career exploration course on the career decision self-efficacy of traditional-age undecided college students, utilizing a single group pretest posttest design. The independent variables in this study were research participants’ sex, cultural identification, and reported cumulative grade point average. The dependent variable in this study was career decision self-efficacy, which was measured by the Career Decision Self-Efficacy Scale-Short Form (Betz, Hammond, & Multon, 2005). The research participants were 141 college students enrolled in a 15-week career exploration course at a mid-sized, open enrollment, urban research institution in the Midwest.
A paired samples \( t \)-test revealed that traditional-age college students’ mean career decision self-efficacy total score increased significantly from the pretest, administered at the beginning of a career exploration course, to the posttest, administered at the end of the career exploration course. One-way analyses of variance found no statistically significant differences between the mean pretest career decision self-efficacy total score of study participants for the variables of sex, cultural identification, and reported cumulative grade point average. One-way analyses of variance of the mean total gain score on the posttest of the CDSE-SF found no significant differences in the total mean gain score of research participants for the variables of sex, cultural identification, and reported cumulative grade point average. A Pearson chi-square analysis revealed that a greater number of research participants who dropped out of the study had reported cumulative grade point averages below 2.0 than those participants who completed the study. An independent samples \( t \)-test found the participants who dropped out of the study to have a lower mean pretest career decision self-efficacy total score as measured by the CDSE-SF than those who completed the study.

A major contribution of this study to the literature was the examination of grade point average on career decision self-efficacy. One implication of this study is that career exploration courses may be an effective intervention in increasing career decision self-efficacy of traditional-age undecided college students, and point to the need for interventions that promote career decision self-efficacy for college students with grade point averages below 2.0.
Dedication

This manuscript is dedicated in memory of my grandparents, who are dearly missed, and to my son, Michael, who is dearly loved.
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The college student population is faced with making multiple decisions, from deciding which college to attend, to identifying a major or career path to pursue, to preparing for life after college graduation (Gore, 2005). One particularly challenging task for students who decide to attend college is to choose an academic major or course of study to pursue. According to the 2007 national profile of students who took the American College Test (ACT), 13% of the over one million students who took the ACT were undecided about their academic major, which indicates that college students have the potential to represent a sizable population on college campuses (Retrieved September 16, 2007, from http://www.act.org/news/data/07/pdf/four.pdf). The descriptor “undecided” has been used to describe students who are “unwilling, unable, or not prepared to make educational choices” (Lewallen, 1994, p. 6). The term “undecided” is generally understood in the context of an educational setting, and typically describes a student without a declared academic major or career path.

College and university administrators have taken an interest in the undecided students on their campuses because students who do not have an academic major or career path are less likely to be retained at the institution (Gaffner & Hazler, 2002). Furthermore, undecided college students have reported less satisfaction with the college experience,
greater feelings of inadequacy, and more barriers in their career decision-making processes (Serling & Betz, 1990). College and university administrators have found that parents and state and federal government are demanding greater accountability for the campus services provided to students. In particular, career counselors are asked to assist students in early major selection so that graduation is not delayed (Halasz & Kempton, 2000). The changing economy, coupled with higher unemployment rates and rapidly changing technology contribute to the societal perception that colleges and universities have a primary responsibility for the career education of their student population (Peng, 2001).

One of the ways that colleges and universities have attempted to provide career decision-making assistance to undecided students on a large scale is through the career exploration course. Halasz and Kempton (2000) stated that the availability of career development courses on college campuses has increased over the past 25 years because group interventions allow cost effective dissemination of information to large groups of students. Career exploration courses have thus become a primary career intervention offered by colleges and universities to assist students in resolving career decision-making difficulties (Folsom & Reardon, 2001).

It has been suggested that career decision-making difficulties arise due to the complexity of the career decision-making process (Gati, Krause, & Osipow, 1996). In order to make a career decision, an individual needs to integrate large amounts of information involving the self and the world of work (Gati et al., 1996). One aspect of the self that has been examined in relationship to career decision-making is self efficacy,
which is defined as an individual’s belief in his or her ability to succeed at a given task (Bandura, 1977).

Bandura (1977) hypothesized that self-efficacy beliefs affect behavior, including how much effort will be expended to complete tasks or behaviors, as well as the length of time an individual will continue to persist on task after encountering obstacles. Self-efficacy theory posits that individuals develop self-efficacy beliefs via four primary sources: performance accomplishments, emotional arousal, vicarious learning and modeling, and verbal persuasion (Bandura). According to self-efficacy theory, performance accomplishments have the greatest influence on self-efficacy beliefs, and describe an individual’s successful completion of tasks (Bandura). Emotional arousal refers to the individual’s affective state. Generally, higher levels of anxiety yield lower self-efficacy expectations (Bandura). Vicarious learning and modeling can influence self-efficacy expectations in that observing someone else complete a task successfully tends to raise the observer’s self-efficacy level (Bandura). Finally, verbal persuasion can positively influence self-efficacy beliefs, but does not provide a lasting increase of the individual’s self-efficacy. The individual must accomplish tasks, coupled with verbal persuasion, to develop a lasting sense of self-efficacy.

Bandura’s self-efficacy theory (1977) has been applied to academic and career behavior via Social Cognitive Career Theory (SCCT). According to SCCT, one important variable that explains academic achievement is self-efficacy beliefs, or a student’s confidence in his or her ability to successfully complete educational tasks (Brown, Tramayne, Hoxha, Telander, Fan, & Lent, 2007). SCCT suggests that students successfully graduate from college in part because they have developed strong academic
self-efficacy beliefs via past performance accomplishments, feedback, and modeling (Brown et al., 2007). SCCT posits that these strong academic self-efficacy beliefs lead students to engage in difficult academic tasks rather than avoid them, put effort into their studies, and persist in their academic careers despite encountering occasional academic difficulties (Brown et al., 2007).

Hackett and Betz (1981) were the first to examine self-efficacy within the context of career decision-making, and speculated that the construct of self-efficacy could be used to offer insight specifically into women’s career development. Betz and Hackett (1981) tested their hypothesis, and the results of their study suggested that individuals with low self-efficacy perceptions toward gender non-traditional occupations were less likely to consider gender non-traditional occupations as potential career choices (Betz & Hackett, 1981). Betz and Hackett (1981) coined the term “career decision self-efficacy,” and defined it as an individual’s belief in his or her ability to complete tasks necessary to make career decisions (Taylor & Betz, 1983).

According to Hackett (1995), career decision self-efficacy is a powerful construct that influences the extent to which individuals engage in career exploration behavior. Individuals with confidence in their career decision-making abilities, for example, are more likely to engage in the career exploration behaviors (Hackett). Some examples of career exploration behaviors include completing a self-assessment, conducting an informational interview, or participating in a job shadowing experience. Blustein’s (1989) study provided support for the relationship between career decision self-efficacy and career exploration behavior: in a sample of 106 college students, career decision self-efficacy emerged as a more prominent predictor of exploratory activity than goal
instability, age and gender. The variable of self-efficacy has been found to influence individuals’ level of engagement in the process of career decision-making: the more confidence the individual has in his or her career decision-making abilities, the more likely he or she will engage in tasks necessarily to make a career decision (Betz & Voyten, 1997; Hackett, 1995).

In addition to the engagement in career exploration behaviors, career decision self-efficacy has also been linked to career indecision. Taylor and Betz (1983) examined the relationship between self-efficacy and career indecision, and found that college students who reported lower self-efficacy experienced greater career indecision and reported less confidence about their ability to complete career decision-making tasks. The lack of career decision self-efficacy hindered the development of career decision-making skills for this sample, and thus become a predictive factor of career decision-making difficulties (Taylor & Betz).

In addition to the application to the career decision-making processes of women (Hackett & Betz, 1981), career decision self-efficacy has been examined in relationship to the career development of individuals from culturally diverse backgrounds. Gloria and Hird (1999) suggested that individuals who confront racism on a daily basis would have lower career decision self-efficacy than individuals from the dominant culture.

Gloria and Hird (1999) examined their supposition that individuals who confront racism on a daily basis have lower scores on the Career Decision Self-Efficacy Scale (CDSES). A sample of 589 white students and 98 students of color completed the CDSES. Results of the study indicated that white students with declared majors scored higher on the CDSES than undecided white students, and students of color with and
without declared majors. Experiences with discrimination, harassment, occupational stereotyping, and a lack of culturally similar role models can reduce an individual’s career decision self-efficacy, or the confidence in his or her ability to complete the tasks necessary to make career decisions.

Career decision self-efficacy has been examined in relationship to women and culturally diverse populations, but this researcher was also interested in how collegiate academic achievement might affect students’ career decision self-efficacy. SCCT suggest that self-efficacy beliefs are an important factor in how a student responds to academic obstacles (Brown et al., 2007). College students who have experienced academic difficulties are also considered an at risk population on college campuses (Ishitani & DesJardins, as cited in Lotkowski, Robbins, & Noeth, 2004). Results of a recent study on college student retention indicated that a higher grade point average in the first year of college was associated with a lower drop out rate (Ishitani & DesJardins, as cited in Lotkowski et al., 2004). Therefore, undecided college students who have experienced academic difficulties would seem to be particularly at risk for dropping out of college.

This researcher was interested in the effect of a career exploration course on the career decision self-efficacy of undecided traditional-age college students. Results of previous research indicated that career decision self-efficacy increased for those students enrolled in career exploration courses, yet there is more that can be learned about the effect a career exploration course on the career decision self-efficacy of specific groups of undecided college students.
Background of the Problem

This researcher found four studies (Cox, 1996; Moore, 2003; Oreshnick, 1991; Reese & Miller, 2006) that examined the effect of a career exploration course on the career decision self-efficacy of college students. These studies will be discussed in detail in the literature review, but in brief, each of the four studies examined the effectiveness of a career exploration course on the career decision self-efficacy of college students by administering a career decision self-efficacy instrument at the beginning and end of a career exploration course, and then examining the difference between the mean pretest and the posttest career decision self-efficacy scores. All four studies found that students enrolled in career exploration courses experienced an increase in the career decision self-efficacy. However, there is more to be learned about the effectiveness of a career exploration course on the career decision self-efficacy for undecided college students.

For example, there have been no studies that examined whether initial, or pre-intervention levels of career decision self-efficacy differed for populations of college students based on their sex, their cultural identification, or their academic achievement as measured by grade point average. In addition, Betz and Hackett’s (1981) seminal work on career decision self-efficacy and gender examined women’s self-efficacy beliefs in regard to the pursuit of typically male-dominated careers. This researcher was interested in whether college women had lower initial career decision self-efficacy beliefs than males prior to participating in the career exploration course. In addition, this researcher was interested in whether students from non-dominant cultural backgrounds would have lower initial career decision self-efficacy than students from dominant cultural backgrounds prior to participating in the career exploration course. Finally, this
researcher was also interested in whether college students who had experienced academic difficulty as evidence by a grade point average below 2.0 would have lower initial career decision self-efficacy beliefs than college students with grade point averages at or above 2.0.

Knowledge of a baseline level of career decision self-efficacy for college students based on sex, cultural identification, or grade point average could assist in the implementation of interventions to target the self-efficacy development of that particular population. An examination of the pre-intervention levels of career decision self-efficacy for college students based on sex, cultural identification, and grade point average, in addition to examining the potential change in career decision self-efficacy, is needed.

In addition, the construct of career decision self-efficacy was developed to provide insight into the career development process of women, yet only two of previous studies that investigated the effect of a career exploration course on college student career decision self-efficacy (Cox, 1996; Oreshnick, 1991) examined the effect of study participants’ sex on career decision self-efficacy. Results of the Oreshnick study indicated that women in the sample had statistically larger gains in career decision self-efficacy than the men in the sample, while the Cox study found no significant increase in the career decision self-efficacy of the females in the sample as compared with the males in the sample. Further research is needed on the effectiveness of a career exploration course on the career decision self-efficacy for college women.

Furthermore, the population of culturally diverse students enrolled in higher education has steadily increased. In 2004, students of color accounted for 32% of the total undergraduate enrollment at degree granting institutions, up from 17% in 1976 (National
The previous studies (Cox, 1996; Moore, 2003; Oreshnick, 1991; Reese & Miller, 2006) reported study participant race and ethnicity as part of the sample demographics, but none of the studies specifically examined the affect of study participants’ culture on career decision self-efficacy of students enrolled in a career exploration course.

Furthermore, this researcher was interested in the influence of academic achievement as measured by grade point average on career decision self-efficacy of college students, yet there have been no studies that have directly examined the effect of grade point average on the career decision self-efficacy of undecided college students enrolled in a career exploration course.

Statement of the Problem

There is a need for additional data on the effectiveness of a career exploration course on the career decision self-efficacy of undecided college students. Specifically, it is unclear whether the sex, cultural identification, and grade point average of traditional-age college students affected the baseline levels of career decision self-efficacy for these subgroups. Furthermore, there is a lack of research on the effect of a career exploration course on the career decision self-efficacy of college students from non-dominant cultural backgrounds. Likewise, this researcher could find no studies that have examined the effect of a career exploration course on the career decision self-efficacy of traditional-age college students that have experienced academic difficulty, as measured by grade point average.
Purpose of the Study

The purpose of this study was to examine the effect of a semester-long (15 week) career exploration course offered at a mid-size, public, urban research institution in the Midwest, on the career decision self-efficacy of traditional-age undecided college students. Career decision self-efficacy was measured using the Career Decision Self-Efficacy Scale-Short Form (CDSE-SF) [Betz & Klein, 1996]. Change in career decision self-efficacy was examined by comparing the mean total pretest score on the CDSE-SF with the mean total posttest gain score on the CDSE-SF. The researcher was also interested in whether the mean total pretest career decision self-efficacy score was significantly lower for females than males; whether the mean total pretest career decision self-efficacy score was significantly lower for study participants’ from non-dominant cultures than for study participants’ from the dominant culture; and whether the mean total pretest career decision self-efficacy score was significantly lower for study participants with grade point averages below 2.0 than for study participants with grade point averages at or above 2.0.

This study also examined whether the mean total posttest career decision self-efficacy gain score was significantly higher for female study participants than for male study participants; whether the mean total posttest career decision self-efficacy gain score was significantly higher for study participants from non-dominant cultures than for study participants from the dominant culture; and whether the mean total posttest career decision self-efficacy gain score was significantly higher for study participants with grade point averages below 2.0 than for study participants with grade point averages at or above 2.0.
Significance of the Study

This study contributed to the career decision self-efficacy body of literature in several ways. First, this study examined whether pretest levels of career decision self-efficacy differed for study participants based on the variables of sex, cultural identification, and grade point average. An understanding of baseline levels of career decision self-efficacy can assist counselors and career exploration course instructors in their work with students. Students with low career decision self-efficacy are at a greater risk for failing to engage in career exploration behaviors (Betz & Voyten, 1997; Blustein, 1989; Hackett, 1995). Interventions could be implemented that target students with lower career decision self-efficacy with the goal increasing student engagement in career counseling or the career exploration course.

Furthermore, this study also examined whether study participants’ cultural identification and grade point average affected both the mean pretest total career decision self-efficacy score and the mean posttest career decision self-efficacy total score on the CDSE-SF. This researcher found no other studies that specifically examined these two variables in relationship to career decision self-efficacy and career exploration courses. Colleges and universities seek to retain students. Undecided students are one population of students that are less likely to be retained at colleges and universities (Gaffner & Hazler, 2002), and even through college enrollment of students from non-dominant cultures continues to increase, students from non-dominant cultures are also less likely to be retained at post-secondary institutions. For example, in 2004, the graduation rate for white students seeking a bachelor’s degree at a public institution was 58% (Knapp, Kelly-Reid, & Whitmore, 2006). While the graduation rate of Asian/Pacific Islander students
surpassed that of the cohort of white students, the graduation rate for Black students was only 40%, and the graduation rate for Hispanic/Latino/a students was 45% (Knapp et al., 2006). This study provides additional data regarding the effect of a career exploration course on the career decision self-efficacy college students from non-dominant cultures.

Furthermore, even through students with low grade point averages are at greater risk for dropping out of college (Ishitani & DesJardins, as cited in Lotkowski et al., 2004), this researcher found no research involving the examination of the affect of a college student’s grade point average on their career decision self-efficacy. This study contributes some initial data that will hopefully serve as an impetus for future research.

Finally, this research generated some unexpected data about a group of students involved in the study who completed the pretest of the CDSE-SF but who did not complete the posttest of the instrument. The research participants who did not complete the student were found to be statistically different on two key variables examined in this study than those research participants who completed the study. A detailed discussion of the results of the statistical analyses that were conducted on the pretest data for this subset of study participants will be provided in Chapter Four, and the implications of these results will be discussed in detail in Chapter 5.

**Research Questions**

The following research questions were addressed in this study:

1. Do research participants’ scores on the CDSE-SF increase from Time 1 to Time 2?
2. Do female traditional-age college students report lower career decision self-efficacy at Time 1 than male traditional-age college students at Time 1?

3. Do female traditional-age college students report larger gains in career decision self-efficacy at Time 2 than male traditional-age college students at Time 2?

4. Do traditional-age college students who identify themselves as members of non-dominant cultures report lower career decision self-efficacy at Time 1 than traditional-age college students who identify themselves as members of the dominant culture at Time 1?

5. Do traditional-age college students who identify themselves as members of non-dominant cultures report larger gains in career decision self-efficacy at Time 2 than traditional-age college students who identify themselves as members of the dominant culture at Time 2?

6. Do traditional-age college students with cumulative grade point averages below 2.0 report lower career decision self-efficacy at Time 1 than traditional-age college students with cumulative grade point averages at or above 2.0 at Time 1?

7. Do traditional-age college students with cumulative grade point averages below 2.0 report larger gains in career decision self-efficacy at Time 2 than traditional-age college students with cumulative grade point averages at or above 2.0 at Time 2?
Statistical Hypotheses

1. Traditional-age college students’ mean posttest total score on the CDSE-SF will be significantly higher than the mean total pretest score on the CDSE-SF after completing the career exploration course ($p < .05$).

2. Female traditional-age college students’ mean pretest total score on the CDSE-SF will be significantly lower than male traditional-age college students’ mean pretest total score on the CDSE-SF ($p < .05$).

3. Female traditional-age college students will show significantly larger gains in career decision self-efficacy as evidenced by the mean posttest total gain score on the CDSE-SF than male research participants’ mean posttest total gain score on the CDSE-SF ($p < .05$).

4. Traditional-age college students who identify themselves as members of a non-dominant culture will report a significantly lower mean pretest total score on the CDSE-SF than the mean pretest total score of traditional-age college students who identified as members of the dominant culture ($p < .05$).

5. Traditional-age college students who identify as members of a non-dominant culture will report significantly larger gains in career decision self-efficacy as evidenced by the mean posttest total gain score on the CDSE-SF than the mean posttest total gain score of participants who identified themselves as members of the dominant culture ($p < .05$).

6. Traditional-age college students with cumulative grade point averages below 2.0 will report a significantly lower mean pretest total score on the CDSE-SF than the
mean pretest total score of traditional-age college students with cumulative grade point averages at or above 2.0 ($p < .05$).

7. Traditional-age students with cumulative grade point averages below 2.0 will report larger gains in career decision self-efficacy as evidenced by the mean posttest total gain score on the CDSE-SF than the mean posttest total gain score of participants with cumulative grade point averages at or above 2.0 ($p < .05$).

Definition of Terms

In order to facilitate ease of understanding of the concepts and terms relevant to this study, the following terms will be defined:

**Academic Probation:**

Students on academic probation have earned a cumulative grade point average of less than 2.0 (Retrieved August 22, 2007 from http://catalog.utoledo.edu/06-08Catalog/General.indd.pdf).

**Career Decision Self-Efficacy:**

An individual’s belief that he or she can effectively accomplish the tasks necessary to making career decisions (Taylor & Betz, 1983).

**Career Exploration Course:**

For the purposes of this study, career exploration course will refer to a 15-week 2-credit hour academic course that facilitates students’ exploration of interests, values, skills, abilities, academic majors and career planning.
Career Indecision:

The lack of ability to choose and commit to a career alternative (Tokar, Withrow, Hall, & Moradi, 2003). Career indecision in the university setting is defined as difficulty in selecting an academic major or career (Gordon & Meyer, 2002).

Good Academic Standing:

Students who have achieved a cumulative grade point average of 2.0 or above are considered in good academic standing (Retrieved August 22, 2007 from http://catalog.utoledo.edu/06-08Catalog/General.indd.pdf).

Self-Efficacy Expectations:

Self-efficacy expectations describe a person’s beliefs about his or her ability to perform tasks or behaviors successfully (Bandura, 1977).

Study Participants from the Dominant Culture:

Describes study participants who identify themselves as being of European-American ethnic decent.

Study Participants from Non-Dominant Cultures:

Describes study participants who identify themselves as being of non-European-American ethnic decent.

Traditional-age College Student:

A Student who graduated from high school within one year from the time they enter college (Retrieved August 22, 2007, from http://utoledo.edu/admission/adult/index.html).
Undecided Student:

An undecided student for the purposes of this study will be defined as students without a declared academic major.

Organization of Chapters

Chapter One provides general introduction to the problem, and includes the study purpose, the research questions and the statistical hypotheses of the study, as well as definitions of terms important to the study. The chapter concludes with an overview of the proceeding chapters.

Chapter Two begins with a general discussion the characteristics and types of undecided college students. The process of career decision-making is discussed, and types of career decision-making difficulties are described. This chapter also discusses career exploration courses, including the history, types, and role of these courses in higher education. The construct of career decision self-efficacy is discussed in greater detail and the applicability of career decision self-efficacy to women and to individuals from non-dominant cultures is discussed. The chapter concludes with a discussion of previous research that has examined the effect of career exploration courses on college student career decision self-efficacy, and outlines the contributions of this study to the literature.

Chapter Three presents the methodology that was used in this study, and includes the purpose of the study, a discussion of the strengths and weaknesses of the research design, and the identification of the predictor and criterion variables of the study. The characteristics of study participants will be described, and the study procedures will be
outlined. The career exploration course served as the intervention in this study, so a description of the course content will be provided. The measures used in this study will be described, the research questions and statistical hypotheses of the study will be delineated, and the statistical procedures used to test the study hypotheses will be reviewed.

Chapter Four provides the results of the data analysis which provide support or lack of support for this study’s hypotheses. Data are present in table form, and include the analysis of the reliability and construct validity for the instrument for the sample of this study. Chapter Five provides a discussion of the results, implications of the study, limitations of this study, and offers recommendations for future research.
Chapter Two

Review of the Literature

As previously mentioned, the term “undecided” has been used to refer to students who are “unwilling, unable, or not prepared to make educational choices” (Lewallen, 1994, p. 6), and is generally utilized in the context of an educational setting. According to Lewallen, there is no operationalized definition of the construct for research purposes. Other descriptors of the undecided college student population include: “exploratory,” “open-major,” “undeclared,” and “general studies major” (Gordon, 1998). In addition to having multiple descriptors, the method by which students are identified as undecided varies among institutions (Lewallen). Some students, for example, are labeled undecided based on their admission application; others are considered undecided based on scores from career decision assessment tools; still others are labeled undecided via personal interviews or personal statements, or categorized as undecided based students’ pursuit of a non-degree program (Lewallen).

The disparity among definitions of the undecided student and the multiple methods to identify undecided students creates challenges in capturing consistent information about the population (Lewallen, 1994). Gaffner and Hazler (2002) estimated that 20-60% of students entering college are undecided about a career, and other estimates indicated that at least half of all college students who decided on a major will change their mind at some point in their academic career (Reese & Miller, 2006). Lewallen cited that 30% of
the college student population is undecided, while Hanna and Robinson (1990) reported that 50% of freshmen sampled indicated the need for career assistance.

Despite the difficulty in capturing the census data of the undecided college student, an examination of the characteristics of undecided students may be helpful for both researchers and practitioners to gain insight into this complex population. Fuqua and Newman (1989) stated that early research on career indecision focused on the oversimplified dichotomy of “decided” versus “undecided” subjects, and in his 1969 study, Tyler (as cited in Fuqua & Newman), described indecision as difficulty related to the implementation of a plan of action, and indecisiveness as a difficulty relating to personal issues that impede decision making capabilities. Osipow (1999) states that while a person “can be undecided without being indecisive” (p. 48), Gaffner and Hazler (2002) caution that the trait of indecisiveness must be explored and coping strategies developed before effective career decision-making can occur.

Undecided students have been characterized as having a greater level of anxiety and as having a more external locus of control than students with more stable career plans (Gianakos, 1999). Parents have been found to greatly influence undecided students’ choice of major (Gianakos), and undecided students are considered to have poor problem solving skills, and are described as having low self-esteem (Tokar et al., 2003). Undecided students are described as more impulsive decision-makers, while their decided peers are thought to employ more cognitively complex career decision making strategies (Gianakos). Furthermore, college students’ beliefs about their own educational and occupational strengths related significantly to the type and range of career alternatives students considered (Betz & Voyten, 1997).
In addition, undecided students have indicated that they are less satisfied with the college experience, are more likely to believe in career decision making myths, perceive more barriers in the career decision making process, and report experiencing feelings of inadequacy (Serling & Betz, 1990).

Types of Undecided College Students

Subtypes of undecided college students have been identified. College students who are described as “developmentally undecided,” are undecided about academic and career plans due to a lack of knowledge about the self and the decision making process (Tokar et al., 2003). For example, recent high school graduates may begin college with the goal of establishing personal independence, and need to progress through appropriate developmental tasks that allow them to discover their identity before they can make decisions about long term career goals (Odom, 2005). Students who are developmentally undecided typically resolve career decision-making difficulties through maturation, and have fewer generalized career decision difficulties (Guay, Ratelle, Senecal, Larose, & Deschenes, 2006).

Another subtype of undecided college students are the “chronically undecided” (Gordon, 1998). The chronically undecided college students may have difficulty making decisions about many aspects of their lives. These students typically have lower levels of vocational identity, lower self-esteem, lack knowledge about educational and occupational alternatives, and look for authority figures to identify an appropriate career choice for them. The chronically undecided students may experience some emotional distress about not having a chosen career, and may struggle with frustration and
perfectionism (Guay et al., 2006). Students’ frustration levels and perfectionist
tendencies, combined with social or educational pressures to make a career decision, can
lead to the development of career decision making anxiety (Gordon, 1998). College
students may experience internal conflicts as they question their career and educational
plans. Students’ discomfort with their career or educational decisions typically generates
anxiety, creating additional internal conflicts. Furthermore, college students may make
quick decisions about a career choice due to parental, institutional, or peer pressures.
Students’ career goals may conflict with careers recommended to them by significant
others, leading to external conflicts. Parents can be particularly influential regarding their
undecided students’ career choices (Gianakos, 1999; Guay et al.).

If an individual has difficulty making decisions to the extent that decisions are not
reached in time to take action to implement the decision, the individual likely experiences
indecisiveness (Osipow, 1999). While indecision is a state of normal human
development, indecisiveness is a personal trait that is involved in all types of decisions an
individual must make (Osipow). Chronic indecisiveness creates anxiety that pervades all
aspects of life (Gordon, 1998). In college students with indecisiveness, the students are
typically distressed, are unclear about career options, and are in need of others’ help and
approval when making decisions. Indecisive students also express discomfort in
choosing a career, indicate a lack of knowledge about careers, and experience global
uncertainty. It is suggested that indecisive students may need other types of
interventions, such as personal counseling, because they may be struggling with issues of
autonomy and may need the supportive, structured, relatively intensive interventions that
personal counseling can provide (Gaffner & Hazler, 2002; Gordon, 1998; Odom, 2005).
Indecisive students have more pervasive difficulties associated with all aspects of decision-making, and are not likely to be able to engage in effective career decision-making tasks until the interpersonal difficulties are mitigated.

**Career Decision-Making**

According to decision theory, the ideal decision is one that helps the decision maker reach his or her goals. The decision maker typically has a number of alternatives to consider when making a decision, and must evaluate the attributes of each alternative to determine the “best” decision that would lead to the achievement of his or her goals (Gati et al., 1996). Some characteristics of career decision-making contribute to the development of career decision-making difficulties for the decision maker. For example, career decisions often involve a large number of alternatives to consider, such as deciding among college majors or occupations (Gati et al.).

Furthermore, the decision maker often has large amounts of information available for each alternative, and a large number of aspects to consider about each alternative, including the amount of education or training needed enter into a given occupation, the competitiveness of a particular occupation, or the demand for that occupation (Gati et al., 1996). Individuals are then asked to integrate a large number of factors, including individual skills and strengths, personality traits, personal values, and characteristics of work and work environments. Integration of this information can be problematic, particularly with regard to developing a meaningful interpretation of this information (Gati et al.). One last unique attribute of career decision-making that increases its complexity is uncertainty: individuals making career decisions face uncertainty about
their own future preferences and goals, as well as face uncertain future political, economic, and occupational climates (Gati et. al).

The complexity of the career decision-making process can lead to career indecision. Career indecision is defined as the inability to select an educational or career choice (Kelly & Lee, 2002). The construct of career indecision stems from difficulties in the career decision-making process, and career indecision has been described as one of the most significant and complex constructs in the field of vocational counseling (Germeijs & DeBoeck, 2003). A more thorough understanding of the complexities of career decision-making difficulties can assist both the decision maker and the professional counselor in identifying appropriate interventions to most effectively address the specific career decision problems of the decision maker. In order to more effectively conceptualize career decision-making difficulties, Gati et al. (1996) developed a framework to categorize career decision problems. This framework provides a lens to examine the career decision-making difficulties of college students. The framework categorizes career decision difficulties into two types: the decision-making difficulties that occur before an individual attempts to make a career decision, and the career decision difficulties that occur after the individual attempts to make a career decision (Gati et al.).

**Types of Career Decision-Making Difficulties**

According to Gati and colleagues’ (1996) framework, the decision-making difficulty that can occur before an individual engages in the process of career decision-making is a lack of readiness. Gati and colleagues proposed four causes for career decision making
difficulty due to a lack of readiness to engage in the career decision-making process. The first is a lack of motivation to engage in the career decision making process. This lack of motivation can occur due to the individual’s unwillingness to make a decision, due to work not being a priority for the individual at the time, or because the individual perceives that time will lead him or her to the right career choice (Gati et al.)

The second source of difficulty that can occur before the individual engages in career decision-making is general indecisiveness (Gati et al., 1996). General indecisiveness describes an individual that has difficulty in making all types of decisions, has a general fear of commitment, and has a general fear of failure. A third cause of career decision-making difficulties that can occur before an individual attempts to make a career decision is dysfunctional myths. Dysfunctional myths describe irrational expectations about the process of career decision making, such as the belief that there is an ideal career that can fulfill all an individual’s aspirations. The final cause of career decision-making difficulties that can occur before an individual attempts to make a career decision is a lack of knowledge about the career decision making process. The lack of knowledge about the career decision-making process refers to the steps involved in making a career decision, as well as to the factors an individual should consider before making a career decision, and how to integrate information about the self and about career alternatives (Gati et al.)

Once the individual engages in the process of career decision making, a lack of information or inconsistent information can create barriers for the decision maker (Gati et al., 1996). Three distinct sources of lack of information are identified: the decision maker may lack information about himself or herself, lack information about
occupations, or lack of information about ways to obtain additional information. A lack of information about the self can include a lack of information about an individual’s abilities, personality traits, and as well as a lack of information about career preferences. A lack of information about occupations describes a lack of information about the available career alternatives (Gati et al.). A lack of information about ways to obtain additional information describes the lack of information about how to obtain additional information about both the self and career alternatives.

Barriers in the career decision-making process can also occur due to the decision-maker’s lack of consistent information (Gati et al., 1996). There are three sources of inconsistent information: unreliable information, internal conflicts, and external conflicts. Unreliable information describes unclear information about the self, including abilities, personality traits, and preferred career alternatives (Gati et al.). Internal conflicts refer to conflicts within the individual, such as the conflict between the real and the ideal self. The conflict between the real and ideal self can manifest itself when an individual’s abilities exceed those that are required for a particular occupation, or when an individual’s abilities are insufficient to enter into a particular occupation. The final source of career decision-making difficulty involves external conflicts, which refer to conflicts between the goals and values of the individual and the goals and values of significant others.

Understanding the general characteristics of undecided college students of one aspect of assisting undecided college students, while responding to the needs of undecided college students with appropriate interventions is another aspect to assisting undecided college students. College and university response to career indecision among student
populations is important for several reasons. Gaffner and Hazler (2002) reported that students that are retained at universities are those who have decided on a major or vocational direction. Thus, colleges and universities have a vested interest in responding to the needs of students with undeclared majors or uncertain career plans, so that students complete their academic programs. One way that universities have responded to the career development needs of students is through career exploration courses.

*Career Exploration Courses*

Career exploration courses have had a long history in higher education. In a review of career course literature, Folsom and Reardon (2001) found evidence of vocational education initiatives incorporated into university course work as early as 1911. The first comprehensive career education course was offered at The University of Minnesota in 1932 (Folsom & Reardon). The prevalence of career courses continued to rise. Folsom and Reardon reported that 33 institutions were offering full academic credit for the career education courses in the 1960s. It is speculated that the expansion of the availability of career education courses on college campus occurred due a restricted job market and to the shift in the mission of institutions of higher education to promote holistic development of students (Devlin, 1974, as cited in Folsom & Reardon.). Topics covered in career education courses during this time period included information about careers, information about the decision-making process, and job-search strategies (Devlin, as cited in Folsom & Reardon.).

Halasz and Kempton (2000) speculated that the popularity of career development courses has increased over the past 25 years because group interventions allow cost
effective dissemination of information to large groups of students. More recently, a 1997 national survey on career exploration coursework solicited 1,688 college members of the National Association of Colleges and Employers and found that 30% of respondents reported that credit-bearing courses were offered at their respective institutions, and that career exploration courses were most frequently offered for one credit hour (Halasz & Kempton).

Noncredit-bearing courses were offered at 24% of the responding institutions (Collins, 1998), a rate that Vernick, Reardon, and Sampson (2002) stated has been consistent since 1981. Halasz and Kempton (2000) identified faculty and administrative support of the course as the key factor in whether or not a credit bearing career exploration course is offered at an institution.

Career exploration courses are varied in terms of their purpose, scope, and function (Folsom & Reardon, 2001). Career exploration courses are designed to serve various student populations, such as entering first year students, or upper division students with declared majors (Folsom & Reardon). Some courses are considered elective and other courses may be requirements within students’ majors (Folsom & Reardon). The structure of career exploration courses ranges from highly structured to open-ended in format, and some courses are offered as stand-alone courses, while others are integrated into on-going college career centers’ services and programming on campuses (Folsom & Reardon). Finally, some courses focus on self-assessment and career planning, while others focus on post-graduation employment planning (Folsom & Reardon).

When evaluating the effectiveness of career exploration courses, it is important to recognize some of the challenges to career exploration course evaluation. Credit or non-
credit career course options may influence course effectiveness in that students taking the course for credit may engage differently with the course than students who are taking non-credit-bearing courses. Academic credit offered for career exploration courses is varied: some courses are offered for one to three credit hours, while others are offered for variable credit (Folsom & Reardon, 2001). Some additional areas of weakness in career course research include the variability of effective treatment options; the content of some career courses are linked to career development theory, while other courses are atheoretical; outcome measures are not necessarily linked to the course interventions; student motivation for course enrollment is not typically assessed; the impact of instructor variability is not investigated; and researcher bias toward treatment outcomes is not acknowledged (Spokane & Oliver, as cited in Folsom & Reardon).

In order to examine the effectiveness of career planning courses, Folsom and Reardon (2001) conducted a metanalysis of studies involving over 16,000 students from 1976 - 2001. The framework for their analysis examined the outputs and outcomes of career course interventions. Career course outputs are defined as the skills, knowledge and attitudes that the participants acquire as a result of an intervention (Peterson & Burck, as cited in Folsom & Reardon). Examples of outputs that could be the result of a career course intervention include increased career decision-making self-efficacy, increased career decidedness, or increased career maturity (Folsom & Reardon). Outcomes of career course interventions refer to resultant effects of the course that occur post intervention (Folsom & Reardon). Examples of outcomes of a career course intervention include retention and timely graduation from the institution, deciding on an academic major, or the effect of the course on students’ cumulative grade point averages (Folsom
Folsom and Reardon stated that career course outputs, such as a change in career thoughts, increased career decidedness, and improved career decision making skills are theoretically related to outcomes of career course interventions, such as college retention and job or academic major satisfaction.

Folsom & Reardon (2001) reviewed 38 studies of career course outputs, and found 90% of the studies (34) reporting positive gains in study participants’ measured output variables. Career course outcomes were reviewed in 15 studies, and 87% of the studies (9) reported positive gains in study participants’ measured outcome variables. Folsom and Reardon concluded that despite weaknesses in career planning course research, their meta-analysis of 52 studies that examined career planning course effectiveness found “overwhelming evidence that these courses have a positive impact on the cognitive functioning of students, and these courses also appear to have a positive impact on student outcomes” (p. 26).

Brown and Krane (2000) analyzed the effectiveness of career interventions, and concluded that effective career interventions, which include career planning courses, have five primary characteristics. These characteristics are: assisting students with the identification and clarification of career and life goals in writing; providing students with individualized feedback, such as individual assessment results; supplying students with current information on the challenges and opportunities of various occupation and career fields; and assisting students in the development of support networks needed for pursuing their identified career goals (Brown & Krane). Accordingly, it is suggested that individuals charged with the task of developing or evaluating the effectiveness of career planning courses should assess the extent to which these five components are
incorporated into the career course (Brown & Krane). Career exploration courses represent an attempt by colleges and universities to meet the needs of undecided students at universities efficiently and effectively.

**Self-Efficacy Theory**

According to Bandura’s seminal work (1977), self-efficacy expectations describe a person’s beliefs about his or her ability to perform tasks or behaviors successfully. Self-efficacy has been described as the most important aspect of personal agency (Gloria & Hird, 1999). Self-efficacy theory posits that individuals develop self-efficacious beliefs via four primary sources: performance accomplishments, physiological or emotional arousal, vicarious learning and modeling, and verbal persuasion (Bandura). Individuals, as the “perceivers” of their own self-efficacy beliefs, subjectively identify and evaluate these sources of self-efficacy information (Betz, 2000).

Performance accomplishments are thought to be primary contributors to the development of self-efficacy beliefs because they are derived from personal mastery of tasks. Repeated successes raise performance expectations, and allow the individual to cope with the impact of an intermittent failure (Bandura, 1977). Once a level of self-efficacy has been realized, successful accomplishments of more difficult tasks is necessary to further increase self-efficacy beliefs (Betz, 2000). Repeated failures, on the other hand, lower mastery expectations, and hamper the individual’s development of self-efficacy related to the specific task. Repeatedly failure to complete a task eventually leads to the abandonment of that task (Bandura). Another source of self-efficacy information is physiological or emotional arousal. Emotional arousal provides cues that
allow individuals to assess their anxiety level about completing a given task (Bandura). Typically, high anxiety levels negatively impact performance; therefore, individuals are more likely to have high self-efficacy expectations when they have lower levels of emotional arousal (Bandura).

Vicarious learning or modeling, another source of self-efficacy information, involves the development of self-efficacy expectations based on observing others perform difficult activities with success (Bandura, 1977). Bandura noted that the observer reported greater self-efficacy expectations when the observer and the model shared cultural similarities. Accordingly, the influence of culture on self-efficacy beliefs is thought to be particularly relevant to the development of self-efficacious beliefs of women and people of color (Betz & Hackett, 1981; Byars & Hackett, 1998; Chung, 2002; Devaney & Hughey, 2000; Fassinger & O’Brien, 2000; and Gloria & Hird, 1999).

The final source of efficacy information according to Bandura’s (1977) self-efficacy theory is verbal persuasion. Individuals are verbally coaxed into believing that they can successfully accomplish a given task. Bandura acknowledged that social persuasion alone will not generate a lasting sense of self-efficacy. Individuals must experience conditions that facilitate the successful performance of tasks, along with verbal encouragement, to develop a strong sense of personal self-efficacy.

Bandura (1977) distinguished self-efficacy expectations from outcome expectations. Outcome expectations are defined as an individual’s anticipation that a specific action will lead to a specific outcome. Efficacy expectations refer to an individual’s belief that he or she can successfully perform the behavior required to produce the desired outcome (Bandura). For example, an individual may believe that engaging in certain tasks will
lead to a specific outcome, but efficacy expectations may influence how the individual attempts to complete the tasks, the amount of effort put into task completion, and the degree of persistence employed toward task completion when faced with obstacles.

Betz (2000) emphasized that self-efficacy beliefs must be linked to a behavioral referent to have meaning. In other words, individuals must perceive or fail to perceive self-efficacious beliefs toward a given behavior for self-efficacy to have meaning. Examples of behavior referents include effective public speaking, or successful completion of a statistics course. Individuals perceive that they have the confidence, or perceive a lack of confidence, to effectively speak in public or to complete a statistics course successfully.

Social Cognitive Career Theory

Social Cognitive Career Theory (SCCT) developed from Bandura’s Social Cognitive Theory that posits that cognitions mediate social learning (Lent, Brown & Hackett, 2002). Some basic assumptions of Social Cognitive Theory include the idea that individuals learn by watching others, that learning is an internal process that may or may not exert an effect on behavior, that behavior is goal directed, and that behavior will become self-regulated (Lent et al., 2002). Self-regulation describes the actions of initiating, monitoring, and evaluating behavior to allow for the achievement of an individual’s goals (Lent et al.). An assumption of SCCT is that individuals are agents in the construction of their career outcomes, their self-perceptions, and their career paths (Lent et al.). SCCT acknowledges the influence of genetic factors, and environmental conditions on an individual’s cognitions, which in turn, influences his or her career
development (Lent et al.). Personal attributes, external environmental factors, and overt behaviors influence one another bi-directionally, each aspect mutually influencing the other. The personal attributes that affect and are affected within this triadic system include self-efficacy, outcome expectations, and personal goals. These constructs have already been discussed, but in brief, self-efficacy is defined as a system of beliefs about individuals’ capabilities to identify and complete courses of action that allow them to achieve a certain level of performance (Lent et al.). Outcome expectations are concerned with individuals’ beliefs about the consequences of performing certain behaviors, while personal goals are described as the determination to engage in a specific activity to achieve a future outcome (Lent et al.).

SCCT is not just associated with the career development process, but is also concerned with academic interests, personal decisions that impact career development, and performances (Lent et al., 2002). The SCCT posits that abilities, self-efficacy, outcome expectations, and performance goals affect career and academic performance, and that the construct of self-efficacy is a key factor for an individual to successfully progress through the career decision-making process (Lent et al.).

Career Decision Self-Efficacy

Hackett and Betz first applied the construct of self-efficacy to the behavioral referent of career decision-making, and coined the term career decision self-efficacy. Career decision self-efficacy is defined as an individual’s belief that he or she can effectively accomplish the tasks necessary to make career decisions (Taylor & Betz, 1983). Career decision self-efficacy refers to the steps involved in making career
decisions (Hackett, 1995). An individual’s reported self-efficacy toward career decision-making describes the amount of confidence an individual has in his or her ability to make a career decision. According to self-efficacy theory (Bandura, 1977), an individual's level of self-efficacy toward career decision-making is going to determine the level of approach-avoidance behaviors toward career decision-making. Approach behavior defines what an individual will attempt; avoidance behavior defines what an individual will not attempt (Betz, 2004). An example of approach behavior in career decision-making would be an individual's willingness to complete a self-assessment instrument, while an example of avoidance behavior would be the individual’s failure to complete a self-assessment instrument.

Approach-avoidance behaviors can occur with the content of the career choice and the process of career choice (Betz, 2004). The content of the career choice refers to the types of academic majors or career paths a person will attempt, while the choice process refers to the exploration and decision-making behaviors that lead to making informed career decisions (Betz, 2004). Avoidance behavior perpetuates low self-efficacy for career decision-making because the individual has no opportunity to experience accomplishments related the avoided tasks (Betz, 2004). Thus, the individual who avoids engaging in tasks related to career decision-making does not experience any successes that encourage further progress toward making a career decision.

An individual’s level of self-efficacy toward career decision-making also influences the quality of performance of behaviors associated with the task, and the degree of persistence an individual employs toward accomplishing the task when faced with obstacles (Bandura, 1977). An example of the influence of self-efficacy expectations on
the quality of performance of behaviors associated with career decision-making is the individual’s accurate completion of a self-assessment instrument. High self-efficacy expectations when faced with obstacles could lead an individual to persistence in response to a demanding educational program. Career decision self-efficacy influences individuals’ level of engagement in career exploration activities in that the greater the confidence an individual has in his or her decision-making abilities, the greater the likelihood he or she would actively participate in the career exploration process (Hackett, 1995).

Self-efficacy beliefs about career decision-making have the potential to strongly influence an individual’s career decision-making process. Self-efficacy beliefs about career decision-making can influence an individual’s dedication to career planning as well as the execution of career choices (Chung, 2002). Self-efficacy beliefs inform not only the range of occupations individuals perceive as viable career options, but influence the level of persistence and success that individuals have in their chosen career fields (Hackett & Betz, 1981). Weak self-efficacy beliefs about career decision-making are linked to career indecision as well as career choice anxiety, which can impede the process of career decision-making (Hackett, 1995). One of the more significant applications of self-efficacy related to career decision-making involves self-efficacy and women’s career development.

Career Decision Self Efficacy and Gender

According to Fassinger and O’Brien (2000), women and men have different occupational needs, goals, and difficulties. The two general themes that are salient in the
vocational literature regarding primary gender differences are access to career opportunities, and role strain between work and family (Fassinger & O’Brien). The issue of lack of access to viable career opportunities has been described as vocational segregation, which involves the underutilization of women’s abilities and talents, resulting in job opportunities for women that are often lower in status, offer less compensation, and lack opportunities for advancement relative to job opportunities for men (Fassinger & O’Brien).

The second major theme in career literature related to gender differences is the high level of engagement in family roles for most women and the associated difficulties of role conflict between family and career pursuits. This role conflict often results in women compromising their career goals to accommodate the demands of family and career (Fassinger & O’Brien, 2000). Thus, while extent of women’s participation in the labor may be similar to that of men, women’s engagement in the workforce often differs from that of men because of issues of access to viable career opportunities and the management of role conflict that may occur between work and family (Fassinger & O’Brien).

Hackett and Betz (1981) proposed that self-efficacy theory, along with the mediating cognitive and affective factors associated with gender role socialization, could be used to explain enduring gender differences in career choice patterns of men and women. Hackett and Betz were the first researchers examine self-efficacy in the context of gender, hypothesizing those self-efficacy expectations could give insight into women’s career development. Specifically, self-efficacy beliefs were examined as a way to
conceptualize the underrepresentation of women in the fields of math and sciences (Betz & Hackett, 2006).

Betz and Hackett (1981) examined the underrepresentation women in traditional (male dominated) occupations with development of the Occupational Self-Efficacy scale. Male research participants’ scores on the Occupational Self-Efficacy scale were equivalent for traditionally male-dominated and traditionally female-dominated occupations (Betz & Hackett). Female research participants’ scores on the Occupational Self-Efficacy scale were significantly lower than men’s scores for male-dominated occupations, and significantly higher than men’s for female dominated occupations (Betz & Hackett). Gender differences in self-efficacy in Betz and Hackett’s study predicted the range of traditional and non-traditional occupations considered. Betz and Hackett suggested that low self-efficacy expectations associated with pursuing a non-traditional occupation based on gender reduced that likelihood that those occupations would be considered as viable career options.

Lent, Brown, and Larkin (1986) further explored the link between career decision self-efficacy expectations and gender. Lent et al. (1986) found that college students’ beliefs about their ability to successfully complete the academic requirements necessary for success in the natural science and engineering fields were linked to academic performance. Over the course of an academic year, students who reported higher self-efficacy beliefs about their ability to complete the requirements for science and engineering fields were more likely to achieve higher grades and persist in those majors. Results of follow up research indicated that self-efficacy was an important cognitive factor mediating the educational behavior of students considering science and technical
fields (Lent et al.). Self-efficacy beliefs are thought to have a greater influence on women’s career choices than abilities, values, and interests (Hackett, 1995).

Accordingly, women’s self-efficacy beliefs appeared to be more strongly influenced by successes and failures compared with the self-efficacy beliefs of men (Hackett). Furthermore, traditional views of “feminine” and “masculine” careers may be conveyed to individuals throughout childhood, which can limit their exposure to information that would facilitate the development of strong self-efficacy beliefs in a wide range of occupations (Hackett). In fact, women may be discouraged from engaging in activities that could strengthen women’s self-efficacy expectations (Gainor, 2006). Hackett and Betz’s application of self-efficacy to women’s career development has contributed much to the career development literature. Their theoretical and empirical articles have generated several hundred studies of career self-efficacy, and together the articles have been cited over 500 times (Betz & Hackett, 2006). Career self-efficacy research has the potential to offer insight into the career decision-making of diverse populations (Lindley, 2006). It is the hope of this study to contribute to the career self-efficacy literature involving both college women and college students from diverse cultural groups.

Career Decision Self-Efficacy and Cultural Diversity

With the exception of Asian Americans, individuals from non-dominant cultures are underrepresented in occupations offering the greatest opportunities for career advancement and occupational gains (DeVaney & Hughey, 2000). It is important to acknowledge that individual attributes influence personal success and achievement; it is possible, however, to note general trends among college students involving race and
ethnicity. According to DeVaney and Hughey, members of culturally diverse backgrounds are less likely to enroll and less likely to graduate from college than white students. While academic achievement influences student persistence in college, over 1/3 of students from non-dominant cultures who drop out of college are not experiencing academic difficulties (DeVaney & Hughey). One of the reasons attributed to higher drop out rates for students from non-dominant cultures is a lack of engagement with the institution (DeVaney & Hughey). Students from culturally diverse backgrounds are more likely to perceive a lack of campus career planning resources, report experiences of prejudice, and report feelings of alienation than white students (DeVaney & Hughey). Self-perception can be influenced by the culturally biased messages received from individuals and institutions (DeVaney & Hughey).

In addition, dominant cultures in any society predominately control the world of work (Gloria & Hird, 1999). As a result, individuals from non-dominant cultures may experience a genuine restriction of career alternatives, or may perceive that their career alternatives are restricted (Gloria & Hird). This restriction of alternatives could therefore effect an individual’s belief in his or her ability to perform the tasks of a specific occupation (Gloria & Hird; Lindley, 2006). Chaney, Hammond, Betz, and Multon (2007) described self-efficacy as a concept that is significant to understanding the career development of not only woman, but also the career development of individuals from non-dominant cultures.

Self-efficacy is relevant to the pursuit of goals when faced with obstacles, and members of marginalized cultural groups are particularly vulnerable to the negative messages that may take the form of discrimination or harassment (Betz, 2000). Limited
or stereotypical socialization experiences related to career opportunities can lead to lower career decision self-efficacy beliefs for members of culturally diverse groups (Betz, 2000).

Of the four sources of information thought to generate self-efficacy beliefs, Bandura theorized that successful performance accomplishments are the most influential (1977). In contrast, for members of non-dominant cultures, verbal encouragement and vicarious learning experiences from culturally similar role models may offer greater contribution to self-efficacy expectations (Byars & Hackett, 1998). In kind, observing the failure of a culturally similar role model to complete a task, or receiving verbal discouragement from a culturally similar role model can weaken self-efficacy beliefs associated with a given task (Bandura, 1977; Byars & Hackett; Betz, 2000). Verbal persuasion and vicarious learning experiences do not compensate, however, for task failures. In order to effectively impact self-efficacy beliefs, verbal persuasion needs to involve viable accomplishments, rather than on unfeasible tasks (Betz, 2000).

Career Decision Self-Efficacy and Career Exploration Courses

Other studies (Cox, 1996; Moore, 2003; Oreshnick, 1991; Reese & Miller, 2006) have examined the effect of a career exportation course on the career decision self-efficacy of undecided college students. These studies will be discussed in detail, and the literature review will conclude with a summary of the contributions of the current study to the career decision self-efficacy body of literature.

The Oreshnick study (1991) examined the effect of a career planning course on the career decision-making self-efficacy of a sample of 159 college students. Seventy-one
students enrolled in a career planning course participated in the study. The course met one time each week for approximately 2 hours, for 10 weeks. Eighty-eight students enrolled in a learning skills course represented the control group. Students in the treatment and control groups took the Career Decision Self-Efficacy Scale (CDSES) [Taylor & Betz, 1983]. Oresnick’s analyses indicated that the corresponding treatment effect estimated that treatment subjects’ pretest and post scores on the CDSES significantly exceeded those of control subjects by 34.26 (p < .0001). The corresponding gender effect estimated that females’ difference scores significantly exceeded those of males by 22.45 (p < .01).

Cox (1996) also examined the effectiveness of a career planning course on the construct of career decision-making self-efficacy with a sample of 348 students enrolled in a 10 week, two credit hour course drawn over a two year period. Cox examined pretest and posttest difference scores on the CDSES (Taylor & Betz, 1983) for significant gains utilizing a matched-pair t-test. Cox reported that the mean gain score from pretest to posttest was 69.31. With an alpha level of .05, the change in CDSE scores was significantly significant. In contrast with Oreshnick’s study (1991), results of Cox’s study did not find that gender was related to significant gains in career self-efficacy scores (p < .05).

Moore’s (2003) study utilized an iteration of the Career Decision-Making Self-Efficacy Scale (Betz & Taylor, 2000) to examine the effect of career exploration courses on the career decision self-efficacy of students enrolled in different career exploration courses offered two universities in the Midwest. The study’s sample (N = 60) was derived from students enrolled in career courses from three different academic terms. For
each term, the results of Moore’s study indicated a significant difference between the means of the pretest and posttest scores with a $p$ value of .05 ($t(189) = 4.863$; $t(85) = 2.962$; $t(101) = 3.809$). Gender differences in career decision self-efficacy were not examined in Moore’s study.

More recently, Reese and Miller’s study (2006) examined the effects of a career development course on career decision-making self-efficacy of a sample of 30 students enrolled in a 15-week one credit hour career exploration course. A pretest-posttest nonequivalent group design compared students in the career course with a quasi-control group of 66 students enrolled in an introductory psychology course (Reese & Miller). No statistically significant difference was found between the treatment and control group (Reese & Miller). This study utilized the Career Decision Self Efficacy Scale- SF (Betz, Klein, & Taylor, 1996). A mixed-model repeated measures ANOVA (Group x time) was used to examine group differences. The interaction effect was statistically significant $F (1, 94) = 6.41$, $p = .013$), indicating that students who completed the career course showed increased career decision-making self-efficacy overall compared to the control group. This study did not report results by gender. The results of the Reese and Miller study suggested that a course-based career intervention is effective medium for improving the perceived career decision-making self-efficacy of university students. Specifically, significant gains were found in the areas of gathering informing, setting goals and making future plans.

The results of the four studies (Cox, 1996; Moore, 2003; Oreshnick, 1991; Reese & Miller, 2006) indicated that students who enrolled in career exploration courses experienced an increase in career decision self-efficacy. This study contributes to the
literature in several ways. First, in addition to the examination of mean gain total career
decision self-efficacy scores, this researcher inquired about baseline or pre-intervention
career decision self-efficacy scores of research participants for the variables of sex,
cultural identification, and grade point average. Since career decision self-efficacy has
been found to level of engagement in career exploration activities (Hackett, 1995),
knowledge of baseline career decision self-efficacy scores could allow for the
development and implementation of interventions to specifically target groups of college
students with lower career decision self-efficacy.

Furthermore, two of the previous studies (Cox, 1996; Oreshnick, 1991) specifically
investigated the effect of participants’ sex on career decision self-efficacy, and found
conflicting results. This study examined the mean total pre-intervention career decision
self-efficacy score for the male and female research participants of this study, as well as
the mean total gain career decision self-efficacy score for the male and female research
participants of the study.

Likewise, this study investigated the mean total pre-intervention career decision self-
efficacy score and mean total gain career decision self-efficacy score for research
participants based on cultural identification. With the exception of reporting sample
demographic data, none of the previous studies that examined the effect of a career
exploration course on the career decision self-efficacy of undecided college students
investigated the effect of study participants’ dominant and non-dominant cultural
identification on their career decision self-efficacy. As mentioned previously, the
enrollment of students of color on college campuses has increased (National Center for
Education Statistics, retrieved December 8, 2008, from

Furthermore, this study examined the mean total pre-intervention career decision self-efficacy score and the mean career decision self-efficacy total gain score for research participants based on grade point average. This researcher found no other studies that have examined the effect of grade point average on the career decision self-efficacy of undecided college students. According to self-efficacy theory, performance accomplishments have the strongest influence on self-efficacy beliefs (Bandura, 1977).

This researcher was interested in how academic achievement as measured by grade point average would affect career decision self-efficacy of research participants. Students with lower grade point averages are less likely to be retained at institutions of higher education (Ishitani & DesJardins, as cited in Lotkowski et al., 2004). Knowledge of the career decision self-efficacy levels can help college counselors in their treatment planning with students having academic difficulties.

Summary of Review of Literature

The literature review began with a discussion of the characteristics of undecided college students, and subtypes of undecided college students were identified. Next, the complexities of career decision-making were described, and career indecision, one of the most salient constructs in the field of vocational counseling, was defined. Gati et al.’s (1996) framework, which was developed to categorize the sources of career decision-making difficulties, was outlined. Next, an overview of the history, prevalence, and utility of career exploration courses in higher education was discussed. A discussion of
Bandura’s (1977) self-efficacy theory followed. Subsequently, a discussion of the development and significance of the construct of career decision self-efficacy was provided. The application of career decision self-efficacy to woman and to culturally diverse populations followed. Next, results of previous studies that examined the effect of career exploration courses on college students’ career decision self-efficacy were discussed. This literature review concluded with a discussion of the present study’s contributions to the career decision self-efficacy body of research.
Chapter Three

Methodology

The purpose of this study was to investigate the effect of a career exploration course on the career decision self-efficacy of traditional-age undecided college students. Career decision self-efficacy was measured by the Career Decision Self-Efficacy Scale-Short Form (CDSE-SF, see Appendix A). A student information sheet (Appendix B) was administered to research participants to gather demographic and grade point average data. This study also examined the pretest total scores on the CDSE-SF of research participants to determine if baseline career decision self-efficacy scores at the start of the career exploration course differed statistically for research participants for the variables of sex, cultural identification, and grade point average. Also, the study examined research participants’ gain scores on the CDSE-SF at the end of the career exploration course to determine if gain scores differed statistically for research participants for the variables of sex, cultural identification, and grade point average.

Research Questions

The following research questions were addressed in this study:

1. Do research participants’ scores on the CDSE-SF increase from Time 1 to Time 2?

2. Do female traditional-age college students report lower career decision self-efficacy at Time 1 than male traditional-age college students at Time 1?
3. Do female traditional-age college students report larger gains in career decision self-efficacy at Time 2 than male traditional-age college students at Time 2?

4. Do traditional-age college students who identify themselves as members of non-dominant cultures report lower career decision self-efficacy at Time 1 than traditional-age college students who identify themselves as members of the dominant culture at Time 1?

5. Do traditional-age college students who identify themselves as members of non-dominant cultures report larger gains in career decision self-efficacy at Time 2 than traditional-age college students who identify themselves as members of the dominant culture at Time 2?

6. Do traditional-age college students with cumulative grade point averages below 2.0 report lower career decision self-efficacy at Time 1 than traditional-age college students with cumulative grade point averages at or above 2.0 at Time 1?

7. Do traditional-age college students with cumulative grade point averages below 2.0 report larger gains in career decision self-efficacy at Time 2 than traditional-age college students with cumulative grade point averages at or above 2.0 at Time 2?
Statistical Hypotheses

The following statistical hypotheses were investigated in this study:

1. Traditional-age college students’ mean posttest total score on the CDSE-SF will be significantly higher than the mean total pretest score on the CDSE-SF after completing the career exploration course ($p < .05$).

2. Female traditional-age college students’ mean pretest total score on the CDSE-SF will be significantly lower than male traditional-age college students’ mean pretest total score on the CDSE-SF ($p < .05$).

3. Female traditional-age college students will show significantly larger gains in career decision self-efficacy as evidenced by the mean posttest total gain score on the CDSE-SF than male research participants’ mean posttest total gain score on the CDSE-SF ($p < .05$).

4. Traditional-age college students who identify themselves as members of a non-dominant culture will report a significantly lower mean pretest total score on the CDSE-SF than the mean pretest total score of traditional-age college students who identified as members of the dominant culture ($p < .05$).

5. Traditional-age college students who identify as members of a non-dominant culture will report significantly larger gains in career decision self-efficacy as evidenced by the mean posttest total gain score on the CDSE-SF than the mean posttest total gain score of participants who identified themselves as members of the dominant culture ($p < .05$).

6. Traditional-age college students with cumulative grade point averages below 2.0 will report a significantly lower mean pretest total score on the CDSE-SF than the
mean pretest total score of traditional-age college students with cumulative grade point averages at or above 2.0 ($p < .05$).

7. Traditional-age students with cumulative grade point averages below 2.0 will report larger gains in career decision self-efficacy as evidenced by the mean posttest total gain score on the CDSE-SF than the mean posttest total gain score of participants with cumulative grade point averages at or above 2.0 ($p < .05$).

**Design**

A single group pretest-posttest design (Campbell & Stanley, 1963) was used to examine the effect of a career exploration course on the career decision self-efficacy of traditional-age college students. The single group pretest-posttest design facilitates the collection of information, the development of hypotheses, and the examination of the effectiveness of interventions (Heppner, Kivlighan, & Wampold, 1999). For this study, the researcher administered the CDSE-SF to study participants at beginning and end of 12 sections of semester-long career exploration courses, which in turn allowed the researcher to test hypotheses associated with the career course effectiveness in increasing students’ career decision self-efficacy. An important limitation to the single group pretest-posttest design is that the non-experimental design does not allow for a cause and effect relationship to be identified (Campbell & Stanley). Therefore, if a difference was found in the study participants’ career decision self-efficacy from pretest to posttest, the researcher cannot conclude that the career exploration course caused the change in career decision self-efficacy. Furthermore, while the lack of a control group to serve as a comparison group can generate threats to internal validity, the results of several studies
(Cox, 1996; Moore, 2003; Oreshnick, 1991; Reese & Miller, 2006) that were discussed in the literature review indicated that career exploration courses had been effective in increasing career decision self-efficacy of students. Therefore, a control group was not implemented in this study, and the single group pretest- posttest design was deemed the most applicable design to address the purpose and research questions of this study.

The independent variables in this study were research participants’ sex, cultural identification, and cumulative grade point average. The dependent variables in this study were career decision self-efficacy as measured by research participants’ mean total career decision self-efficacy score and participants’ mean gain score from pretest to posttest on the CDSE-SF. The variable of participant sex was chosen for examination in this study because there is a need for additional data on the effect of a career exploration course on the career decision self-efficacy of college women. Two studies examined the effect of a career exploration course on the career decision self-efficacy of college women, and one study found that career decision self-efficacy changed at a statistically significant level compared with college men (Oreshnick, 1991), while the results of a second study indicated no difference in career decision self-efficacy levels for college women compared with their male cohort (Cox, 1996). This study adds to the body of literature regarding the effect of a career exploration course on the career decision self-efficacy of college women.

Career decision self-efficacy has been identified as a factor in career decision-making for individuals of color (Gloria & Hird, 1999), yet there have been no studies that have specifically examined the effect of a career exploration course on the career decision self-efficacy of college students of color. However, the lack of a significant sample size of
students from various racial or ethnic groups would have not allowed the researcher to make any clinically meaningful conclusions on career decision self-efficacy and college students of color. Therefore, in order to increase the sample size of racially and ethically diverse participants, the researcher utilized the variable of cultural identification to categorize study participants. Study participants who identified themselves as European American were coded as members of the dominant culture. Study participants who identified themselves as members of another racial or ethic group besides European American were identified as members of the non-dominant cultures.

Grade point average was identified as a variable of interest in this study because self-efficacy theory posits that individuals develop self-efficacious beliefs through performance accomplishments. Self-efficacy beliefs also are thought to influence persistence on task in the face of obstacles (Bandura, 1977). The researcher was interested in whether students who had experienced academic difficulties would have lower career decision self-efficacy than those who had not experienced academic difficulties. Research participants who had experienced academic difficulties were defined as those participants who identified themselves as having a grade point average below 2.0. This criterion was utilized because the students with grade point averages below 2.0 are put on academic probation, and could be suspended from the university. This study will provide initial data on the effect of grade point average on the career decision self-efficacy of traditional-age college students.

The following is how the variables were coded in the present study. The independent variables, in alphabetical order, were:

Cultural Identification (CULTURE: 0 = dominant, 1 = non-dominant)
Grade Point Average (GPA: 0 = below 2.0, 1 = 2.0 or above)

Sex (1 = male, 0 = female).

The dependent variables were:

CDSE-SF Mean Total Score (CDSE-SF: continuous)

CDSE-SF Mean Total Gain Score (CDSE-SF GS: continuous)

Study Participants

The study participants were traditional-age college students who had undecided majors at a midsized, open enrollment Midwestern urban university. Students were encouraged to register for the Career and Self-Evaluation course by their academic advisers. Undecided students were required to consult with an academic adviser prior to registering for course. A total of 298 students registered for the course, and a total of 228 students gave written informed consent to participate in the study. A total of 141 students completed both the pretest and the posttest of this study, and therefore comprised the final sample for this study. The mean age of the sample was 18.73 years, and 45.4% (n = 64) of the sample was male, while 53.9% (n = 76) of the sample was female. One person did not answer the question (.7%). For the variable of race/ethnicity, 109 of the research participants (77.4%) identified themselves as European American, 26 research participants identified themselves as African American (18.4%). One research participant identified himself or herself as Asian American (0.7%), two research participants identified themselves as Hispanic/Latino/a (1.4%), and 3 research participants identified themselves as Biracial/multiracial (2.1%). With respect to cultural
identification, 113 research participants (80.1%) identified themselves as members of the dominant culture, while 28 research participants (19.9%) identified themselves as members of the non-dominant culture. Finally, 122 research participants (86.5%) reported their grade point average was at or above 2.0, while 19 research participants reported their grade point average was below 2.0 (13.5%).

**Description of the Career and Self-Evaluation Course**

The course was a two credit hour, graded course that was taken for elective credit. The course met for 50 minutes twice a week for 15 weeks. The course description listed in the University of Toledo 2006-2008 General College Catalog outlines the broad purpose and goals of the Career and Self-Evaluation course: “This course offers an opportunity to explore two important considerations in choosing a career—career opportunities and requirements and individual interests, abilities, skills, needs, values and goals” (Retrieved September 5, 2007 from http://www.catalog.utoledo.edu/06-08Catalog/CourseDes.indd.pdf, p. 532). The course coordinator developed a common syllabus (Appendix C) that was used in all sections of the course. The specific course objectives listed on the syllabus were: to acquaint students with concepts of career planning; to demonstrate the importance of personal interests, values, skills to job satisfaction; and to facilitate the recognition of how personality type can affect interpersonal interactions in the workplace. Course outcomes included: students’ recognition that career planning requires personal effort; that investment in career planning is worthwhile; that career decision-making involves an integration of classroom readings, notes, career information, and personality, interest, and values assessments.
The assignments for the course are provided in the appendixes for the purpose of replicability of this study. Students were asked to complete the following assignments: a personal career history (Appendix D), the Occupation Information Network (O*Net) Career Interest Inventory (Appendix E), a work values assessment (Appendix F), a transferable skills assessment (Appendix G), the Career Exploration Inventory (Appendix H), and the Myers-Briggs Type Indicator Career Report (Appendix I). Students enrolled in the course also met with their instructor for an individual midterm meeting to discuss career decision-making progress and concerns. Students were also required to conduct an informational interview (Appendix J) with someone who has a career or occupation of interest, and present insights gained from the interview in class. Each week for eight weeks of the course, a speaker representing the various undergraduate colleges and majors at the university spoke to the students enrolled in the career exploration course about the majors and careers associated with each academic college. The culmination of the course was a requirement for the students to develop a career action plan (Appendix K). Students were asked to integrate information gained throughout the semester, and write a 3-5 page paper describing students’ long-term career goals.

Procedures

Approval from the Social, Behavioral, and Educational Institutional Review Board of the university was obtained prior to data collection (Appendix L). The researcher obtained permission to use the CDSE-SF for this study from the instrument author (N. E. Betz, personal communication, October 20, 2007 [Appendix M]). The coordinator of the Career and Self-Evaluation course, who designed the common syllabus used in all
sections of the course, also gave researcher verbal approval to gather data in the classroom (T. D. Lentz, personal communication, September 28, 2007). The researcher visited each of the sections of the Career and Self-Evaluation course during the first week of the semester to recruit research participants. The researcher explained the purpose of the study, and informed students that participation in the study was completely voluntary. The researcher also clarified for the students that study participation would not affect their grade in the course. Students were given the opportunity to ask any questions of the researcher. Students who declined to participate in the study did not complete the any documents, and no records were kept of students who declined to participate in the study.

Data Collection

Students who were willing to participate in the study were given class time to complete a written informed consent to participate in the study (Appendix N), the student information sheet and the CDSE-SF measure. The researcher marked a letter A in the top right corner of CDSE-SF to indicate Time 1 administration. Students who agreed to participate in the study were asked to sign the informed consent form. The researcher collected the informed consent forms first, and placed them in an envelope, to protect research participants’ confidentiality. The researcher kept the informed consent forms in a locked, secure location. Research participants were asked to code the information sheet and the CDSE-SF with the last four digits of their university identification number. This identification number served as the method by which the researcher matched the information sheet with the pretest of the CDSE-SF for each participant. The completed information sheets and CDSE-SF instruments were collected. During the last week of the
semester, the researcher returned to each of the Career and Self-Evaluation classes to administer the posttest. The researcher marked letter B in the top right corner of CDSE-SF to indicate Time 2 administration. Research participants were asked once again to code the CDSE-SF with the last four digits of their university identification number, to allow to researcher to match the completed posttest with the corresponding pretest for each participant.

Instrumentation

Student Information Sheet

The student information sheet asked for the study participants to indicate their age, sex, racial or ethnic identification which was used by the researcher to determine dominant or non-dominant cultural status, and whether their cumulative grade point average was at or above 2.0 or below 2.0.

Career Decision Self-Efficacy Scale-SF

The Career Decision Self-Efficacy Scale-SF (CDSE-SF) was chosen as the measure for this study due to its intensive use in career self-efficacy research (Betz & Taylor, 2006). For example, a cursory search in one database for research articles that have utilized the CDSE-SF or its parent instrument yielded 72 hits. Taylor and Betz (1983) utilized Crites’ (1978) model of career maturity as the theoretical basis for the development of the Career Decision Self-Efficacy Scale (CDSE). Crites’ model suggested that individuals who are able to make “good” career decisions have competence in five career choice processes: accurate self-appraisal; gathering occupational information; goal selection; making plans for the future; and problem
solving. The original 50-item scale of the CDSE included 10 items written to reflect each of the five competency areas (Betz & Taylor, 2006). Respondents were asked to indicate their level of confidence in their ability to successfully complete each task on a 10-point scale, with 9 indicating complete confidence, and 0 indicating No Confidence (Betz & Taylor, 2006). The CDSE was validated in a sample (n = 349) of 156 students attending a private college in the Midwest, and 193 students attending a public Midwestern state university (Betz & Taylor). The psychometric properties of the original instrument will be discussed in detail.

The internal consistency reliability in the original sample ranged from .86-.89 for subscales and .97 for total score (Taylor & Betz, 1983). Luzzo (1993) reported a six week test-retest reliability coefficient of .83 for the total score. Regarding content validity and factor structure, there is not convincing evidence to support the existence of the five subscales (Betz & Taylor, 2006). In the analysis of the data from the original sample, five factors were extracted, which when rotated, accounted for 52% of the total variance (Taylor & Betz). Factors 1 through 5 accounted for 16.9, 11.4, 10.7, 8.1, and 4.9% of the variance respectively, and 27 items loaded highest on the first factor of self-appraisal (Taylor & Betz).

The 50-item original scale was lengthy for use in counseling assessment and for use as a pre-post measure for the evaluation of career interventions (Betz & Taylor, 2006), so a 25-item CDSE-Short Form was developed (Betz, Klein, & Taylor, 1996). According to the manual for the CDSE-SF (Betz & Taylor, 2006), 5 items were eliminated from each of the five CDSE scales. Items were retained that were general in content, as well as meeting the criteria of item-own scale correlation greater or equal to .50, loading on
appropriate factor only in Taylor & Popma’s (1990) factor analysis; and recommendation of retention on the basis of a split-scale analysis of the subscale structure by Gati, Osipow, and Fassa (1994). The CDSE-SF retains the 5 subscale structure based on Crites’ (1978) Career Choice Competencies, with 5 items for each subscale (Betz & Taylor). The first iteration of the CDSE-SF utilized the existing 10 level response continuum of the original scale (Betz & Taylor).

The iteration of the CDSE-SF that will be utilized in this study is the CDSE-SF with the five-level response continuum. Respondents are asked to rank their level of confidence about completing each of the 25 tasks, some examples of which include “Use the internet to find information about occupations that interest you”; “Select one occupation from a list of potential occupations you are considering”; and “Make a career decision and then not worry whether it was right or wrong” (Betz et al., 1996). A 1 on the continuum signifies that respondents have “No Confidence” in their ability to complete the task; 2 indicates the respondents have “Very Little Confidence” in their ability to complete the task; 3 represents “Moderate Confidence” of respondents toward task completion; 4 represents “Much Confidence” of respondents toward task completion; and 5 represents “Complete Confidence” toward task completion (Betz et al).

According to Betz et al. (1996) the short form of the CDSE, like its parent instrument, does not provide strong evidence for a five-factor structure. Of the five subscales of the CDSE-SF, the most salient factors are the occupational information and goal selection factors (Betz & Taylor, 2006). Betz and Taylor recommended maintaining the five-subscale structure of the instrument because it is based on Crites’ (1978) Career Maturity theory and the five factor structure allows the design of career decision-making
interventions to target the five Career Choice competencies (Betz & Taylor, 2006). This study examined the factor structure of the instrument for this sample, and results of the exploratory factor analysis will be discussed the next chapter.

The CDSE-SF has a reliability coefficient of .94 for the total score (Betz & Taylor, 2006). Internal consistency reliability coefficients of the CDSE-SF were .73 for the self-appraisal subscale; .78 for the occupational information subscale; .83 for the goal selection subscale; .81 for the planning subscale; .75 for the problem solving subscale; and .94 for the total score (Betz and Taylor). The reported alpha levels for the five-level response continuum are .81 for the self-appraisal subscale; .82 for the occupational information subscale; .84 for the goal selection subscale; .84 for the planning subscale; .80 for the problem solving subscale; and .95 for the total score (Paulsen, as cited in Betz & Taylor). A more recent study by Betz, Hammond, and Multon (2005) corroborated the comparative reliability and validity of the five-level response continuum with the 10-level response continuum.

According to the manual for the CDSE, career indecision is the most significant and reliable correlate to career decision self-efficacy (Betz & Taylor, 2006). The original study (Taylor & Betz, 1983) established concurrent validity of the total score of the CDSE with the total score of the Career Decision Scale of -.40. Therefore, higher levels of career decision self-efficacy were related with lower levels of career indecision. The relationship between career indecision, as evidenced by scores on the Career Decision Scale and scores on the CDSE-SF are even stronger than for the parent instrument. Correlations ranged from -.19 to -.66 for Indecision, and from -.03 to -.76 for Certainty (Betz et al., 1996). The construct validity and the Cronbach’s reliability statistic were
examined for this study, and the results of this analysis will be discussed in the next chapter.

Data Analysis

This investigation used both descriptive and inferential statistics. Descriptive statistics included frequencies, means, standard deviations, and gain scores. In addition to answering the research questions posed by the study, the researcher encountered a large group of research participants who only completed the pretest of the CDSE-SF. The researcher compared the group of participants who completed the study (the continuers) with those participants who completed only the pretest of the study (the non-continuers) for statistical differences for the variables of mean total career decision self-efficacy pretest score, age, sex, cultural identification, and grade point average. Independent samples $t$-tests were utilized to compare differences in mean total career decision self-efficacy pretest score and age for the group of continuers with the non-continuers. Pearson chi-square analyses were utilized to compare mean differences of research participants’ sex, cultural identification and grade point average for the continuers and the non-continuers. Regarding the research hypotheses, a paired samples $t$-test was utilized to test the first hypothesis. A one-way analysis of variance statistical test was employed to test the remaining hypotheses of this study. The next chapter provides the results of this study.
Chapter Four

Results

This study examined the effect of a career exploration course on the career decision self-efficacy of traditional-age undecided college students. Career decision self-efficacy is defined as an individual’s confidence in his or her ability to make a career decision (Taylor & Betz, 1983). Career decision self-efficacy was measured in this study by the Career Decision Self-Efficacy Scale-Short Form (CDSE-SF). The Career Decision Self Efficacy Scale, parent instrument of the CDSE-SF, has been utilized in empirical research for over 20 years (Betz & Taylor, 2006). The short form was used in this study because of its strong psychometric properties and ease of administration. The CDSE-SF has shown strong concurrent validity with the construct of career indecision. According to the Betz and Taylor (2006) the most stable and significant correlate of career decision self-efficacy is career indecision. The concurrent validity of the CDSE-SF was examined in one study via correlation with career indecision, as measured by the Career Decision Scale (CDS). The relationship between of the CDSE-SF to Career Indecision ranged from -.19 to -.66 for the Indecision subscale of the CDS. This indicated that stronger perceptions of career decision self-efficacy are related to lower levels of career indecision (Betz & Taylor). The reliability of the CDSE-SF has also been examined, and the CDSE-SF has a reliability coefficient of .94 for the total score (Betz & Taylor). Finally, the
length of the instrument (25 questions) and five-level response continuum allowed for ease of administration to a large number of study participants.

The researcher recruited study participants from students enrolled in career exploration courses at a mid-sized, urban, open enrollment university in the Midwest. The objectives of the career exploration course were to introduce students to the concepts of career planning, to inform students of the academic majors available at the university, and to help students understand how personal interests, values, skills, and personality traits are linked to job satisfaction (See course syllabus, Appendix C.). The course covered a variety of career and self-exploration tasks, such as the identification of interests, values, skills, personality traits, and the connection of academic majors to career possibilities. All students enrolled in the career exploration course were undecided about an academic major. The purpose of this study was to examine how this career exploration course would affect undecided students’ career decision self-efficacy.

In order to determine whether career decision self-efficacy increased after taking a college career exploration course, the researcher administered a pretest of the CDSE-SF during the first week of the 15 week course, and returned at the end of the course to administer a posttest of the CDSE-SF. Therefore, a pretest-posttest single group research design was utilized (Campbell & Stanley, 1963). The researcher also gathered research participants’ demographic information in order to examine how the variables of sex, cultural identification, and grade point average might have an effect on the pretest and the posttest career decision self-efficacy scores. The variable of sex was chosen for investigation because the construct of career decision self-efficacy was developed from Bandura’s (1977) self-efficacy theory by Hackett and Betz (1981) as a way to
conceptualize the underrepresentation of women in certain professions. Self-efficacy beliefs are thought to have a primary influence on women’s career choices (Hackett, 1995). The researcher was interested whether female research participants would have lower baseline career decision self-efficacy as measured by the mean pretest total score on the CDSE-SF than male research participants’ mean pretest career decision self-efficacy total score on the CDSE-SF. Also in regard to participants’ sex, the researcher was interested in whether the career exploration course would have a greater effect on the career decision self-efficacy of female research than on the career decision self-efficacy of male research participants as measured by the mean total gain scores of the CDSE-SF for males and females.

Furthermore, career decision self-efficacy has been applied to career decision-making of members of non-dominant cultures (Gloria & Hird, 1999). Racial discrimination, occupational stereotyping, and a lack of racially or ethnically similar role models in occupations have been found contribute to lower career decision self-efficacy beliefs of members non-dominant cultural groups (Betz, 2000; Byars & Hackett, 1998). The researcher was interested in how research participants’ race or ethnicity would influence their career decision self-efficacy as measured by pretest and posttest CDSE-SF scores. The relatively homogeneous sample was not conducive to draw meaningful conclusions about career decision self-efficacy for specific racial and ethnic minority groups of college students. Therefore, in order to increase the sample size of students from non-European decent, the researcher categorized any participant that identified themselves with a non-European racial or ethnic group as a member of a non-dominant culture.
Participants who identified themselves as Caucasian or European American were categorized as members of the dominant culture. The researcher was interested whether research participants from non-dominant cultures would have lower baseline career decision self-efficacy as measured by the mean pretest total score on the CDSE-SF than the mean pretest career decision self-efficacy total score for research participants of the dominant culture. Also in regard to participants’ cultural identification, the researcher was interested in whether the career exploration course would have a greater effect on the career decision self-efficacy of research participants from non-dominant cultures than for research participants of the dominant culture as measured by the mean total gain score on the posttest of the CDSE-SF.

Finally, the researcher found no studies that examined the variables of career decision self-efficacy and grade point average for college students. The researcher was interested in whether research participants with cumulative grade point averages below 2.0 would have lower baseline career decision self-efficacy as measured by the mean pretest total score on the CDSE-SF than research participants with grade point averages at or above 2.0. Furthermore, the researcher was interested in whether participation in a career exploration course would result in larger gains in career decision self-efficacy for research participants with grade point averages below 2.0 than for research participants with grade point averages at or above 2.0 as measured by the mean posttest total gain score of the CDSE-SF.

A total of 141 research participants completed both the pretest and the posttest of the CDSE-SF, while 87 students only completed the pretest of the CDSE-SF. Research participants’ last four digits of their social security numbers served as the only identifier
used to match participants’ demographic information with the pretest and the posttest of the CDSE-SF. Consequently, the researcher had no way to identify or to contact the 87 research participants who did not complete the posttest. Sample demographic information for the pretest only group (the non-continuers) and the group that completed both the pretest and the posttest (the continuers) is provided. The researcher was unable to determine reasons for such a large rate of attrition; however, the group of continuers and non-continuers were examined for statistically meaningful differences across the variables of interest for this study: the mean career decision self-efficacy pretest total score, sex, cultural identification, and grade point average. The results of the analysis will be reported in this chapter, and implications will be discussed in detail in the subsequent chapter.

This investigation used both descriptive and inferential statistics to analyze the data gathered. Descriptive statistics are used to describe the basic features of the data (Fraenkel & Wallen, 2003). This study utilized frequencies, means, standard deviations, and gain scores. Inferential statistics are data analysis techniques that are used to make inferences from the data gathered from a sample to a larger population (Fraenkel & Wallen). This study utilized the Student’s *t*-test, the one-way analysis of variance and the Pearson chi-square statistical tests. The Student’s *t*-test is the most frequently used inferential statistical test for variables measured on the interval or ratio scale (Stevens, 1996). Student’s *t*-tests are used to determine if there are differences between group means. In this study, paired samples and independent samples *t*-tests were utilized. Research participants’ mean pretest total score and mean posttest total score on the CDSE-SF were analyzed using paired samples *t*-tests to determine if there was a
statistically significant change in the scores from pretest to posttest. Independent samples
$t$-tests were conducted to compare the mean age and the mean career decision self-
efficacy total score for the research participants that completed the study and for those
that did not.

The one-way analysis of variance statistical test is also used to determine statistical
significance among two or more group means (Fraenkel & Wallen, 2003). One-way
analysis of variance was used to test for differences between the mean career decision
self-efficacy total score of the group of continuers by sex, cultural identification and
grade point average at the time of the pretest. The one-way analysis of variance
statistical test was also used to examine differences between the mean total gain score on
the CDSE-SF from pretest to posttest, and differences between the mean total gain scores
on the variables of sex, cultural identification, and grade point average for the group of
continuers.

In order to determine whether differences existed between the continuers and non-
continuers on the variables of sex, cultural identification, and grade point average,
Pearson chi-square statistical tests were performed. The chi-square is a nonparametric
statistical test that compares frequencies of categorical variables, to determine whether
the frequencies found in the research are significantly different from the expected
frequencies, or those frequencies that would be found by chance (Fraenkel & Wallen,
2003).

The construct validity and reliability of the CDSE-SF for this study were also
examined. Construct validity is the degree to which an instrument measures its intended
construct (Fraenkel & Wallen, 2003). The construct validity of the CDSE-SF was
examined via factor analysis, which is a statistical method used to condense a group of variables to a smaller number of factors (Fraenkel & Wallen). Reliability is defined as the degree to which the scores attained on a given instrument consistently measure the construct of the instrument (Fraenkel & Wallen). The Cronbach’s alpha statistic was calculated to determine the reliability of the instrument for this sample.

The first research hypothesis stated that traditional-age college students’ mean posttest total score on the Career CDSE-SF would be significantly higher than their mean pretest total score on the CDSE-SF after completing the career exploration course. To test this hypothesis, the mean pretest total score and mean posttest total gain score of the research participants on the CDSE-SF were analyzed using paired samples $t$-tests to determine if there was a statistically significant change in the scores from pre to posttest. To test the remaining hypotheses, a one-way analysis of variance was conducted to examine the effect of the variables of sex, cultural identification, and grade point average on the mean career decision self-efficacy pretest total score and on the mean posttest total gain score for study participants. All hypotheses were tested at the .05 level of significance.

Sample Demographics

A total of 228 participants took the pretest of the CDSE-SF. A total of 141 of the participants (the continuers) completed both the pretest and the posttest. A total of 87 participants took only the pretest (the non-continuers). Tables 1 and 2 present the demographic information of the continuers and non-continuers, and include age, sex, race/ethnicity, cultural identification and grade point average. The continuers in this study ($N = 141$) ranged in age from 18 to 28 years, with a mean age of 18.73 (SD = 1.31).
Regarding the sex of the continuers, 45.4% (n = 64) identified themselves as male, while 53.9% of the continuers (n = 76) identified themselves as female. One person did not answer this question. For the variable of race/ethnicity, 77.4% of the continuers (n = 109) identified themselves as European American, 18.4% of the continuers identified themselves as African American (n = 26), 0.7% of the continuers identified themselves as Asian American (n = 1), 1.4% of the continuers identified themselves as Hispanic/Latino/a (n = 2), and 2.1% of the continuers identified themselves as Biracial/multiracial (n = 3).

With respect to cultural identification, 80.1% of the continuers (n = 113) identified themselves as members of the dominant culture, while 19.9% of the continuers (n = 28) identified themselves as members of the non-dominant culture. Finally, 86.5% of the continuers (n = 122) reported that their grade point average was at or above 2.0, while 13.5% of the continuers (n = 19) reported that their grade point average was below 2.0.

The age range of the non-continuers (n = 87) was from 18 to 44 with a mean age of 19.35 (SD = 3.00). Regarding the sex of the non-continuers, 60.5% (n = 53) identified themselves as male, 37.9% (n = 33) identified themselves as female. One person did not answer this question. For the variable of race/ethnicity, 65.5% of the non-continuers identified themselves as European American (n = 57), 29.9% of the non-continuers identified themselves as African American (n = 26), 1.1% of the non-continuers identified themselves as Hispanic/Latino/a (n = 1), 2.4% of the non-continuers identified themselves as Other (n = 2), and one participant did not answer the question. Regarding cultural identification, 66.7% of the non-continuers (n = 58) identified themselves with the dominant culture, while 32.2% (n = 27) identified themselves with non-dominant
cultures. One participant did not respond to this question. Finally, 59.8% (n = 52) of the
non-continuers reported their grade point average was at or above 2.0, while 39.1% (n = 33) reported that their grade point average was below 2.0. One participant did not answer this question.

TABLE 1
Demographic Information for the Continuers

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>141</td>
<td>N/A</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>64</td>
<td>45.4</td>
</tr>
<tr>
<td>Female</td>
<td>76</td>
<td>53.9</td>
</tr>
<tr>
<td>Did not answer</td>
<td>1</td>
<td>.7</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European American</td>
<td>109</td>
<td>77.4</td>
</tr>
<tr>
<td>African American</td>
<td>26</td>
<td>18.4</td>
</tr>
<tr>
<td>Asian American</td>
<td>1</td>
<td>.7</td>
</tr>
<tr>
<td>Hispanic/Latino/a</td>
<td>2</td>
<td>1.4</td>
</tr>
<tr>
<td>Biracial/multiracial</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cultural Identification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominant</td>
<td>113</td>
<td>80.1</td>
</tr>
<tr>
<td>Non-dominant</td>
<td>28</td>
<td>19.9</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 2.0</td>
<td>122</td>
<td>86.5</td>
</tr>
<tr>
<td>Below 2.0</td>
<td>19</td>
<td>13.5</td>
</tr>
</tbody>
</table>
TABLE 2
Demographic Information for the Non-Continuers

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
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<td>N/A</td>
</tr>
<tr>
<td>19.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>53</td>
<td>60.9</td>
</tr>
<tr>
<td>Female</td>
<td>33</td>
<td>37.9</td>
</tr>
<tr>
<td>Did not answer</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European American</td>
<td>57</td>
<td>65.5</td>
</tr>
<tr>
<td>African American</td>
<td>26</td>
<td>29.9</td>
</tr>
<tr>
<td>Asian American</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hispanic/Latino/a</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Biracial/multiracial</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Did not answer</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Cultural Identification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominant</td>
<td>58</td>
<td>66.7</td>
</tr>
<tr>
<td>Non-dominant</td>
<td>28</td>
<td>32.2</td>
</tr>
<tr>
<td>Did not answer</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Grade Point Average</td>
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<td></td>
</tr>
<tr>
<td>Above 2.0</td>
<td>52</td>
<td>59.8</td>
</tr>
<tr>
<td>Below 2.0</td>
<td>34</td>
<td>39.1</td>
</tr>
<tr>
<td>Did not answer</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Statistical Comparison of the Continuers and Non-Continuers

The researcher conducted statistical analyses to compare the group of research participants who completed both the pretest and posttest of the CDSE-SF with those that only completed the pretest of the CDSE-SF in order to determine whether there were statistically significant differences between the two groups. The mean career decision
self-efficacy total score on the pretest of the CDSE-SF for the group of continuers and the group of non-continuers were analyzed for statistical significance. The data were also analyzed for significant differences between the continuers and non-continuers for the variables of age, cultural identification, and grade point average.

Independent samples *t*-tests were conducted to compare the means of the continuer group and the non-continuer group on age and total career decision self-efficacy score on the pretest of the CDSE-SF. Statistical significance was defined as *p* < .05. Table 3 presents the mean age and standard deviation of the continuers and non-continuers, as well the mean self-efficacy scores and standard deviation on the CDSE-SF. The mean age of the continuers was 18.73 (SD = 1.31), and the mean age of the non-continuers was 19.35 (SD = 3.00).

After running the analysis, the researcher identified a problematic result for the first *t*-test. Parametric tests such as the *t*-test assume homogeneity of variance, which describes the assumption that the populations under examination will share equal variances (PROPHET Statguide, n.d.). The Levene’s test that was conducted to examine this assumption of the homogeneity of variance for age between the two groups indicated that equal variances should not be assumed for the *t*-test [F = 4.18; *p* = .04 (Stevens, 2002)]. If the assumption of homogeneity of variance is not met, the statistical test results may not be valid (PROPHET Statguide, n.d.). The result yielded a calculated *t* for this analysis of 1.83 (df = 1, 106; *p* = .069), which was smaller than the 2-tailed Table (Stevens, 2002) of 1.960, *p* > .05. The effect size is .47. Effect size is index that measures the magnitude of a treatment effect (Cohen, 1992). Effect size quantifies the difference between groups (Coe, 2002, obtained March 10, 2009 from
http://www.leeds.ac.uk/educol/documents/00002182.htm). The magnitude of effect size and category vary depending on the statistical technique utilized. Cohen suggested three levels of effect sizes ($f^2$): small (.20), medium (.50), and large (.80). The effect size of .47 is considered medium (Cohen). Since the assumption of homogeneity of variance was violated, the conclusion that the mean age of the non-continuers was not statistically different from the mean age of the continuers might not have been a valid conclusion. Upon examination of the data, the researcher found one individual in the non-continuers group with an age of 44, which was outside the definition of a traditional-age college student for this study. The researcher removed this outlier from the data set and re-ran the t-test. The results of the Levene’s test ($F = .372; p = .542$) indicated that the assumption of homogeneity of variance had been met (Stevens, 2002). The calculated $t$ for this analysis of 1.84 ($df = 1, 225; p = .067$) was smaller than the 2-tailed Table (Stevens, 2002) of 1.960, $p > .05$. The effect size of .23 is considered small (Cohen). The researcher arrived at the same conclusion that there was not a statistically significant difference in the age of the continuers and non-continuers.

A second independent samples t-test was conducted to compare the means of the continuer group and the non-continuer group on the mean career decision self-efficacy total score on the pretest of the CDSE-SF. The mean career decision self-efficacy total score for the continuers group was 98.17 (SD = 13.80), and 82.28 (SD = 13.45) for the non-continuers. A Levene’s test for equality of variance for total self-efficacy score between the two groups indicated that equal variances could be assumed for the t-test [(F = .107; p = .744) Stevens, 2002]. The calculated $t$ for this analysis of 8.51 ($df = 1, 226; p = .000$) was larger than the 2-tailed Table (Stevens) of 1.960, $p < .05$. The effect size of
1.15 is considered large (Cohen, 1992). Therefore, the researcher concluded that not only was the mean career decision self-efficacy total score of the non-continuers lower at a statistically significant level than the mean career decision self-efficacy total score of the continuers, but that the magnitude of the difference between the mean career decision self-efficacy total score of the continuers and non-continuers was large.

To further compare the group of continuers with the non-continuers, the variables of sex, cultural identification and grade point average were analyzed using the 2-tailed Pearson Chi Square statistical test. The researcher conducted multiple tests on this data, which increased the potential for finding a Type 1 error, or finding statistical significance when there is none. To control for the build up of alpha level, a Bonferroni correction was applied to the a priori alpha of .05 (Newman, Fraas, & Laux, 2001). To calculate the corrected alpha level, the a priori alpha of .05 was divided by 3, which represented the variables of sex, cultural identification, and grade point average, yielding the corrected alpha level of .016. A statistically significant chi-square test indicates that larger frequencies of categorical variables were observed in research than what would be theoretically expected (Sani & Todman, 2006), while the standardized residual is an indicator of the effect size for the chi-square statistic (Field, 2005). A standardized residual of 2.0 or greater is considered a meaningful difference in the observed frequencies compared with the expected frequencies (Field). Table 4 displays the frequency of males and females in the category of continuers and non-continuers, the expected frequencies, and the standardized residuals. The results of the chi-square analysis utilizing the adjusted alpha (p < .016) indicated that there was no significant
difference between the sex of the continuers and non-continuers \[ \chi^2 = 5.40 \text{ (df = 1) } p = .02 \].

Furthermore, no statistically significant difference was found between the continuers and non-continuers for the variable of cultural identification \[ \chi^2 = 4.63 \text{ (df = 1) } p = .031 \]. Table 5 displays the frequency of research participants who identified themselves as members of the dominant culture and research participants who identified themselves as members of a non-dominant culture. The frequencies, the expected frequencies, and the standardized residuals are provided. Table 6 displays the frequencies, expected frequencies, and standardized residuals for the continuers and non-continuers based on the variable of grade point average. For the variable of grade point average, it was found that a greater number of non-continuers had grade point averages below 2.0 than the continuers \[ \chi^2 = 20.27 \text{ (df = 1) } p = .000 \]. After comparing the expected and actual frequencies for continuers and non-continuers on the variable of grade point average, the number of non-continuers with grade point averages below 2.0 (n = 34) was higher than expected. A review of the standardized residual (R = 3.1) indicated that the chi-square result approached an effect size that indicated that difference between the continuers and non-continuers for the variable of grade point average was a large difference (Field, 2005).

In summary, the group of continuers, and the group of non-continuers were examined for differences on several variables: mean career decision self-efficacy total score on the pretest of the CDSE-SF, age, cultural identification, and grade point average. The two groups were found to not statistically differ by age, sex, or cultural identification. However, two statistically significant findings emerged regarding total pretest self-
efficacy score and grade point average. The non-continuers had statistically lower scores on the pretest of the CDSE-SF than the continuers, as well as a greater number of participants who reported grade point averages below 2.0 than the continuers.

TABLE 3

Age and Self-Efficacy Scores for Continuers and Non-Continuers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Classification</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Continuers</td>
<td>141</td>
<td>18.73</td>
<td>1.31</td>
</tr>
<tr>
<td></td>
<td>Non-Continuers</td>
<td>87</td>
<td>19.35</td>
<td>3.00</td>
</tr>
<tr>
<td>Total Score</td>
<td>Continuers</td>
<td>141</td>
<td>98.17</td>
<td>13.80</td>
</tr>
<tr>
<td></td>
<td>Non-Continuers</td>
<td>87</td>
<td>82.28</td>
<td>13.45</td>
</tr>
</tbody>
</table>

TABLE 4

Chi-square Frequencies and Standardized Residuals for Continuers and Non-Continuers by Sex

<table>
<thead>
<tr>
<th>Classification</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>64</td>
<td>76</td>
<td>86</td>
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<tr>
<td>Expected Frequency</td>
<td>72.5</td>
<td>67.5</td>
<td>140</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Non-Continuers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>53</td>
<td>33</td>
<td>86</td>
</tr>
<tr>
<td>Expected Frequency</td>
<td>44.5</td>
<td>41.5</td>
<td>86</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>1.3</td>
<td>-1.3</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 5

Chi-square Frequencies and Standardized Residuals for Continuers and Non-Continuers by Cultural Identification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Dominant</th>
<th>Non-Dom.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>113</td>
<td>28</td>
<td>141</td>
</tr>
<tr>
<td>Expected Frequency</td>
<td>106.2</td>
<td>34.8</td>
<td>141</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>.7</td>
<td>-1.2</td>
<td></td>
</tr>
</tbody>
</table>

| Non-Continuers |          |          |       |
| Frequency      | 58       | 28       | 86    |
| Expected Frequency | 64.8  | 21.2     | 86    |
| Std. Residual  | -.8      | 1.5      |       |

### TABLE 6

Chi-square Frequencies and Standardized Residuals for Continuers and Non-Continuers by GPA

<table>
<thead>
<tr>
<th>Classification</th>
<th>GPA ≥ 2.0</th>
<th>GPA ≤ 2.0</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>122</td>
<td>19</td>
<td>141</td>
</tr>
<tr>
<td>Expected Frequency</td>
<td>108.1</td>
<td>32.9</td>
<td>141</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>1.3</td>
<td>-2.4</td>
<td></td>
</tr>
</tbody>
</table>

| Non-Continuers |           |           |       |
| Frequency      | 52        | 34        | 86    |
| Expected Frequency | 65.9  | 20.1      | 86    |
| Std. Residual  | -1.7      | 3.1       |       |

Reliability and Validity of the CDSE-SF

To assess the internal consistency reliability of the CDSE-SF, the Chronbach’s alpha statistic was calculated. The alpha level for the CDSE-SF for this sample was .93, indicating that the items of the scale appear to be highly correlated and are measuring the same construct (Fraenkel & Wallen, 2003). In addition, essential to the validity of any
instrument is construct validity, or the degree to which an instrument measures the intended construct (Fraenkel & Wallen). Exploratory factor analysis is a statistical method used to uncover the structure of a larger set of variables (Field, 2005). An exploratory factor analysis of the CDSE-SF was conducted to determine if the structure of the CDSE-SF for this sample was consistent with the factor structure identified by the instrument authors. The authors of the CDSE-SF suggest a five factor structure based on Crites’ (1978) career maturity theory (Taylor & Betz, 1983). The five factors identified by Taylor and Betz are 1) accurate self-appraisal; 2) gathering occupational information; 3) goal selection; 4) making plans for the future; and 5) problem solving. The five factor structure, however, has not been firmly established for the instrument. Another examination of the factor structure of the CDSE-SF by Peterson and delMas (1994) identified a two factor structure for the instrument: decision-making, and information gathering.

The exploratory factor analysis was conducted for this study, utilizing principal component analysis as the method of data extraction, with Varimax rotation. The Varimax rotation was utilized to simplify the interpretation of the principal component analysis. After the Varimax rotation, each variable tends to be associated with one factor, and each factor includes fewer variables (Abdi, 2003). In addition, Varimax rotates the factors to maximize the variance of the factor loadings (Abdi). Table 7 presents the results of the factor analysis. The analysis yielded four factors, which accounted for 62.33% of the total variance for the entire set of variables. One large factor, with an Eigen value of 11.71 accounted for 46.8% of the total variance across all items. Factors 2, 3, and 4 accounted for 6.41% (Eigen value = 1.60), 5.00% (Eigen value = 1.25), and
4.04% (Eigen value = 1.01) of the variance respectively. A review of the scree plot supported the interpretation of a four factor structure (see Figure 1). However, the fourth factor only loaded one item; therefore, this factor could not be adequately defined. In addition, the Eigen values “leveled off” on the scree plot after three factors (Neil, 2008). Therefore, the fourth factor was not retained. The three remaining factors, which accounted for 58.29% of the total variance, and their item loadings, were examined.

Table 8 presents the results of the pattern matrix for principal component analysis with Varimax rotation for the CDSE-SF. The first factor was comprised of 11 items, the second factor was comprised of 10 items, and the third factor was comprised of three items. Several items (4, 17, 21, and 22) loaded equally on more than one factor. The items that loaded on the first factor appeared to be related to decision-making. An example of an item on this factor is “select one major from a list of potential majors you are considering.” The second factor included 10 items, and appeared to be related to information gathering. An example of an item on this factor is “use the internet to find information about occupations that interest you.” One of the items on the third factor appeared to relate to self-appraisal: “Accurately assess your abilities,” while the remaining items on the third factor seemed to fit with the information gathering factor identified by Peterson and delMas (1994). These items are “find out the employment trends for an occupation over the next ten years,” and “determine the steps to take if you are having academic trouble with an aspect of your chosen major.” The item that loaded on the discarded fourth factor appeared to relate to decision-making: “change majors if you did not like your first choice.”
The factor analysis of the CDSE-SF for this study did not support a five factor structure, which was acknowledged in the technical manual of the instrument as only “marginally supported” (Betz & Taylor, p. 11, 2006). In conclusion, the results of the factor analysis for this study more closely aligned with the two factor structure of decision-making and information gathering suggested by Peterson and delMas (1994).

### TABLE 7
Principal Component Analysis of the CDSE-SF

<table>
<thead>
<tr>
<th>Component</th>
<th>Total</th>
<th>% of Variance</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11.71</td>
<td>46.8</td>
<td>46.8</td>
</tr>
<tr>
<td>2</td>
<td>1.60</td>
<td>6.41</td>
<td>53.28</td>
</tr>
<tr>
<td>3</td>
<td>1.25</td>
<td>5.00</td>
<td>58.29</td>
</tr>
<tr>
<td>4</td>
<td>1.01</td>
<td>4.04</td>
<td>62.33</td>
</tr>
</tbody>
</table>
TABLE 8

Pattern Matrix for Principal Component Analysis with Varimax Rotation for the CDSE-SF

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.125</td>
<td>.704</td>
<td>.255</td>
<td>-.120</td>
</tr>
<tr>
<td>2</td>
<td>.795</td>
<td>.147</td>
<td>.126</td>
<td>-.032</td>
</tr>
<tr>
<td>3</td>
<td>.697</td>
<td>.171</td>
<td>.171</td>
<td>.025</td>
</tr>
<tr>
<td>4</td>
<td>.459</td>
<td>.268</td>
<td>.474</td>
<td>.152</td>
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<td>5</td>
<td>.403</td>
<td>.387</td>
<td>.526</td>
<td>.072</td>
</tr>
<tr>
<td>6</td>
<td>.807</td>
<td>.127</td>
<td>.124</td>
<td>-.111</td>
</tr>
<tr>
<td>7</td>
<td>.574</td>
<td>.303</td>
<td>.352</td>
<td>-.066</td>
</tr>
<tr>
<td>8</td>
<td>.518</td>
<td>.457</td>
<td>.280</td>
<td>-.035</td>
</tr>
<tr>
<td>9</td>
<td>.714</td>
<td>.260</td>
<td>.271</td>
<td>.164</td>
</tr>
<tr>
<td>10</td>
<td>.167</td>
<td>.141</td>
<td>.846</td>
<td>-.114</td>
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<tr>
<td>11</td>
<td>.694</td>
<td>.340</td>
<td>.239</td>
<td>.019</td>
</tr>
<tr>
<td>12</td>
<td>.163</td>
<td>.579</td>
<td>.301</td>
<td>.392</td>
</tr>
<tr>
<td>13</td>
<td>-.012</td>
<td>-.035</td>
<td>-.038</td>
<td>.847</td>
</tr>
<tr>
<td>14</td>
<td>.338</td>
<td>.620</td>
<td>.171</td>
<td>-.084</td>
</tr>
<tr>
<td>15</td>
<td>.130</td>
<td>.662</td>
<td>.380</td>
<td>-.248</td>
</tr>
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<td>16</td>
<td>.725</td>
<td>.350</td>
<td>.027</td>
<td>.170</td>
</tr>
<tr>
<td>17</td>
<td>.502</td>
<td>.527</td>
<td>.027</td>
<td>.204</td>
</tr>
<tr>
<td>18</td>
<td>.553</td>
<td>.313</td>
<td>.284</td>
<td>.117</td>
</tr>
<tr>
<td>19</td>
<td>.379</td>
<td>.599</td>
<td>.182</td>
<td>.007</td>
</tr>
<tr>
<td>20</td>
<td>.750</td>
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<td>-.067</td>
</tr>
<tr>
<td>21</td>
<td>.408</td>
<td>.472</td>
<td>.456</td>
<td>.149</td>
</tr>
<tr>
<td>22</td>
<td>.524</td>
<td>.551</td>
<td>.105</td>
<td>-.140</td>
</tr>
<tr>
<td>23</td>
<td>.316</td>
<td>.575</td>
<td>.347</td>
<td>.138</td>
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<td>24</td>
<td>.254</td>
<td>.790</td>
<td>-.077</td>
<td>.161</td>
</tr>
<tr>
<td>25</td>
<td>.433</td>
<td>.631</td>
<td>.219</td>
<td>.073</td>
</tr>
</tbody>
</table>

Testing of Hypotheses and Research Questions

In order to test the hypotheses and answer the research questions of this study, statistical analyses were conducted. The direction of the research questions tested in this study was predicted prior to conducting the analyses. As such, a one-tailed test of significance was conducted for each hypothesis (Newman & Newman, 1994). The research questions were planned tests (Newman, Fraas, & Laux, 2001). That is, the
research questions were based on theory and previous research. As such, the alpha level of .05 was not adjusted. Therefore, a $p$ value of .05 or less was required before the researcher could be 95% confident that a relationship existed. Estimates of power (Stevens, 1996) were conducted based upon the most conservative estimates and a total sample size of 141. Power estimates give one an estimate of the Type II error rate for different size effects that may exist in the population. As previously mentioned, the magnitude of effect size and category vary depending on the statistical technique utilized. Cohen (1992) suggested three levels of effect sizes ($f^2$): small (.20), medium (.50), and large (.80). The researcher decided to calculate an estimate of power for each suggested effect size. Based upon these estimates, if there was a significant relationship in the population and the effect size was small, power was .69. That means that a small effect will be found about 69% of the time (Cohen). If the effect size was at least medium, power was .99. Therefore, the researcher was confident that if relationships existed, the statistical procedures and designs detected them even if the effect size was small (.20).

**Research Question and Hypothesis 1**

The first research question of the study asked if traditional-age college students’ scores on the CDSE-SF would increase from Time 1 at the beginning of a career exploration course, to Time 2, after completing the career exploration course. The research hypothesis predicted that traditional-age college students’ mean posttest total score on the CDSE-SF would be significantly higher than the mean pretest total score on the CDSE-SF after completing a career exploration course. The lowest possible score on the CDSE-SF is 25, which indicates that an individual has “no confidence” in his or her
ability to make a career decision (Taylor & Betz, 1983). A score of 50 indicates that an individual has “very little confidence” in his or her ability to make a career decision, while a score of 75 indicates that an individual has “moderate” confidence in his or her ability to make a career decision (Taylor & Betz). A score of 100 on the CDSE-SF indicates that an individual has “much” confidence in his or her ability to make a career decision, while the highest possible score of the CDSE-SF is 125, which indicates that an individual has “complete confidence” in his or her ability to make a career decision (Taylor & Betz). Therefore, higher scores indicate greater career decision self-efficacy (Taylor & Betz). Table 9 displays the range, means, and standard deviations for the pretest and posttest of the CDSE-SF for this sample.

The scores on the pretest of the CDSE-SF for this sample ranged from 57-122, with a mean score of 85.22 and a standard deviation of 13.55. Therefore, the average confidence level of this study’s research participants in their ability to make a career decision at the start of the career exploration course was “moderate.” The scores on the posttest of the CDSE-SF for this sample ranged from 65 to 124, with a mean score of 98.15, and a standard deviation of 13.79. To test this hypothesis, the researcher calculated a paired samples *t*-test, comparing the mean total CDSE-SF scores from Time 1 to Time 2. Table 10 displays the results of this analysis. The calculated *F* for this analysis of 10.35 (df = 1, 140; *p* = .000) was larger than the 1-tailed Table (Stevens, 2002) of 1.645, *p* < .05. The effect size of .954 is considered large (Cohen, 1992). The average confidence level of this study’s research participants in their ability to make a career decision increased to “much confidence” at the end of the career exploration course. Therefore, the researcher failed to reject the hypothesis.
TABLE 9

Range, Means, and Standard Deviations of CDSE-SF Pretest and Posttest Scores

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest CDSE-SF</td>
<td>141</td>
<td>57-122</td>
<td>85.22</td>
<td>13.55</td>
</tr>
<tr>
<td>Posttest CDSE-SF</td>
<td>141</td>
<td>65-124</td>
<td>98.15</td>
<td>13.79</td>
</tr>
</tbody>
</table>

TABLE 10

Paired Samples $t$-test Comparison of Group Means for CDSE-SF Pretest and Posttest Scores

<table>
<thead>
<tr>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>$t$-value</th>
<th>p</th>
<th>$\kappa$</th>
</tr>
</thead>
<tbody>
<tr>
<td>141</td>
<td>12.92</td>
<td>14.82</td>
<td>10.35</td>
<td>.000</td>
<td>.954</td>
</tr>
</tbody>
</table>

Research Question and Hypothesis 2

The second research question of the study asked whether female traditional-age college students reported lower career decision self-efficacy at Time 1 than male traditional-age college students at Time 1. The statistical hypothesis was that female traditional-age college students’ mean pretest total score on the CDSE-SF would be significantly lower than male traditional-age college students’ mean pretest total score on the CDSE-SF. Table 11 displays the results of this analysis. The scores on the pretest of the CDSE-SF for females ($n = 75$) ranged from 57-107. The scores on the pretest of the CDSE-SF for males ($n = 65$) ranged from 58-122. A one-way analysis of variance was calculated on the total pretest scores for males and females in this sample. The $F$ statistic calculated in this analysis of 2.58 was smaller than the critical $F$ value of 3.84 (Stevens,
The analysis was not significant, $F(1,138) = 2.58$, $p = .110$. The effect size of .28 is considered small (Cohen, 1992). Therefore, this hypothesis was rejected.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>F-Statistic</th>
<th>p</th>
<th>$\kappa$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>65</td>
<td>58-122</td>
<td>86.52</td>
<td>14.28</td>
<td>2.58</td>
<td>.110</td>
<td>.28</td>
</tr>
<tr>
<td>Females</td>
<td>75</td>
<td>57-107</td>
<td>82.90</td>
<td>12.35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question and Hypothesis 3

The third research question asked whether female traditional-age college students would report larger gains in career decision self-efficacy at Time 2 than male traditional-age college students at Time 2. The statistical hypothesis was that female traditional-age college students would show significantly larger gains in career decision self-efficacy as evidenced by the mean posttest total gain score on the CDSE-SF than male research participants’ mean posttest total gain score on the CDSE-SF. To answer question three, the researcher had to calculate the total gain score of each research participant on the CDSE-SF by subtracting the Time 1 total score from the Time 2 total score. A one way analysis of variance was calculated on the mean total gain scores of males and females. Table 12 displays the results of this analysis. The mean total gain score for males was 11.76, and the mean total gain score for females was 15.48. The F statistic calculated in this analysis of 1.997 was smaller than the critical F value of 3.84 (Stevens, 2002).
The results of the analysis were not significant, $F(1,138) = 1.997, p = .160$. The effect size of .25 is considered small (Cohen, 1992). Therefore, this hypothesis was rejected.

Table 12
One-Way ANOVA Results for Comparison of Posttest Gain Score (GS) Group Means by Sex

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>GS Range</th>
<th>M GS</th>
<th>SD</th>
<th>F-Statistic</th>
<th>p</th>
<th>κ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>65</td>
<td>-17 - 68</td>
<td>11.76</td>
<td>15.07</td>
<td>1.997</td>
<td>.160</td>
<td>.25</td>
</tr>
<tr>
<td>Females</td>
<td>75</td>
<td>-34 - 55</td>
<td>15.48</td>
<td>15.85</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question and Hypothesis 4

The fourth research question asked whether traditional-age college students who identified themselves as members of a non-dominant culture would report lower career decision self-efficacy at Time 1 than traditional-age college students who identified with the dominant culture at Time 1. The statistical hypothesis was that traditional-age college students who identified themselves as members of a non-dominant culture would have a significantly lower mean pretest total score on the CDSE-SF than the mean pretest total score of traditional-age college students who identified as members of the dominant culture. The scores on the pretest of the CDSE-SF for participants who identified themselves as members of the dominant culture ($n = 113$) ranged from 57-122. The scores on the pretest of the CDSE-SF for participants who identified themselves as members of a non-dominant culture ($n = 28$) ranged from 73-116.

Study participants who identified as members of non-dominant cultures had higher self-efficacy scores on the pretest of the CDSE-SF ($M = 89.42$) than participants who
identified as members of the dominant culture (M = 83.50). The raw data indicated that this hypothesis would be rejected. The researcher chose to conduct the one-way analysis of variance on the mean pretest total score for research participants based on the variable of cultural identification to determine the effect size, or the magnitude of the difference between the mean pretest CDSE-SF scores of participants from the dominant and non-dominant cultures (Coe, 2002). Table 13 displays the results of this analysis. The F statistic calculated in this analysis of 5.45 was larger than the critical F value of 3.84 (Stevens, 2002). The analysis showed a significant difference between the mean pretest total score for the research participants from the dominant and the non-dominant cultural groups, $F(1,139) = 5.45, p = .021$. The effect size of -.44 is considered medium (Cohen, 1992). As the data indicated, this hypothesis was rejected.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>F-Statistic</th>
<th>p</th>
<th>κ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant Culture</td>
<td>113</td>
<td>57-122</td>
<td>83.92</td>
<td>13.47</td>
<td>5.45</td>
<td>.021</td>
<td>-.44</td>
</tr>
<tr>
<td>Non-Dominant Culture</td>
<td>28</td>
<td>73-116</td>
<td>90.50</td>
<td>12.79</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Research Question and Hypothesis 5**

The fifth research question asked whether traditional-age college students who identified themselves as members of a non-dominant culture would report larger gains in career decision self-efficacy at Time 2 than traditional-age college students who
identified themselves as members of the dominant culture at Time 2. The statistical hypothesis was that traditional-age college students who identified themselves as members of a non-dominant culture would show significantly greater gains in career decision self-efficacy as evidenced by the mean posttest total score on the CDSE-SF than the mean posttest total score of participants who identified themselves as members of the dominant culture.

To answer the fifth research question, the researcher used the gain score calculated by subtracting the Time 1 total self-efficacy score on the CDSE-SF from the Time 2 total self-efficacy score on the CDSE-SF for the variable of cultural identification. The gain scores for participants who identified themselves as members of the dominant culture ranged from -11 to 68, with a mean gain score of 15.50 (SD = 14.93). The gain scores for participants who identified themselves as members of non-dominant cultures ranged from -34 to 43, with a mean gain score of 6.57 (SD = 15.91). The raw data indicated that research participants from non-dominant cultures had a lower mean total posttest gain score than research participants from the dominant culture. However the researcher chose to conduct the one-way analysis of variance on the mean total gain score on the CDSE-SF at Time 2 for participants based on the variable of cultural identification to calculate the effect size, or the magnitude of the difference between the two groups (Coe, 2002). The F statistic calculated in this analysis of 7.88 was larger than the critical F value of 3.84 (Stevens, 2002). The analysis was significant, \( F(1,139) = 7.88, p = .006 \). The effect size of .61 is considered medium (Cohen, 1992). The results of this analysis indicate that participants from both the dominant and non-dominant cultures reported gains in career decision self-efficacy from Time 1 to Time 2. However, participants who
identified with the dominant culture had a mean total gain score of 15.53 in career decision self-efficacy from Time 1 to Time 2, while participants who identified with non-dominant cultures showed a total gain score of 6.57 in career decision self-efficacy from Time 1 to Time 2. Therefore, this hypothesis was rejected.

Table 14

<table>
<thead>
<tr>
<th>Cultural Identification</th>
<th>N</th>
<th>GS Range</th>
<th>M</th>
<th>SD</th>
<th>F-Statistic</th>
<th>p</th>
<th>κ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant Culture</td>
<td>113</td>
<td>-11 - 68</td>
<td>15.53</td>
<td>14.93</td>
<td>7.88</td>
<td>.006</td>
<td>.61</td>
</tr>
<tr>
<td>Non-Dominant Culture</td>
<td>28</td>
<td>-34 - 43</td>
<td>6.57</td>
<td>15.91</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question and Hypothesis 6

The sixth research question asked whether traditional-age college students with cumulative grade point averages below 2.0 would have lower career decision self-efficacy at Time 1 than traditional-age college students with self-reported cumulative grade point averages at or above 2.0 at Time 1. The statistical hypothesis was that traditional-age college students with cumulative grade point averages below 2.0 would have a significantly lower mean pretest total score on the CDSE-SF than the mean pretest total score of students with cumulative grade point averages at or above 2.0. The raw data indicated that this hypothesis would be rejected, because the mean total pretest score for research participants with grade point averages below 2.0 was higher than the mean total pretest score of research participants with grade point averages at or above 2.0. The
researcher chose to run the statistical analysis to determine the effect size, or the magnitude of the difference between the two groups (Coe, 2002). Table 15 displays the results of this analysis. The scores on the pretest of the CDSE-SF for participants who identified themselves as having a grade point average at or above 2.0 (n = 122) ranged from 57-122, with a mean total self-efficacy score of 84.61 (SD = 13.48). The scores on the pretest of the CDSE-SF for participants who identified themselves as having a grade point average below 2.0 (n = 19) ranged from 58-116, with a mean total self-efficacy score of 85.10 (SD = 12.84).

To answer this question, a one-way analysis of variance was calculated on the mean pretest total score based on the variable of reported grade point average. The F statistic calculated in this analysis of .022 was smaller than the critical F value of 3.84 (Stevens, 2002). The analysis was not significant, $F(1,139) = .022, p = .882$. The effect size of .04 is considered small (Cohen, 1992). Therefore, this hypothesis was rejected.

Table 15

<table>
<thead>
<tr>
<th>GPA</th>
<th>N</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>F-Statistic</th>
<th>p</th>
<th>κ</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA $\geq$ 2.0</td>
<td>122</td>
<td>57-122</td>
<td>84.61</td>
<td>13.48</td>
<td>.022</td>
<td>.882</td>
<td>.04</td>
</tr>
<tr>
<td>GPA &lt; 2.0</td>
<td>19</td>
<td>58-116</td>
<td>85.10</td>
<td>12.84</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Question and Hypothesis 7

The seventh research question asked whether traditional-age college students with cumulative grade point averages below 2.0 would report larger gains in career decision self-efficacy than traditional-age college students with self-reported cumulative grade
point averages at or above 2.0 after completing a career exploration course. The statistical hypothesis was that traditional age students with cumulative grade point averages below 2.0 would report a larger mean total gain score on the CDSE-SF than the mean total gain score of students with self-reported grade point averages at or above 2.0 after completing a career exploration course.

To answer this research question, the researcher used the gain score calculated by subtracting the Time 1 total self-efficacy score on the CDSE-SF from the Time 2 total self-efficacy score on the CDSE-SF for the variable of grade point average. Table 16 displays the results of this analysis. The gain scores for participants who reported having grade point average at or above 2.0 ranged from 47-81, with a mean gain score of 12.50 (SD = 15.158). The gain scores for members who reported having a grade point average below 2.0 ranged from -34 to 47, with a mean gain score of 15.68 (SD = 12.30). A one-way analysis of variance was calculated on the mean total gain score on the posttest of CDSE-SF for the variable of grade point average. The F statistic calculated in this analysis of .757 was smaller than the critical F value of 3.84 (Stevens, 2002). The analysis was not significant, $F(1,139) = .757$, $p = .386$. The effect size of .24 is considered small (Cohen, 1992). Therefore, this hypothesis was rejected.
Summary of Results

This study examined whether a career exploration course increased traditional age college students’ career decision self-efficacy as evidenced by scores on the CDSE-SF. The initial sample of students who completed the pretest of the CDSE-SF was 228. A total of 141 students completed the pre and posttest, while 87 students completed only the pretest. Due to the large attrition rate, the group of continuers and non-continuers were statistically compared to look for meaningful differences between the groups.

Independent samples t-tests were conducted to compare the means of the pretest non-continuers with the continuers for the variables of age and total scores on the CDSE-SF. Pearson Chi Square statistical tests were performed in order to determine whether there were significant differences between the continuers and non-continuers on the variables of sex, cultural identification and grade point average. Results of the statistical tests to compare the continuers with the non-continuers indicated that the non-continuers had a significantly lower mean career decision self-efficacy pretest total score, and that the number of non-continuers with reported grade point averages below 2.0 was statistically higher than the number of continuers with grade point averages below 2.0. There were no

Table 16

One-Way ANOVA Results for Comparison of Posttest Gain Score (GS) Group Means by GPA

<table>
<thead>
<tr>
<th>GPA</th>
<th>N</th>
<th>GS Range</th>
<th>M GS SD</th>
<th>F-Statistic</th>
<th>p</th>
<th>κ</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA ≥ 2.0</td>
<td>122</td>
<td>-34 -47</td>
<td>12.50</td>
<td>15.18</td>
<td>.757</td>
<td>.386</td>
</tr>
<tr>
<td>GPA &lt; 2.0</td>
<td>19</td>
<td>-6 – 39</td>
<td>15.68</td>
<td>12.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
statistical differences between the two groups on the variables of age, sex, and cultural identification.

The reliability and validity of the CDSE-SF were examined. The Cronbach’s alpha statistic to assess internal consistency reliability was .93, indicating that the items on the CDSE-SF were highly correlated and measuring the same construct. Factor analysis using principal component analysis was conducted to examine the construct validity of the CDSE-SF. The results of the factor analysis did not support a five factor structure. While a three factor solution emerged, the factors of decision-making and gathering occupational information were the dominant factors for this sample. Statistical analyses were conducted to test the research hypotheses. A paired samples $t$-test was conducted to test research hypothesis 1. Research participant’s confidence level in their ability to make a career decision increased significantly ($p < .001$) from “moderate confidence” at the time of the pretest to “much confidence” at the time of the posttest. Therefore, researcher failed to reject this hypothesis. A one-way analysis of variance was used to test hypothesis 2-7. Hypotheses 2-7 were rejected. The results of this study will be further discussed and interpreted in Chapter 5.
Chapter Five

Discussion

This chapter provides a summary and discussion of the study and its findings. The chapter will begin with a summary of the research, which includes the study purpose, hypotheses, and analyses. Next, conclusions developed from the study findings will be discussed, and implications of this research will be addressed. The chapter will conclude with the limitations of this study and offer recommendations for future research.

Summary of the Research

The purpose of this study was to examine the effect of a career exploration course on the career decision self-efficacy of traditional-age undecided college students. The researcher used the CDSE-SF to measure career decision self-efficacy, and implemented a single group pretest posttest research design to examine whether the mean career decision self-efficacy total score of students enrolled in career exploration courses increased from pretest to posttest. The researcher was also interested in how the variables of sex, cultural identification, and grade point average might affect the mean pretest career decision self-efficacy total score on the CDSE-SF, and how these same variables of sex, cultural identification, and grade point average might affect the mean posttest total gain score on the CDSE-SF. The researcher administered an information sheet to all research participants at the time of the pretest to gather the demographic data.
of research participants’ sex, cultural identification, and grade point average. In summary, the predictor variables in this study were the research participants’ sex, cultural identification, and reported cumulative grade point average. The criterion variable in this study were career decision self-efficacy mean total score, and research participants mean total gain score as measured by the CDSE-SF. Demographic data and the initial statistical analyses that were conducted will now be reviewed.

A total of 228 research participants completed the pretest of the CDSE-SF, while 141 research participants completed both the pretest and the posttest of the CDSE-SF. The participants who completed both the pretest and the posttest of the CDSE-SF were labeled the “continuers,” and the research participants who only completed the pretest were labeled the “non-continuers.” In order to protect confidentiality, research participants’ last four digits of their social security numbers served as the only identifier used to match participants’ demographic information with the pretest and the posttest of the CDSE-SF. Consequently, the researcher had no way to identify or to contact the 87 non-continuers who did not complete the posttest. In response to the large number of non-continuers in this study, the group of non-continuers and the group of continuers were examined for statistical differences.

In order to determine if any clinically meaningful differences existed between those participants that completed the pretest and posttest and those that completed only the pretest, the continuers and non-continuers were statistically compared across the variables of interest for this study: sex, cultural identification, grade point average, and the mean pretest career decision self-efficacy total score on the CDSE-SF. Since the focus of the study was on the traditional-age college student, research participants’ age
was also examined to determine there was a significant age difference between the continuers and non-continuers. Age and the mean pretest career decision self-efficacy total score for the continuers and non-continuers were statistically compared using independent samples *t*-tests, with the alpha level set at .05. The variables of sex, cultural identification, and grade point average were compared using Pearson chi-square analyses. Since multiple tests were conducted on the data, there was an increased potential for finding a Type 1 error. To reduce the possibility of finding significance where there was none, a Bonferroni correction was applied to the a priori alpha of .05 (Newman, Fraas, & Laux, 2001). The corrected alpha level of \( p < .016 \) was calculated by dividing .05 by 3, which represented the three variables that were examined in this study. Results of the analyses indicated that the continuers and non-continuers were not statistically different by age, sex, or cultural identification. The analyses did yield two statistically significant results for the variables of mean career decision self-efficacy total score and grade point average for the two groups. The non-continuers were found to have a lower mean pretest total score on the CDSE-SF (\( M = 82.28 \)), than the continuers (\( M = 98.17 \)), \( p = .000 \). In addition, the results of the Pearson chi-square analysis for the variable of grade point average indicated that the number of non-continuers with a reported grade point average of less than 2.0 was higher than expected. The standardized residual (\( R = 3.1 \)) indicated that this result approached meaningful effect size. In summary, the continuers and non-continuers in this study were not found to be statistically different for the variables of age, sex, or cultural identification. However, it was found that the non-continuers had a statistically significantly lower mean pretest total score on the CDSE-SF than the
continuers, and that a greater number of non-continuers had grade point averages below 2.0 than would be expected by chance.

In addition, the psychometric properties of the CDSE-SF for this sample were also examined. The Cronbach’s alpha statistic of .93 indicated that the instrument had a high level of internal consistency reliability. In addition, the construct validity of the CDSE-SF for this sample was examined using exploratory factor analysis. The results of the factor analysis did not support a five factor structure advocated by the authors of the instrument (Betz et al., 1996). Rather, two primary factors emerged for this sample: decision-making and information gathering.

A summary of the seven research hypotheses, all tested with an alpha level of .05, will be provided. The first hypothesis was tested using a paired samples \( t \)-test. The remaining six hypotheses were tested using a one-way analysis of variance. The first research hypothesis predicted that traditional-age college students’ mean posttest total score on the CDSE-SF would be significantly higher than their mean total pretest score on the CDSE-SF from beginning to the end of a semester-long career exploration course. The researcher failed to reject this hypothesis.

The second research hypothesis predicted that female research participants would have a lower mean pretest career decision self-efficacy total score than the mean pretest career decision self-efficacy total score for male research participants. This hypothesis was rejected. The third research hypothesis predicted that female research participants would have a larger mean total gain score on the posttest of the CDSE-SF than the mean total gain score for male research participants. This hypothesis was rejected.
The fourth research hypothesis predicted that research participants who were members of the dominant culture would have a higher mean pretest career decision self-efficacy total score than the mean pretest career decision self-efficacy total score of research participants who were members of non-dominant cultures. This hypothesis was rejected. The fifth research hypothesis predicted that research participants who were members of non-dominant cultures would have a larger mean total gain score on the posttest of the CDSE-SF than the mean total gain posttest score of members of the dominant culture. This hypothesis was rejected.

The sixth research hypothesis predicted that research participants who reported a grade point average below 2.0 would have a lower mean pretest total score on the CDSE-SF than the mean pretest total score of research participants who reported having a grade point average at or above 2.0. This hypothesis was rejected. The seventh research hypothesis predicted that research participants with a reported grade point average below 2.0 would have a higher mean total gain score on the posttest of the CDSE-SF than the mean total gain score of research participants with reported grade point averages at or above 2.0. This hypothesis was rejected.

Conclusions

This study’s hypothesis which predicted that traditional-age college students’ career decision self-efficacy scores would increase from the pretest, administered at the beginning of a career exploration course, to posttest, administered at the end of a career exploration course, was not rejected. This finding was consistent with findings from other studies (Cox, 1996; Moore, 2003; Oreshnick, 1991; Reese & Miller, 2006). The
mean posttest career decision self-efficacy total score for participants in this sample (M = 98.17) increased nearly one standard deviation (SD = 13.55) from the mean pretest total score (M = 85.22), and the resulting increase yielded an effect size of .954, which is considered large (Cohen, 1992). Therefore, research participants’ average confidence level in their ability to make a career decision increased from “moderate confidence” at the start of the course, to “much confidence” at the end of the course. This finding contributed to the career decision self-efficacy literature in several ways. First, this study tested hypotheses that sought to examine whether pretest levels of career decision self-efficacy differed for the research participants in this sample for the variables of sex, cultural identification, and grade point average, while the aforementioned studies only examined differences in gain career decision self-efficacy scores. Knowledge of the baseline or pre-intervention career decision self-efficacy for subgroups of students could allow the course instructor the opportunity to provide interventions to augment the career decision self-efficacy of specific subgroups of students in the classroom, such as the female students, the students from diverse racial or ethnic backgrounds, or first generation college students.

Furthermore, while two of the previous studies specifically examined the effect of participants’ sex on career decision self-efficacy (Cox, 1996; Oreshnick, 1991), none of the previous studies examined the effect of cultural identification or grade point average on the pretest and posttest career decision self-efficacy scores of research participants enrolled in a career exploration course.

The remaining hypotheses of this study, however, were rejected. The results of this study, for example, did not support the prediction that female research participants would
have a lower mean pretest career decision self-efficacy total score than the mean pretest career decision self-efficacy total score of male research participants. While female research participants did have a lower mean pretest total score on the CDSE-SF (M = 82.90) than male research participants (M = 86.52), the difference was not statistically significant. The lack of support for this hypothesis may be related to several factors. The constructs of gender and career decision self-efficacy have specifically been linked to the underrepresentation of women in gender non-traditional occupations (Betz & Hackett, 1981; Hackett, 1995; Lent et al., 1986). This study did not investigate the specific occupations that the research participants were considering, but compared baseline mean career decision self-efficacy scores of males and females. It is also possible that the traditional-age college women in this sample perceived fewer difficulties in the career exploration process or in the pursuit of specific occupations than expected, which could have resulted in higher career decision self-efficacy at the time of the pretest. Finally, it is also possible that female research participants in this sample did not have lower baseline career decision self-efficacy than the male research participants in this sample.

The next hypothesis that predicted that female research participants would have a greater mean total gain score on the posttest of the CDSE-SF after completing a career exploration course than the mean total gain posttest score of male research participants. This hypothesis was rejected. While female research participants did have a larger mean total gain posttest score on the CDSE-SF (M = 15.48) than male research participants (M = 11.76), the difference was not statistically significant. The lack of support for this hypothesis may be due to the fact that the career exploration course did not directly
address the impact of gender in career decision-making. Examples of influence of gender on career decision-making could include the possible benefits and challenges to the pursuit of a non-traditional occupation based on gender, role strain, and economic disparity between male and females in the workforce. It is possible that the lack of exposure in the course to the influence of gender on career choice could have contributed to the lack of a statistically meaningful increase in female research participants’ career decision self-efficacy as predicted. Finally, it is also possible that the career exploration course had an equal impact on both male and female research participants.

The next two hypotheses were related to cultural identification and career decision self-efficacy. The results of this study did not support the hypothesis that research participants who identified as members of non-dominant cultures would have a lower mean pretest total score on the CDSE-SF than research participants who identified themselves as members of the dominant culture. In fact, research participants who identified themselves as members of non-dominant cultures had a higher mean pretest total score (M = 90.50) on the CDSE-SF than research participants who identified themselves as members of the dominant culture (M = 83.92). This result was unexpected. The literature suggested that the dominant culture predominantly controls the world of work, which has several implications for members of non-dominant cultures, including possible discrimination or harassment; the narrowed or stereotypical socialization experiences related to career opportunities for members of non-dominant cultures; and the restriction or perceived restriction of occupations for persons who are from non-dominant cultures (Betz, 2000; Gloria & Hird, 1999).
It is possible that members of non-dominant cultures in this sample, like the female research participants, perceived fewer difficulties in the career exploration process or in the pursuit of specific occupations than expected, which could have resulted in higher career decision self-efficacy at the time of the pretest. The construct of racial salience could also have relevance for this study. Racial salience describes the degree to which individuals perceive race and ethnicity as an important component of their work alternatives (Helms & Piper, 1994). This construct was not examined in this study, but it is possible that the members of non-dominant cultures in this sample did not perceive their race or ethnicity to be a significant factor in their career decision-making processes. Finally, it is also possible that the research participants from non-dominant cultures in this sample simply had higher baseline career decision self-efficacy than the research participants in this sample from the dominant culture.

Further, the results of this study did not support the hypothesis that members of non-dominant cultures would show a greater mean total gain score on the posttest of the CDSE-SF than the mean total gain score of members of the dominant culture. The members of non-dominant cultures in this sample had a mean posttest total gain score of 6.51, while members of the dominant culture had a mean posttest total gain score of 15.53. Study results indicated that study participants enrolled in a career exploration had a statistically significant increase in the mean career decision self-efficacy total score from pretest to posttest. However, results of this study indicate that variable of cultural identification did not have any significant impact on research participants’ career decision self-efficacy.
The last two hypotheses of this study are related to career decision self-efficacy and grade point average. The first hypothesis related to grade point average predicted that research participants with reported grade point averages less than 2.0 would have a lower mean pretest total score on the CDSE-SF than the mean pretest total score for research participants with reported grade point averages at or above 2.0. The researcher had predicted that academic difficulties as evidenced by grade point averages below 2.0 could be perceived by the research participants as obstacles to career decision-making, which in turn would yield lower career decision self-efficacy scores. For this sample, that was not the case. The mean pretest total score for participants with less than a 2.0 grade point average was 85.10, while the mean pretest total score for participants with grade point averages at or above 2.0 was 84.61. Study participants in this sample with less than a 2.0 grade point average, could have responded to the instrument with overconfidence, resulting in higher than expected scores on the pretest of the instrument. Furthermore, the respondents with grade point averages below 2.0 may have responded to the instrument with unrealistic perceptions of their academic abilities. Finally, it is possible that the students with grade point averages below 2.0 in this sample simply had higher baseline career decision self-efficacy than students in this sample with grade point averages at or above 2.0.

The last hypothesis of this study predicted that research participants with grade point averages below 2.0 would show a greater mean total gain score on the posttest of CDSE-SF than participants with grade point averages at or above 2.0. The mean posttest total gain score for participants with grade point averages below 2.0 was 15.68, while the mean posttest total gain score for participants with grade point averages at or above 2.0
was 12.50. While the mean posttest total gain score was greater for participants with grade point averages below 2.0, the result was not statistically significant. Therefore, this hypothesis was rejected. The researcher found no studies in a review of the literature that examined the effect of the variable of grade point average on career decision self-efficacy. This study has provided some initial data, and further research would be warranted.

While the results of this study did not find that career decision self-efficacy was significantly affected by the variables of sex, cultural identification, and grade point average, an analysis of the group of students who only completed the pretest of the CDSE-SF yielded interesting results. The students who completed the study and those that did not complete the study were not found to differ statistically by age, sex, or cultural identification. The non-continuers were found, however, to have statistically lower mean total career decision self-efficacy scores on the pretest of the CDSE-SF than the continuers, and a greater number of non-continuers were found to have grade point averages below 2.0 than what would be expected by chance. The non-continuers were found to have statistically significantly lower career decision self-efficacy and lower grade point averages than students who completed both the pretest and posttest of the CDSE-SF.

Efficacy expectations are thought to influence how an individual attempts to complete a task, the amount of effort put into task completion, and the degree of persistence employed toward task completion when faced with obstacles (Bandura, 1977). Students with low initial career decision self-efficacy could be at greater risk for not completing a career exploration course, which is an intervention designed to assist students in the
career decision-making process. While no firm conclusions can be drawn from data since class attendance data and final course grades were not examined, these findings offer some practical consideration for college counselors and career course instructors, as well an impetus for further research.

Finally, the results of the factor analysis of the CDSE-SF for this study added to the body of literature on the psychometric properties of the CDSE-SF. The factor analysis supported a two factor structure of the instrument, with the majority of the items loading on two factors, decision-making and information gathering. The factor analysis did not support the five factor structure advocated by the instrument authors (Betz, Hammond, & Multon, 2005), which suggests a need for further research on the factor structure of the instrument, to determine if a revision of the five-factor structure is warranted.

Implications of the Study

The results of this study have implications for counselors and counselor educators. For this study, research participants’ career decision self-efficacy increased from “moderate confidence” to “much confidence” from the beginning to the end of a career exploration course. College counselors could advocate to college administrators that career exploration courses may increase career decision self-efficacy for undecided college students. In addition, for this sample, the exploratory factor analysis supported a two-factor structure of decision-making and information gathering, which was also found by Peterson and delMas (1994). Counselor educators may be interested in further examination of the psychometric properties of the CDSE-SF, as the results of the factor
analysis of the CDSE-SF did not support a five-factor structure advocated by the instrument authors (Betz et al., 2005).

**Limitations**

This study presents several limitations. First of all, the results of this study are not generalizable to all undecided traditional-age college students at all universities. An additional limitation of this study was the lack of random assignment and that no cause and effect relationship can be concluded regarding traditional age college students’ participation in a career exploration course and their reported career decision self-efficacy. A further limitation was the homogeneity of the sample on the variable of cultural identification, as the majority of study participants identified themselves as members of the dominant culture. In addition, the number of students who reported grade point averages below 2.0 was small. Consequently, statistical differences are more difficult to detect with a small sample size, and conclusions are less likely to be generalizable to individuals outside the study. Furthermore, the grade point average data was gathered via self-report, so the researcher cannot be certain that the research participants reported their grade point average accurately.

The single group pretest posttest research design presents a myriad of threats to internal validity: history, maturation, testing, mortality, and regression threats (Campbell & Stanley, 1963). The history threat to validity refers to phenomena outside the career course intervention that could have influenced research participants’ career decision self-efficacy (Campbell & Stanley). For example, a research participant could have obtained an internship during the semester that increased his or her confidence about being
successful in a chosen field. The maturation threat to validity represents natural change in participants’ development (Campbell & Stanley). The college students in this study were exposed to a campus culture that may have naturally produced intrapersonal change in students, which could, in turn, have influenced their career decision self-efficacy.

An additional threat to the internal validity of the study was the testing threat. Testing threat to validity in this study refers to the fact that the pretest of the CDSE-SF could have increased research participants’ awareness of the construct of self-efficacy, and influenced not only their engagement with the career exploration course, but their responses on the posttest of the CDSE-SF. Mortality threat refers to the participants who did not complete the study. The results of this study indicated that students who did not take the posttest had statistically lower career decision self-efficacy than those who completed the study. The attrition of students with the lower career decision self-efficacy could have artificially inflated the effect of the career exploration course on career decision self-efficacy of the remaining participants. A further limitation to the study is the possible Hawthorne effect, because the researcher was present while the students completed both the pretest and posttest of the instrument.

The career exploration course presents additional limitations to this study. Various sections of the career exploration course were offered, which created the possibility of variability in the course content. This limitation was addressed through the use of a common syllabus in all the classes. The common syllabus helped ensure that a standard content was presented in all the courses. Even so, the course was taught by different instructors, so instructor variability could have influenced the effectiveness of the course. Finally, replication of this study presents challenges due to the difficulty of replicating
the course content. The researcher partially addressed this limitation through providing copies of non-copy righted course assignments in the appendixes.

**Recommendations for Future Research**

This study generates some recommendations for future research. First of all, while the results of the study indicated the mean total career decision self-efficacy score of traditional-age undecided college students enrolled in a career exploration course increased significantly from pretest to posttest, there is a dearth in the research regarding which course components contribute to an increased career decision self-efficacy. The students in the course could provide feedback about which of the various course topics were most helpful in increasing their confidence in their ability to make a career decision. If specific interventions that could be identified as effective in increasing students’ career decision self-efficacy, it is possible that counselors could utilize those interventions in individual or group counseling sessions that could contribute to increased career decision self-efficacy levels in a shorter time than a semester course. A verification of attendance data would assist the researcher in securing a sample of students who completed the majority of the course. In addition, attendance data would also be beneficial to identify times during the course when students might be most at risk for dropping out of the class. Furthermore, the variability of instructors served as a limitation of the present study. Additional research is needed to determine if specific instructor attributes or teaching methods are particularly effective in increasing students’ career decision self-efficacy.

In addition, the researcher had not found any studies that examined the effect of grade point average on career decision self-efficacy of traditional age college students. This
study offered an initial examination of the effect of grade point average on career
decision self-efficacy. The results of this study did not show that grade point average had
a significant effect on career decision self-efficacy, but additional research into these two
variables is warranted. Furthermore, institutional records that would allow the
verification of grade point average, rather than self-reported data, would offer
methodological improvements in future research.

Similarly, a larger sample of racially and ethnically diverse college students is needed
to allow for greater generalizability of results, as well as to be able to generate
meaningful conclusions about which specific aspects of the course that may have a
particularly strong influence on career decision self-efficacy for members of specific
racial or ethnic groups. In addition, gender has been a significant construct in the career
decision self-efficacy literature. Future research could examine the specific occupations
that college women are considering, to determine whether a career exploration course is
an effective intervention in increasing the career decision self-efficacy of college women
who are considering male dominated occupations.

Finally, the results of the factor analysis conducted on the CDSE-SF in this study also
provide an opportunity for future research. The results of the exploratory factor analysis
did not support the five factor structure advocated by the authors of the instrument.
Further exploration of the construct validity of the CDSE-SF via factor analysis with
different samples is suggested.
References


Betz, N., & Klein, K. (1996). Relationships among measures of career self-efficacy,


Lent, R. W., Brown, S. B., & Larkin, K. C. (1986). Self-efficacy in the prediction of


attachment security, vocational self-concept crystallization, and career indecision:


Appendix A

The Career Decision Self-Efficacy scale-Short Form (CDSE-SF)
The researcher obtained permission from the instrument authors to use the CDSE-SF in this study. Copyright prohibits the publication of the instrument in the manuscript.
Appendix B

Student Information Sheet
Student Information Sheet

Age: ____________  
Last 4 digits of your SS# _______

Gender (Please circle):  Male  Female

Racial or Ethnic Identification (Check one):
- Black/African-American
- Hispanic/Latino/a
- Asian/Pacific Islander
- Biracial/Multiracial
- Caucasian/European American
- Other

Cumulative Grade Point Average (Check one):
- 2.0 or Above
- Below 2.0
Appendix C

Career and Self-Evaluation Course Syllabus
UC 1120-002: Career and Self Evaluation
Fall Semester, 2007

Instructor:  
Office: RH - 1400  
Office Hours:  
Class Meeting Times & Location:

E-mail:  
Office Phone #:  

TEXTBOOK
Your Career Planner (Ninth Edition) Borchard/Bonner/Musich (Kendall-Hunt)

COURSE MATERIAL
O*NET Career Interest Inventory  
Work Values Assessment  
Transferable Skills Assessment  
Career Exploration Inventory  
Myers-Briggs Type Indicator

COURSE OBJECTIVES
In this course you will become acquainted with the concepts of career planning. As students, you will develop a clear sense of what would be personally satisfying career choices based on majors that the University of Toledo has to offer. Students will gain an understanding of why personal interests, values, and skills are important to job satisfaction and how their personality type can be important in interaction with those around you in the workplace.

LEARNING OUTCOMES
- Career planning is hard work!
- Career planning is worth all the work you put into it.
- Being able to put together the pieces of the “major” puzzle feels great!
- You made this decision based on the knowledge acquired in this class.
- Connecting your choice of major with the tools learned through your classroom readings, notes, personality and interest tests, internet sites, and guest speakers.
Special Needs: Any student needing to arrange a reasonable accommodation for a documented disability should contact the Office of Accessibility, 1400 Snyder Memorial, 419.530.4981.

Attendance: You are expected to attend every class session. A sign-in sheet will be passed around at the start of every class. You will be permitted two unexcused absences. Five points will be deducted for each following unexcused absence. Please refer to the UT Policy Manual for missed classes at: http://www.utoledo.edu/policywindex.asp?id=87

Faculty Tardiness Policy: If an instructor fails to arrive on time for a class, and the class has received no notification from the instructor concerning a late class start time for that date, students must wait in the class location for 15 minutes from the scheduled class start time. If the instructor has not arrived in that time, and if no “late start” notification has been received from the instructor in that time, all students may leave. In such a case, the students are not to be penalized in terms of grading or any other punitive action by the instructor.

GRADING POLICIES
This course is graded A, B, C, D, and F. Grades will be based on the number of points accumulated during the semester. Points will be converted to percentages and grades distributed on the following scale:

A  185-200 points
A- 180-184 points
B+ 175-179 points
B  165-174 points
B- 160-164 points
C+ 155-159 points
C  150-154 points
C- 145-149 points
D+ 135-139 points
D  125-134 points
D- 120-124 points
F  119 points or less

The maximum points you can earn for assignments and other class requirements are as follows:

- Personal Career History Assignment---10 points
- Guest speakers -----------------------------------5 points (9 speakers, 5 points each, must attend class to receive points)
- Career Decision Making assignment---10 points
- Career Exploration Inventory------------------15 points
- O*NET Career Interest Inventory----------------15 points
- Work Values Assessment--------------------------15 points
- Transferable Skills Assessment------------------15 points
- MBTI assessment--------------------------------15 points
- Mid Term Meeting------------------------------10 points
- Informational Interview assignment---------10 points
- Informational Interview presentation---------5 points
- Career Action Plan----------------------------55 points

CAREER ACTION PLAN
This assignment should incorporate lectures, guest speakers, Career Exploration Inventory, O*NET Career Interest Inventory, Work Values Assessment, Transferable Skills Assessment, MBTI results, readings, informational interview insights, and goals. You will address what you have learned in this class and incorporate it into a long-term career goal. Paper length will be no less than 3 pages and no more than 5 pages.
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<th>Topic</th>
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<tr>
<td>Tuesday, August 21</td>
<td>Introduction</td>
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<td>Thursday, August 23</td>
<td>Chapter 1 – Making Career Decisions in a Changing World</td>
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<td></td>
<td>What is Career &amp; Self Evaluation?</td>
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<td>Handout – Personal Career History</td>
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<td>Tuesday, August 28</td>
<td>Chapter 5 – Understanding Your Personality and Interests</td>
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<td>O*NET Career Interest Inventory</td>
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<tr>
<td>Thursday, August 30</td>
<td>Chapter 6 – Connecting Your Personality to Work</td>
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<td></td>
<td>Identifying your Personality Type</td>
</tr>
<tr>
<td></td>
<td>Turn in Personal Career History assignment</td>
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<td>Tuesday, September 4</td>
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<tr>
<td>Thursday, September 6</td>
<td>Chapter 7 – Discovering What Motivates You</td>
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<td>Work Values Assessment</td>
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<td></td>
<td>Transferable Skills Assessment</td>
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<tr>
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<td>Career Exploration Inventory</td>
</tr>
<tr>
<td>Tuesday, September 18</td>
<td>MBTI Assessment</td>
</tr>
<tr>
<td>Thursday, September 20</td>
<td>CEI Assessment speaker – Doug Scott, SkillsMax Center</td>
</tr>
<tr>
<td>Tuesday, September 25</td>
<td>Chapter 9 – Setting Goals and Planning Your Career</td>
</tr>
<tr>
<td>Thursday, September 27</td>
<td>MBTI Assessment speaker – Terri Burnett, Career Services</td>
</tr>
<tr>
<td>Tuesday, October 2</td>
<td>Chapter 7 – Discovering What Motivates You</td>
</tr>
<tr>
<td></td>
<td>Maslow’s Heirarchy of Needs</td>
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<tr>
<td>Thursday, October 4</td>
<td>Occupational Outlook Handbook Assignment</td>
</tr>
<tr>
<td></td>
<td>Handout – Career Decision Making</td>
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<td></td>
<td>Website: <a href="http://www.bls.gov/oco/home.htm">http://www.bls.gov/oco/home.htm</a></td>
</tr>
<tr>
<td>Tuesday, October 9</td>
<td>Mid-Term Individual Student meetings. No Formal Class Meeting</td>
</tr>
<tr>
<td></td>
<td>How to conduct an Informational Interview</td>
</tr>
<tr>
<td>Tuesday, October 16</td>
<td>NO CLASS – Fall Break</td>
</tr>
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</table>
Thursday, October 18  College of Education speaker
       Jon Borland
Tuesday, October 23  College of Pharmacy speaker
       Deb Sobczak
Thursday, October 25  College of Business speaker
       Darlene Stevens
Tuesday, October 30  University College speakers
       Kim Pollauf
Thursday, November 1  College of Arts & Sciences speaker
       Melanie Dusseau
Tuesday, November 6.  College of Engineering – Nitschke Hall, room 1045
       Jon Pawlecki
Thursday, November 8  College of Nursing speaker
       Paula Ballmer
Tuesday, November 13  NO CLASS
Thursday, November 15  College of Health Science & Human Service speaker
       Valerie Juergens
Tuesday, November 20  Informational Interview presentations
Thursday, November 22  NO CLASS – Thanksgiving Holiday
Tuesday, November 27  Informational Interview presentations
Thursday, November 29  Career Action Plan discussion
       Resume assignment
Tuesday, December 4  Resume Assignment
Thursday, December 6  Wrap-Up
       Turn in Career Action Plan paper.

_The degree of satisfaction that you get from your work directly affects the degree of health and vitality in the rest of your life._
—Tom Jackson

_Guerrilla Tactics in the Job Market_
Appendix D

Personal Career History
Personal Career History

1. When you were little, what jobs did you dream about doing when you were grown up?

2. What employment did your parents have when you were a child?

3. What classes did you like when you were in high school? Which classes didn’t you like?

4. What teachers did you like or admire when you were in high school? Which teachers didn’t you like?

5. What is your personal employment history? Which jobs have you had, and what have you liked and disliked about each of them?
6. What kinds of books, magazines, and newspapers do you like to read?

7. What are your hobbies?

8. Describe someone you know that you think is interesting. Tell why you find them interesting.

9. What would you do if you could only find the time to do it?

10. What issues are important to you?
11. What kinds of places do you like to visit?

12. Describe your dream job.

13. Are there any people that you would consider heroes or heroines? Why?
Appendix E

Occupation Information Network (O*Net) Career Interest Inventory
Copyright prohibits the publication of the instrument in the manuscript.
Appendix F

Work Values Assessment
VALUES

Accuracy – work that is relatively free from mistakes or errors as the result of care of careful planning of detail
Achievement – to attain a desired goal; accomplishment
Beauty – work that stresses the quality of pleasure; pleasing to the mind
Chain-of-command – series of executive positions in order of authority
Common-sense-orientation – work that allows one to stick to sound facts or principles; flexibility
Conservative – work that adheres to traditional methods or views
Creativity – creating new ideas, things, designs
Empathy – work that permits one to become involved with others
Fairness – work in which people are treated equally
Honesty – work that permits one to be fair and straightforward in their conduct; integrity; character
Imagination – work that allows one to conceive new thoughts; picture things the way they could be opposed to the way they are
Independence – work that allows one to do a job in his/her own way
Inventiveness – work that allows one to discover or find new ways to do things
Justice – being impartial or fair with others
Liberal – open mindedness; not bound by authoritarianism; not strict in the observance of established ways of doing things
Loyalty – allegiance to a person, group, or institution
Nature – work that allows one to be outdoors
Persistence – work that permits one to continue in a state, opinion, purpose, or course of action, especially against opposition
Personal freedom – work that allows one to experience self or individual control or independence
Responsibility – to be entrusted with or accountable for certain assignments, tasks, or duties
Risk-taking – willing to chance a loss or take a course of action that could lead to uncertain danger
Self-expression – work that allows one to express his/her own personality, feelings, or ideas
Service to others – work that allows one to assist or benefit others
Status – work that brings a high position in society
Success – achievement of something desired, planned, or attempted; to prosper
Thrift – wise economy in the management of money and other resources; frugality
Understanding – to grasp or comprehend the meaning intended or expressed by another
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<tr>
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<th>INVESTIGATIVE</th>
</tr>
</thead>
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<td>accuracy</td>
</tr>
<tr>
<td>common-sense orientation</td>
<td>inventiveness</td>
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<tr>
<td>personal freedom</td>
<td>achievement</td>
</tr>
<tr>
<td>honesty</td>
<td>independence</td>
</tr>
<tr>
<td>thrift</td>
<td></td>
</tr>
<tr>
<td>nature</td>
<td></td>
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<table>
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<th>SOCIAL</th>
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</thead>
<tbody>
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<td>service to others</td>
</tr>
<tr>
<td>self-expression</td>
<td>fairness</td>
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<tr>
<td>imagination</td>
<td>justice</td>
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<td>creativity</td>
<td>understanding</td>
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<tr>
<td>liberal</td>
<td>empathy</td>
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<table>
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<th>CONVENTIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>success</td>
<td>conservative</td>
</tr>
<tr>
<td>status</td>
<td>persistence</td>
</tr>
<tr>
<td>chain-of-command</td>
<td>honesty</td>
</tr>
<tr>
<td>responsibility</td>
<td>thrift</td>
</tr>
<tr>
<td>loyalty</td>
<td>accuracy</td>
</tr>
<tr>
<td>risk-taking</td>
<td>chain-of-command</td>
</tr>
</tbody>
</table>
Appendix G

Transferable Skills Assessment
TRANSFERABLE SKILLS ASSESSMENT

1) Begin to think about what you can do and have done. List not only skills you are using or have used in the past, but also skills you have developed through hobbies, volunteer/community involvement, household management, leisure time activities or other involvements.

2) Look over the following list of transferable skills and place a checkmark (✓) by all of those skills you possess and have used in some way.

3) Next, put a second checkmark (✓) by those skills which you not only have but also enjoy using.

4) Now go through the list looking at all of the skills with a double checkmark. Determine which of these skills would be most important for you to use in a job and draw a circle around them. Prioritize your top five (5) skills in order of importance to you.

<table>
<thead>
<tr>
<th>caregiving</th>
<th>being sensitive</th>
<th>empathizing</th>
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<tbody>
<tr>
<td>listening, understanding</td>
<td>course counseling</td>
<td>communicatingwarmth</td>
</tr>
<tr>
<td>collaborating with others</td>
<td>motivating others</td>
<td>representing</td>
</tr>
<tr>
<td>hosting or hosting</td>
<td>creating pleasant environments</td>
<td>helping withpersonalproblems</td>
</tr>
<tr>
<td>providing service</td>
<td>encouraging</td>
<td>briefing, explaining</td>
</tr>
<tr>
<td>teaching, tutoring</td>
<td>advising, informing</td>
<td>training</td>
</tr>
<tr>
<td>leading, facilitating</td>
<td>creating a learningenvironment</td>
<td>inspiring</td>
</tr>
<tr>
<td>enabling others to help themselves</td>
<td>advocating, negotiating for others</td>
<td>illustrating concepts with examples</td>
</tr>
<tr>
<td>initiating</td>
<td>public speaking</td>
<td>selling</td>
</tr>
<tr>
<td>problem solving</td>
<td>planning/promoting change</td>
<td>taking risks</td>
</tr>
<tr>
<td>making hard decisions</td>
<td>leading others</td>
<td>motivating, inspiring others</td>
</tr>
<tr>
<td>managing responsibility</td>
<td>delegating responsibility</td>
<td>planning, forecasting</td>
</tr>
<tr>
<td>designing, developing</td>
<td>hiring, team building</td>
<td>implementing policies</td>
</tr>
<tr>
<td>chairing meetings</td>
<td>persuading/influencing others</td>
<td>negotiating, bargaining</td>
</tr>
<tr>
<td>working with committees</td>
<td>promoting an idea/product</td>
<td>confronting others</td>
</tr>
<tr>
<td>developing potential in people</td>
<td>organizing, coordinating others</td>
<td>establishing procedures, organizational structures</td>
</tr>
<tr>
<td>physical coordination</td>
<td>auto repair</td>
<td>drafting</td>
</tr>
<tr>
<td>plant care, farming</td>
<td>animal care</td>
<td>manual dexterity</td>
</tr>
<tr>
<td>reading and using maps</td>
<td>physical stamina</td>
<td>assembling, installing</td>
</tr>
<tr>
<td>outdoor work</td>
<td>designing, shaping</td>
<td>blueprint reading</td>
</tr>
<tr>
<td>repairing</td>
<td>camping</td>
<td>precision work</td>
</tr>
<tr>
<td>athletic ability</td>
<td>electronics</td>
<td>plumbing</td>
</tr>
<tr>
<td>cooking</td>
<td>mechanical reasoning</td>
<td>spatial perception</td>
</tr>
<tr>
<td>building, construction</td>
<td>lifting, balancing</td>
<td>using tools, operating equipment</td>
</tr>
</tbody>
</table>
- Imagining/intuiting
- Developing/formulating
- Adaptive, has insight
- Singing
- Sketching, drawing, or painting
- Following the story line and message in movies, plays, and books
- Visualizing color, shapes/concepts
- Acting
- Scientific ability
- Learning quickly
- Mathematical ability
- Investigating people, data, things
- Interpreting data, tables, graphs, charts
- Clarifying problems
- Diagnosing
- Reviewing, critiquing
- Organizing written material and numerical data
- Allocating resources
- Statistical work
- Accepting responsibility
- Analyzing quantitative data
- Getting things done
- Editing
- Operating office machines
- Improvising/inventing
- Synthesizing/integrating
- Designing new programs, materials
- Aesthetic sense
- Doing interpretive readings of stories, poetry or verse
- Expressive verbally/non-verbally
- Symbolizing words/images/concepts
- Fashioning or shaping things, materials
- Observing, reflecting on people/things
- Reasoning, abstracting using logic
- Analyzing
- Understanding people and behavior
- Gathering information
- Anticipating problems
- Questioning
- Evaluating
- Managing budgets/money
- Financial planning
- Keeping deadlines
- Organizing reports, filing, classifying, processing
- Typing, keypunching, operating a calculator or other office machines
- Attention to detail
- Systematizing
- Keeping accurate records
- Predicting/showing foresight
- Staging/directing productions
- Creative
- Learning foreign languages
- Creating music/art/photography/sculpture
- Writing poetry/plays/stories
- Conveying feelings and thoughts through body movement, face and/or voice tone
- Perceiving potential in others
- Assessing/appraising
- Classifying
- Solving puzzles or figuring out how things work
- Researching/surveying
- Organizing
- Testing ideas
- Generating ideas
Appendix H

Career Exploration Inventory
Copyright prohibits the publication of the instrument in the manuscript.
Appendix I

Myers-Briggs Type Indicator Career Report
Copyright prohibits the publication of the instrument in the manuscript.
Appendix J

Informational Interview Assignment
Informational Interview Instructions

10 points – paper

Due: Monday, November 19 & 26

Conduct interview with one person who has a job of interest to you (specific guidelines will be covered in class). Type a 2-3 page summary (double spaced) of the interview including:

- Detailed description of the job and what it involves
- Detailed description of the way this interview affected your knowledge about careers and your own career exploration
- What new information, ideas, and insights did you gain?
- Did the interview increase or decrease your interests in the field?
- Does the job match your interests, values, personality, and skills?

Technical requirements must include:

- Typed
- Double spaced
- Font: 12 point Arial or Times New Roman
- Error free (Please make sure your work is proofread and well-written. Contact the Writing Center or ask a fellow student to help you edit your paper.)

At the beginning of the report you must either attach a business card of the contact or provide complete contact information, including name, job title, address, and phone number of the person interviewed. This must be an in-person, face-to-face interview. Telephone or email interviews are not acceptable. Also, do your best not to interview faculty, friends, and family members for this assignment.

Reminder: On Monday, November 19 and 26 all students will be presenting a 2-3 minute speech to the class about their informational interview. Note cards are appropriate. Do not read your speech from the informational interview paper.

I will be grading the assignment on the following points:

1) Did you describe the job and what it involved?
2) Was your speech in the 2-3 minute range?
3) What did you learn through the interview?
INFORMATIONAL INTERVIEW

Name of person interviewed: ___________________________________________

Work title: _________________________________________________________

CAREER SELECTED

How did you get started in this type of work?

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

What are your working conditions like?

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

What do you enjoy about your work?

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

What do you dislike about your work?

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
Based on the information that you have gathered and the interview(s) that you have done, does this career interest you? In what ways?

Other questions you want to ask:
Appendix K

Career Action Plan Assignment
CAREER ACTION PLAN

Due: Last week of class, Thursday, December 6 (35 pts.)

This assignment is a capstone experience for this course and should incorporate everything you have learned over the semester through class discussions, guest speakers, O*NET Career Interest Inventory, Work Values Assessment, Skills Assessment, MBTI results and analysis, Informational Interview insights, and your personal goals. If you have chosen a major to pursue, how did you arrive at your choice? You will address what you have learned in this class and incorporate it into one or more long-term goals. You will write a well developed, focused essay in which you attempt to identify problems you have had in deciding on a major and/or occupation and how you have dealt with them in the context of this course. Your self-analysis should contain specific references to classroom assignments. Also, you may wish to turn your attention to the future, identifying those areas that you hope to continue developing, and how you plan to do so.

The technical requirements for this paper include the following:
- No less than 3 pages & no more than 5 pages.
- Typed
- Double-spaced
- Size 12 Arial or New Times Roman font
- Free from errors (Please take time to reread and edit your work!)
Appendix L

Approval from the Social, Behavioral, and Educational Institutional Review Board
TO: Dr. Kathleen Salyers & Lisa Bollman  
Counselor Education and School Psychology  
FROM: Dr. Barbara K. Chesney, Chair  
Social, Behavioral and Educational Institutional Review Board  
DATE: December 5, 2007  
SUBJECT: IRB #105834 An Examination of the Effect of a Career Exploration Course on the Career Decision Self-Efficacy of Traditional-age Undecided College Students  

PROTOCOL APPROVAL DATE: 12/05/2007  
EXPIRATION DATE: 12/04/2008  
NUMBER OF SUBJECTS APPROVED: 200  

The above research protocol was reviewed and approved by the University of Toledo Social, Behavioral & Educational IRB. Approval of this protocol is in effect until the expiration date listed above, unless the IRB notifies you otherwise.

Two months prior to your expiration date, if your project is not complete; you must submit a request for a continuing review and a progress report in order to continue the project beyond that date. When your project has been completed, please fill out and send me the enclosed Social, Behavioral & Educational Final Report Form. As the Primary Investigator, once this project is completed, you will not be able to receive additional protocol approvals until this report is received.

This approval for the use of human subjects is contingent upon your following the research plans presented in your submitted proposal. You are not permitted to undertake any actions involving human subjects that are not a specific part of that proposal. If it becomes necessary to amend your protocol, you must submit an amendment application for review and inclusion in your project file. Without such review, this authorization is void and you are not permitted to use human subjects in your research.

If any adverse events occur in the course of your research on human subjects, you must suspend the project temporarily and notify me immediately.

Thank you very much for your cooperation. If you have any questions, please feel free to contact Dr. Jeff Busch 419-530-2416.

Sincerely,

Dr. Barbara K. Chesney, Chair  
Social, Behavioral & Educational  
Institutional Review Board

cc: Office of Research SBE IRB File
Appendix M

Permission to use the CDSE-SF
Here you go LisA – Yes thanks for the check!

From: Bollman, Lisa Marie [mailto:Lisa.Bollman@UToledo.Edu]
Sent: Saturday, September 15, 2007 10:17 PM
To: Nancy Betz
Subject: RE: Career Decision Self-Efficacy Scale SF

Hello Dr. Betz,
I was wondering if you received my check for the use of CDSE-SF. If so, will the manual be mailed to me?
Thank you so much!
Sincerely,
Lisa Bollman

From: Nancy Betz [mailto:Betz@psy.ohio-state.edu]
Sent: Fri 7/20/2007 5:24 PM
To: Bollman, Lisa Marie
Subject: RE: Career Decision Self-Efficacy Scale SF

HI Lisa
Here is information about purchasing the scale, and a copy for you to examine. There is a graduate student discount.
Thanks for your interest!
Nancy Betz

From: Bollman, Lisa Marie [mailto:Lisa.Bollman@UToledo.Edu]
Sent: Friday, July 20, 2007 3:52 PM
To: betz.3@osu.edu
Subject: Career Decision Self-Efficacy Scale SF

Hello Dr. Betz,
I am a doctoral candidate in the Counselor Education and Supervision department at the University of Toledo. I am just beginning to formulate ideas for my dissertation, and I am very interested in self-efficacy as it pertains to career decision-making behavior. I work full time as an academic adviser for undecided students at UT, and one of the interventions we provide our undeclared students is a career and self-evaluation course. I am interested in investigating whether the career exploration course increases the students’ reported self-efficacy beliefs regarding their ability to make a career decision. An OSU graduate conducted a similar study, and one of her recommendations for future research was to examine the influence of a semester long career exploration course on career decision self-efficacy beliefs. I hope to contribute to the research in a small way by utilizing a semester long career course as the intervention. I would very much like to use your Career Decision Self-Efficacy Scale (SF) in my study, and respectfully request your permission to use the instrument.

I appreciate your consideration of my request, and look forward to your reply.

Sincerely,
Lisa Bollman, MA, PCC
Appendix N

Research Participant Informed Consent
ADULT RESEARCH SUBJECT - INFORMED CONSENT FORM

An Examination of the Effect of a Career Exploration Course on the Career Decision Self-Efficacy of Traditional-age Undecided College Students.

Principal Investigator: Kathleen Salyers, PhD
Associate Professor
Department of Counselor Education & School Psychology
HHS Bldg., Room 3100 Mail Stop 119
The University of Toledo
Toledo, Ohio 43606 Phone 419-530-2718
Fax: 419-530-7879

Student Investigator: Lisa Bollman, Doctoral Candidate
Department of Counselor Education and School Psychology
1400 RH MS #333 University of Toledo, Toledo, OH 43606
419-530-1256
lisa.bollman@utoledo.edu

Purpose: You are invited to participate in the research project entitled, "An Examination of the Effect of a Career Exploration Course on the Career Decision Self-Efficacy of Traditional-age Undecided College Students," which is being conducted at the University of Toledo under the direction of Kathleen Salyers, PhD, Faculty Adviser, and Lisa Bollman, Doctoral Candidate. The purpose of this study is to investigate the effect of the Career and Self-Evaluation course on students' career decision self-efficacy. Career decision self-efficacy is the level of confidence you feel about your ability to make a career decision.

Description of Procedures: This research will take place in this classroom. You will be asked to complete a student data sheet, which will ask you to provide information about your age, race/ethnicity and cumulative grade point average. You will also be asked to complete the Career Decision Self-Efficacy Scale-Short Form (CDSE-SF) in which you will rate your confidence in your ability to complete a variety of career decision making tasks. Near the end of the semester, I will return to the classroom and ask you to complete the CDSE-SF again. Your participation will take about 30 minutes of total class time.

After you have completed your participation, I can provide you follow-up information about the data, theory and research area under study and answer any questions you may have about the research.

Potential Risks: There are minimal risks to participation in this study, including loss of confidentiality. In addition, answering the surveys (or participation in this study) might cause you to feel upset or anxious. If so, you may stop at any time.

Potential Benefits: The only direct benefit to you if you participate in this research may be that you will learn about how educational research is conducted and may learn more about career decision self-efficacy. Others may benefit by learning about the results of this research.

Confidentiality: The researchers will make every effort to prevent anyone who is not on the research team from knowing that you provided this information, or what that information is. The consent forms
with signatures will be kept separate from responses, which will not include names and which will be presented to others only when combined with other responses. Although we will make every effort to protect your confidentiality, there is a low risk that this might be breached.

**Voluntary Participation:** Your refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled and will not affect your relationship with The University of Toledo or any of your classes. In addition, you may discontinue participation at any time without any penalty or loss of benefits.

**Contact Information:** Before you decide to accept this invitation to take part in this study, you may ask any questions that you might have. If you have any questions at any time before, during or after your participation, or experience any physical or psychological distress as a result of this research, you should contact a member of the research team (Lisa Boillman, 419-530-1256, or Dr. Kathleen Salyers at 419-530-2718). If you have questions beyond those answered by the research team or your rights as a research subject or research-related injuries, please feel free to contact the Chairperson of the SBE Institutional Review Board, Dr. Barbara Chesney, in the Office of Research on the main campus at (419) 530-2844.

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

**SIGNATURE SECTION – Please read carefully**

You are making a decision whether or not to participate in this research study. Your signature indicates that you have read the information provided above, you have had all your questions answered, and you have decided to take part in this research.

The date you sign this document to enroll in this study, that is, today's date must fall between the dates indicated at the bottom of the page.

<table>
<thead>
<tr>
<th>Name of Subject (please print)</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Person Obtaining Consent</td>
<td>Signature</td>
<td>Date</td>
</tr>
</tbody>
</table>

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**THE UNIVERSITY OF TOLEDO**

**SOCIAL, BEHAVIORAL & EDUCATIONAL INSTITUTIONAL REVIEW BOARD**

The research project described in this consent form and the form itself have been reviewed and approved by the University of Toledo Social, Behavioral & Educational Review Board (SBE IRB) for the period of time specified below.

- **SBE IRB #:** 105834
- **Approved Number of Subjects:** 200
- **Project Start Date:** 12/05/07
- **Project Expiration Date:** 12/04/08
- **Date:** 12/15/07

Barbara Chesney, Ph.D., Chair
UT Social Behavioral & Educational IRB

**08.15.07**
Figure 1

Scree Plot of CDSE-SF Principal Component Analysis