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The Effects of a Career Development Course on Career and College Major Decision-Making in
College Students

By

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The Effects of a Career Development Course on Career and College Major Decision-Making in College Students

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Abstract:

This study explored the effects of a semester-long, 2 credit career development course on the undecided college students. Participants included undergraduate students enrolled in the Career Development (COUN 105) class and comparison group students enrolled in Introductory Psychology (PSYX 100), and Intimate and Family Relationship (COUN 295) classes at The University of Montana. Students were assessed at the beginning and the end of the Spring and Fall semesters, 2010 by using the Career Decision Self-Efficacy Scale-Short Form (CDSE-SF; Betz & Taylor, 1983), Career Orientation scale, Career Decision Scale (Osipow et al., 1976), and Decisional Process Inventory (Hartung, 1994). The main purpose of this quantitative research study was to determine whether a career development course offered at The University of Montana would have a positive, neutral, or negative effect on career decision-making, self-efficacy, and other career decision making processes among undergraduate students. Based on (MANOVA) results, COUN 105 students significantly increased their sense of career self-efficacy as a function of the course. Based on these results, it was recommended for the development and implementation of career courses for undecided undergraduates become mandatory.

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CHAPTER ONE

Introduction

The issue of student retention and persistence has continued to grow in importance throughout the history of higher education in our country. Early studies (Astin, 1977) focused on the characteristics of those students who did not persist and such studies were used as evidence for higher admissions standards or more quality control of recruitment. However, beginning [in] the 1970's the research began to focus on what were the reasons students remained enrolled and how colleges and universities could make changes or develop programs which would increase the retention of their students (Nutt, 2003, as cited in Hoell, 2006, p. 8).

The State Department of Education, universities, colleges, schools, professors, teachers, and counselors are currently re-focusing on the importance of student career choices in the United States (Brich & Mann, 1977). According to the 2007 American College Test (ACT) results, 13 percent of the over one million students, who took the test, were “undecided” about their academic majors (Bollman, 2009). Although this suggests a large number of college-bound high school students have decided their college major, it's more likely that they have endorsed a major or career path (at age 17 or 18 years) based on very little work experience and without ever having stepped into a college classroom. As a consequence, the initial ideas or decisions about possible majors among freshman and sophomores in college are likely unstable and may well change as the young person gains life experience. Among other reasons, this could be because college-bound high school students have unrealistic ideas or fantasies about what a particular career or college major might be like.

In fact, studies have shown that 50 percent of college students suffer from career decision-making-related stress and desire help in selecting their majors and in other career decision-making processes (Peng, 2001). Additionally, it has been reported that one-fourth of college students decide their majors but are not satisfied with their decision and remain uncomfortable (Salter, 2008).

There are a number of issues related to the challenges of choosing college majors and career decision-making. This section briefly describes several factors linked to college majors and career decisions.

Early Career Planning

Many students are encouraged to start planning their college majors and career path around their sophomore or junior year in high school. Despite this fact, high schools may or may not provide proper guidance to their students (Salter, 2008). To facilitate good college decision-making, this college and career guidance should be based on student interests, abilities, and values (Adams, 1974); however, it is often not a comprehensive process based on these elements and the challenges students face with regard to college and career decision-making may outweigh the guidance they receive from high school counselors and caregivers. Although participating in extracurricular activities, community service, and part-time jobs also helps students to get career ideas and inspirations (Helwing, 2004; Super, 1957), not all school students participate in these activities. Overall, many students remain unaware of their interests, abilities and values and cannot make informed decisions in choosing colleges and areas of study or majors (Adams, 1974; Salter, 2008).

In his developmental theory of career development, Super (1990) hypothesized that high school students are at the exploration stage (ages 15-24) of career development. Super explained

that the “Exploratory stage is characterized by a tentative phase in which choices are narrowed but not finalized” (as cited in Zunker, 2002, p.37). According to Mei et al. (2008), college students initially try to get a definite shape for their careers and make preliminary decisions about their careers. Consistent with Super’s theory, after starting college, many freshmen change their career decisions partly because of sudden changes in their lives and new freedom in choosing courses and schedules (Sepich, 1987).

According to Stephen Stahl, Dean of Arts and Science at Bonaventure University, college students change their majors for three main reasons: First, the influence or idealism of one of their high school teachers got them interested in a certain subject which they found not to be very interesting in college. Second, students choose their majors according to what their parents want them to do, but after taking classes they realize their parents’ wishes do not match their own interests. Third, students choose their majors in high school with limited knowledge and experience related to different majors and areas of study. After attending college and being exposed to different academic aspirations, they may change majors. He also claimed that students change their majors most often during their sophomore year (Ciavarri, 2008).

External Factors Influencing Career Choice

Previous research indicates that external factors influence college and career decision-making. Some of these factors are environment, opportunity, personality, parents’ opinions, financial pressures, and peer influences (Borchert, 2002; Goodson 1981). It appears that many students decide their careers primarily due to these external influences, rather than their own abilities and interests (Goodson, 1981).

Most often students are directly affected by their environment when deciding their majors. Their living environments help them realize their interests and abilities which help them decide

on a career (Borchert, 2002). Students utilize their social networks such as parents, friends, relatives, siblings, and teachers in their career decision-making process. Perhaps some people within their social network become role models (Greenbank, 2007). Students are strongly influenced by their parents' educational background and ways of living when adopting or leaving certain careers. Sometimes parents also demand their children join their family business and career, or ask them to take a major of the parents' choice (Borchert, 2002). Often these decisions, unless they happen to be a good match with the student's interests, abilities, and values, result in poor academic performance, hopelessness, frustration, and dropping out of college (Birch & Mann, 1977).

Personality also plays an important role in students' career decision-making and later professional lives (Wilkinson, 2010). Splaver (1977) stated, "Personality plays an important role in the choosing of right career" (as cited in Borchert, 2002, p.12). Borchart (1995) reported that "it is necessary that vocational planners view individuals' needs through the career decision-making stage they are in, their interests, and unique personality variables" (as cited in Wasylow et al., 2000). Certain careers demand matching personality qualities. For example sales people are more likely to have extroverted personality traits (social, talkative, and high amount of emotional expressiveness) (Borchert, 2002). Thus, having a good understanding about self and personality is important for an individual to make intelligent and better career plans (Borchert, 2002, p.12). Lack of sufficient knowledge about personality traits in students and how they are a good or poor match for specific majors or careers can impede career decision-making (Borchert & Mann, 1977). In contrast, research shows that students who are self-confident and assured about their career choices are more successful and engaged in college (Bollman, 2009). This may be related to their self-awareness of personality traits.

Financial pressures also influence career decision making (Greenbank, 2007). More than one-third of college students think about dropping out due to financial problems. Many students try to continue their education; however, some of them have to drop out because they cannot afford it (Kingston, 2008). Working class students cannot give proper attention to their career decision-making process and job hunting due to lack of time and engagement in multiple jobs. Another pressure to finish the degree in four years or face continuing or rising tuition fees adds stress and makes the situation worse (Greenbank, 2007).

Direct Work-Related Experiences and Career Choice

As described earlier, part-time jobs, community service, extra-curricular activities, fun activities, household chores, and other responsibilities can help students' clarify their career objectives and targets (Helwig, 2004). These experiences also can lead students to develop a great sense of self-efficacy, which might further contribute in a positive way toward career development. However, for a myriad of complex reasons, some students may not participate in these activities and will therefore have a weak experiential foundation for making their college and career decisions.

Many high school students also work part-time. According to the US Census Bureau (2006), 44% of 16-19 years old were in the labor force in 2004. This fact is potentially a positive factor because it helps students gain valuable experiences, but it also may keep them too busy to reflect on their career choices (as cited in Newman & Newman, p.381).

Previous studies indicate both positive and negative influences of working during adolescence (Staff & Mortimer, 2008). The positive influence is that students who find good jobs with limited work hours may feel more confident about themselves and their future career choices. If the job is related to their interests and skills, they start looking at their future career

directions. Continuity in work and good grades at school give great satisfaction to students (Newman & Newman, 2008). The negative side of the picture for students who work more than 20 hours a week is that they get less hours for their studies, homework, and social interaction. This may result in (a) lower grades in schools, (b) lower standardized test scores, (c) dropping out of school more than other students who do not work or work limited hours, (d) depression, and (e) low self-esteem (Staff & Mortimer, 2008).

Threat of Career Indecision

Career indecision is currently a common threat to the academic performance, personal growth, and development among college students (Bechtol, 1978). Due to career indecision, students may begin thinking negatively about their college experiences and career opportunities. These negative career thoughts and aversive reactions to thinking about the future may contribute to anxiety and depression (Hartley, 2009). Berger (1967) notes that an undeclared major creates anxiety, low self-esteem, and low motivation that cause students to drop out from college. Additionally, many students leave college and never return or leave college until they figure out what they want to do in college (Meyer, 1987, p.888).

According to Jed Liston, Assistant Vice President of Enrollment at The University of Montana, undecided students who feel anxious about their un-decidedness are at a greater risk for leaving college than undecided students who are okay with their un-decidedness. He believes that risk factors accumulate when students are not comfortable with un-decidedness. Some people are undecided but fine with indecision, because they know when the time comes they will be able to make a reasonable decision. This is probably related to their sense of self-efficacy associated with college performance and career skills.

Another type of undecided student is the multi-diverted student. These students have a lot of equal interests for different college majors. According to Liston, these students may be at greater risk of leaving college than undecided students with no choices yet, because too many potential choices make it even harder to decide. It may create a sense of hopelessness and anxiety. Less satisfaction and negative perceptions about college create more stress and restlessness in students. Therefore, the basic needs of students' life are effected (sleep, leisure, financial problems, and physical health). As a result, they cannot focus on their studies and fail, or focus too much and burn out and fail. In sum, they cannot keep balance in their lives (author's personal communication with Jed Liston, at The University of Montana on 16th December, 2010). Elton & Rose (1970) also reported undeclared students express less satisfaction and more negative perceptions about college and then drop out of college 2-1/2 times more often than students who entered college with decided majors (Meyer, 1987).

Students with undecided majors may lose valuable credits toward their degrees, take a long time to complete required courses, spend more than four or five years in getting a degree, and end up with more financial burdens and expenses (Bechtol, 1978). According to the author's personal observation during teaching an undergraduate Career Development (COUN 105) class, students without a declared college major were also criticized by family and friends as incompetent, which compelled them to study an area of little interest to avoid criticism.

To address multiple factors that can adversely affect the career decision-making process, colleges and universities now often provide career assistance, career counseling, and career development courses to undecided students (Bollman, 2009). To provide effective career assistance and determine whether and how career decision-making courses affect career decision making, career satisfaction, and college student retention, it is critical for researchers and

practitioners to understand the relationship between decision-making and career development along with the other numerous variables, associated with positive career decision-making.

Statement of the Problem

As described earlier, career indecision is a great threat to college student success. Many students drop out of college or spend more than four or five years to obtain their bachelor's degree (Brich & Mann, 1977). This can lead to greater financial burdens, criticism from parents and peers, low academic grades, and frustration (Goodson, 1981). In addition, from the perspective of U.S. colleges and universities, it is important to keep in mind that it takes three to five times more money to recruit a new student than to retain currently enrolled students (Tinto, 1975). According to Jed Liston, The University of Montana spends \$330 to recruit a new student. If a student leaves the school in the middle of his/her degree, student recruitment off campus costs more money than to keep the former student. It is easy and less expensive to keep a student, who is already here instead of recruiting a new student. Further, Bean and Hossler (1990) reported that a student retained over four years will generate the same amount of money as four other students who leave the college after one year (Arnold, 1999). In recent years, the higher education system has begun working hard to address these financial and retention issues.

Higher education institutions nowadays have been increasingly accountable for measurable outputs and outcomes. They have been demanded to demonstrate their productivities, effectiveness, and efficiencies, reflected for example from student, enrollment trends, student retention and graduation rates, as well as competencies and achievements of graduates, administrators and faculty. One question common in the minds of public policy makers and institutional administrators is "How can

the educational system effectively promote student success in university?"

(Khampirat, 2010, para.1).

According to Astin (1993), "Many students attend college primarily to prepare for a career" (p. 245). This statement implies that most students are aware they have to choose a career and goals for their life, but many are facing problems in making decisions and taking steps toward these goals and destinations. These problems may be, in part, due to the students' lack of knowledge and/or self-efficacy. This lack of knowledge and self-efficacy makes students depressed, discontented, and displeased with their college study experience (Ginn, 1973). As a result, many colleges and universities, including The University of Montana, have begun offering courses based on career development and career counseling to help students obtain a clearer career vision.

This study was designed to explore a variety of outcomes associated with a career development course for undecided college students at The University of Montana. This study helped administrators better understand whether a semester-long, 2 credit course in career development might, in part, help address undergraduate retention problems at The University of Montana.

Purpose of the Study

The purpose of this quantitative experimental research study was to evaluate student outcomes associated with a career development course at The University of Montana. Career decision-making outcomes for students enrolled in the career development course (COUN 105) were compared with career decision-making outcomes for students in Introductory Psychology (PSYX 100), and in Intimate Relationship students (COUN 295) at The University of Montana.

This study evaluated a data set pertaining to the effectiveness of Career Development (COUN 105). The data included pre-and post-testing using the Career Decision Self-Efficacy Scale-Short Form (CDSE-SF (Betz & Taylor, 1983), Career Orientation scale, Career Decision Scale (Osipow et al., 1976), and Decisional Process Inventory (Hartung, 1994). These instruments were used to measure career self-efficacy, self-esteem, and career decision-making in students before and after taking the career development course. Data from these instruments were examined by comparing the mean total pre-test scores with the mean total post-test scores.

Significance of the Study

The main objective of this quantitative research study was to determine whether a career development course offered at The University of Montana had a positive, neutral, or negative effect on career decision-making, self-efficacy, and other career decision measures among undergraduate students.

Research Questions

The following research questions were examined in this current study:

1. Will students who complete a 2 credit Career Development course (COUN 105) show significant improvements in their career decision-making?
2. Will exposure to and completion of COUN 105 contribute to significantly greater increases on students CDSE sub-scales (Self-Appraisal, Occupational Information, Goal Selection, Planning, Problem-Solving) and total scores than the comparison group students?
3. Will students who complete the COUN 105 course have a significantly greater decrease on their Decisional Process Inventory (DPI) scores as compared with the comparison group students?

4. Will students who are exposed to and complete a 2 credit Career Development course have a significantly greater decrease on their Career Orientation (CO) scores as compared with the comparison group students?

Research Hypotheses

1. Students who completed the COUN 105 course would have a significantly greater increase on their CDSE scale scores (see list below) and total CDSE scores than the comparison group students.
 - (a) CDSE Self-Appraisal
 - (b) CDES Occupational Information
 - (c) Goal Selection
 - (d) Planning
 - (e) Problem Solving
2. Students who complete the COUN 105 course would have a significantly greater decrease on their DPI scores as compared with the comparison group students.
3. Students who complete the COUN 105 course would have a significantly greater decrease on their Career Orientation scores as compared with the comparison group students.

Limitations and Delimitations

1. This study was delimited to students enrolled in the Career Development (COUN 105), Introductory Psychology (PSYX 100), and in Intimate Relationship (COUN 295) courses at The University of Montana.
2. Since the participants were the students of COUN 105, there were not an equal chance for all other undecided students to participate, who were not enrolled in the

- COUN 105. Consequently, it was not a randomly selected sample; therefore, conclusions can only be made regarding students, who were enrolled in this course. This may not generalize to other populations.
3. The questionnaires used in this study were based on close ended, multiple choice, and Likert scale questions, all of which focus on career development issues. Other measurement approaches might confirm or dis-confirm study results.
 4. This study was based on self-reported anonymous questionnaires, and the researcher could not judge the honesty of the participants. Therefore, this study might be flawed based on inconsistent responses.
 5. The results might only describe a specific type of students at The University of Montana.
 6. This study was based on pre and post-testing. It was possible that many students did not show up or participated in either pre- or post-testing. It was also possible that the comparison group participants would have been exposed to such experiences during the semester that might directly affected their pre-to-post test score results.
 7. More of the comparison group students were juniors or seniors at The University of Montana than students in the intervention group. Therefore, the comparison group students might not be equivalent, in that they had already decided their majors, as compared with the freshmen and sophomore students in the COUN 105 class.

Definition of Terms

Career certainty. This is the degree of certainty which a student feels about making a decision about a major and a career (Salter, 2008).

Career counseling. Career counseling involves a counseling process, provided by a trained individual that focuses on helping students make career decisions and function more effectively within the academic and career realms.

Career development course. For the purpose of this study, the career development course (COUN 105), 12 week 2 credit course was offered primarily to students who had not yet declared a major at The University of Montana.

Career decision-making. This is usually thought of as a process based on an individual's understanding of his/her abilities, interests, and values. It is based on one's personal experiences (Retrieved March 30, 2010 from <http://www.gcic.peachnet.edu/crn/careermain.htm>).

Career decision self-efficacy scale- short-form (CDSE-SF). This is an instrument developed by Betz & Taylor (1983) that includes 25 items that measure career self-efficacy.

Career decision-making self-efficacy. This refers to an individual's belief in his/her ability to engage in education, goal planning, and career decision making (Stacy, 2003).

Self-efficacy. Self-Efficacy is defined as an individual's beliefs in his/her ability to complete specific tasks or goals (Bandura, 1977).

Student retention. Student retention at The University of Montana is defined as students, who once enrolled, continue their enrollment the next academic semester.

Undecided students. Undecided students are students without any declared college major (Bollman, 2009).

Effect size. It measures the effect of an intervention on student's outcomes and the relationship between dependent and independent variables (Retrieved March 30, 2011 from http://en.wikipedia.org/wiki/Effect_size).

Quasi-experimental design. It is used to compare groups that are not randomly assigned
(Retrieved March 2, 2011 from <http://www.childwelfare.com/courses/documents/bawden.htm>).

CHAPTER TWO

Literature Review

Career Development

Broadly defined, career development is the combination of psychological, physical, sociological, economic, and educational factors that affect the total academic life of an individual (NCDA, 2008). Most career development theorists believe that “career development is a process that takes place over a life span” (Super et al., 1996, p.128; as cited in NCDA, 2006). Many psychologists and sociologists recommend that individuals’ progress through different career stages are linked with their psychosocial needs, developmental tasks, and career concerns. However, these needs and concerns are different and unique to each individual (NCDA, 2006).

Ginzberg, Axelrad, & Herma (1951) proposed that career development as a developmental course of action and an occupational choice for an individual takes place over a number of years. This theoretical perspective also supposes that while individuals may assume this process is complete in early adulthood, choosing an occupation is a lifelong process (Mau, 2007). Similarly, Sears (1982) defined career development as “the total constellation of psychological, sociological, educational, physical, economic, and chance factors that combine to shape the career of an individual over the life span” (as cited in Patton & McMahon, 2006, p.6).

Since the 1990s, globalization has created many new career pathways with a wide array of occupational choices. In some regions, this has been beneficial to individuals suffering from unemployment and poverty. Choosing a positive career choice and then following it leads to an individual to personal growth, satisfaction, and social consolidation (Masdonati, Massoudi & Rossier, 2009). Individuals who have decided their careers in their late adolescence and early adulthood period develop a very clear sense of their occupation and career preferences. They make their career goals and start working toward them (Wang et al., 2006).

The preceding career-related theoretical perspectives imply that the concept of career is broad; however, career development is also narrow as the main concept of career is generally viewed as revolving around pre-vocational and post vocational accomplishments along with lifelong responsibilities. For example, the Department of Education and Science (1989) defines career as “the variety of occupational roles which individuals will undertake throughout life. It includes: paid and self-employment; the different occupations which a person may have over the years and periods of unemployment; and unpaid occupations such as that of student, voluntary worker or parent” (p. 2, as cited in Patton & McMahon, 2006, p.4).

Historical Overview

Scholars and theorists have been postulating career development theoretical principles and advocating specific practices since the early 1900s. They have developed numerous career related theories and designs such as “*congruence theory*” (Holland, 1959) and “*career stage theory*” (Super, 1957). These theories have helped in evaluating and understanding thousands of individuals’ career development over the years (Miller & Myers, 2009). In the past, these approaches and theories were developed and adapted for certain populations (i.e., primarily White, middle or upper class, and college educated men). Therefore, the results of these traditional vocational assessments and theories were limited and insufficient to understand career related issues in diverse populations, ethnicities, and cultures (Brown & Lent, 2005). According to Rossides (2004), in the early decades of twentieth century, educators, scholars, and theorists began demanding a uniform education system that should apply to all social classes. This inclination did not start until the end of World War II. After World War II,

The booming economy of the post-1945 period accelerated the progress of urbanization and suburbanization, in effect segregating residential and political

districts by social class (mostly by the price of housing) throughout the United States. The inner city became blighted and black, and layers of white working, middle, and upper-middle-class suburbs grew around the decaying core city. In addition, an average of 1 million immigrants per year, most from depressed rural background, swelled our already overloaded working and poverty-class areas. What makes this overall process important, of course, is that residential areas are also the economic and political units on which America's schools are based. Given the United States' powerful tradition of political decentralization, this class-structured hierarchy of local communities deeply affects its educational system; indeed, it particularizes education by class so deeply that it is probably a mistake to speak of an American system of education at all (Rossides, 2004, p. 670).

In 1961, President John F. Kennedy formed the President's Committee on Equal Employment Opportunity to address discrepancies in career opportunities. Later, in 1965, another program named Upward Bound was designed for academically under-privileged college students. Subsequently, in 1970, a program named TRIO was developed for minority, low-income, first-generation, women, and disabled students. That brought a big turnout in the United States educational system. After few years, in 1979, 11.6 million students were enrolled in colleges and universities in the United States (Hoell, 2006). In earlier centuries, career services were limited in "how a professor, advisor, or mentor trained the student in to a certain profession" in Europe and the United States (Garis, Herr, & Rayman, 1993, p.1). Today, the higher education system is more diverse, stable, and incorporated more technology and resources (Hoell, 2006). Currently, the main responsibility of colleges and universities is to prepare students to graduate

and to secure paid employment. Hoell observed,

Newman, Couturier & Scurry (2004) assert that the decades since the end of World War II have been a period of change and turbulence, generating new expectations of higher education. Shifting demographics, the movement from an industrial to knowledge-based economy, new modes of communication, the rapid advance of technology, and the steady progress of globalization have heightened the demands on institutions to enroll a greater share of the population and to impart more knowledge and skills to students (Hoell, 2006, p.23).

As in the past, students entering colleges and universities are often unclear and confused regarding their future careers and majors. This is probably even more common now that, as Hoell (2006) noted above, there is an increased demand on colleges and universities to admit a “greater share of the population.” As a consequence, arranging different career development interventions for students that help students develop a broad vision about different career possibilities is an important responsibility of college and university administrations. The goal of these career development interventions is to help students make better academic and career decisions (Salter, 2008).

In Parsons’ (1909) classic work, “Choosing Your Vocation,” he introduced a tripartite model and described three factors for wise career decision-making:

(a) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and their causes; (b) a knowledge of the requirements and conditions of success, advantages and disadvantages, compensations, opportunities, and prospects in different lines of work; (c) true reasoning on the relations of these two groups of facts. (as cited in Stacy, 2003, p. 12).

These different levels of career interventions can meet students' specific needs and help them make decisions.

Consequently, it is important for university or college administrations to note how and where they are providing career interventions and the effects these interventions are having on student progress, retention, and graduation (Gordon & Steele, 2003). There are several theoretically-based career related programs developed by colleges and universities in the United States for students to help their academic success and timely graduation (Hoell, 2006).

Theoretical Models

Career Development theories help people make sense of experiences and help them understand the working world and their role in it. A theory is a set of hypotheses that provides direction and helps to explain the past and the future (Abernathy, 2003). Theories of career development have had a relatively short history. Career counseling procedures did not begin until the early 1900s. Parsons (1909) is considered the founder of vocational guidance and psychology, although other individuals, including Pauline Agassiz Shaw, were also involved in Parson's career guidance work (O' Brien, 2001). In particular, Pauline Agassiz Shaw (1841-1917) pioneered the public kindergarten movement in the United States. Mrs. Shaw helped Parson by providing him funds to establish the Vocational Bureau, where he could implement his ideas (Hershenson, 2006).

According to Hansen (1976), career development is a lifelong process, where students gain information and experiences about different areas of study, occupations, and the self, which help them to focus on certain career, goals, and life style (Burkhead & Wilson, 1995). Hackett et al. (1991) reported that these theories help individuals to develop an understanding about self and different options in life, which facilitates their study of different careers. Theories help

students to look at different possibilities and interests, which lead to better career decisions (Patton & McMohan, 2006). There are two primary types of career development theories.

(a) Structural theories: These focus on individuals' personalities, characteristics, and occupational tasks. Structural theories include the Trait-and-Factor Theory (Parson, 1909; Williamson, 1939, 1965) and Vocational Personalities and Environments- John Holland (1985).

(b) Developmental theories: These focus on human development across one's life span. Developmental theories include the Life- Span, Life Space Approach to Careers, Super (1954) Abernathy, 2003).

Trait and factor theory – Frank Parson's and Williamson. As described earlier, Parsons (1909) is considered the founder of career guidance. His theory is among the earliest theories of vocational guidance. He categorized three fundamentals of career selection that include self-knowledge, knowledge of the world of work, and the relations of these two essentials. The procedure is called Trait-and-Factor theory and is used in many colleges, universities, YMCAs, and the Veterans Administration (Zunker, 2002). Apart from these three factors there are two other major assumptions included in this theory:

- (a) An individual's personality can be measured, and
- (b) The correlation of personality and job requirements results in higher performance and work satisfaction (Abernathy, 2003).

Trait-and-Factor theory is designed to help individual's problem solve and make wise career decisions (O'Shea, 1984). This theory plays an important role in using career information and development of assessment techniques (Zunker, 2002). However, Sharf (1996) explained some limitations of this theory: (a) trait-and-factor theory is static and not developmental, (b) it only focuses on individual's personality traits, (c) it does not focus on individual's interests and

values and how they change, (d) it gives one single career goal to everyone, and (e) the career related decisions are often based on measured abilities (Zunker, 2002).

Vocational personalities and environments- John Holland (1985). John Holland (1992) developed his typology theory of vocational personalities and environments. He reported in his theory that mostly people choose a particular career related to their personalities and background rather than their environment (Zunker, 2002). If the personality fits with the work environment, the individual will most likely get satisfaction and success (Abernathy, 2003). Holland identified and described six personality and work environment types model that influence in career choice development. These are labeled Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.

Realistic. Works with hands, machines, active, masculine, stable, and is practical.

Occupations for this type include construction worker, plumber, electrician, photographer, and architect.

Investigative. Works with information, ideas, analytic approaches, and is task-oriented.

Occupations for this type include chemist, biologist, dentist, mathematician, and programmer.

Artistic. Creative, musical, emotional, imaginative, independent, and introspective.

Occupations for this type include artist, musician, poet, designer, sculptor, teacher, writer, editor, and critic.

Social. Helping, supportive, avoidant of technical skills, and is community service

oriented. Occupations for this type include social worker, counselor, professor, nurse, sociologist, and police officer.

Enterprising. Dominant, leader, ambitious, persuasive, good verbal skills, and is direct.

Occupations for this type of personality include lawyer, businessman, politician, sales manager, sales person, and TV producer.

Conventional. Organized, practical, structured, punctual, and has great self-control.

Occupations for this type of personality include bank teller, clerk, data entry person, cashier, accountant, secretary, and bookkeeper.

Holland's hexagon model has five key concepts: consistency, differentiation, identity, congruence, and calculus (Zunker, 2002).

(a) Consistency is characterized as the closeness of some types with one another on the hexagon. The closer the types, the higher consistency in an individual will be. Higher consistency shows greater vocational maturity and achievement.

(b) Differentiation is the clearness in individuals' type and less resemblance with other types. The more resemblance with other types is considered as undifferentiated.

(c) Identity of those individuals who have strong and firm ideas of their interests and goals. Having more occupational choices rather than just a few choices is considered as low identity.

(d) Congruence is when an individual's personality matches with occupational environment. People leave their job mostly because of too much in-congruence and lack of consistency between their personality and job.

(e) Calculus involves specific proposed empirical research techniques that provide counselors and clients' better understanding of his theory (Zunker, 2002).

The life-span, life space approach to careers- Super (1957). Super and other theorists agree that changes occur in people as they mature. The main factors behind these changes are socioeconomic positions, physical abilities, psychological factors, opportunities, and

environmental factors (Alba, 2000). People choose careers that allow them to express their self-concepts and engage in satisfying work (Zunker, 2002). Super developed a theory of five stages to describe career development across a life span. According to Super, career development is based on these five stages: Growth, Exploration, Establishment, Maintenance, and Disengagement (Super et al, 1957). Below is the brief description of Super's five stages.

Growth (birth to age 14 or 15).In this stage, individuals start developing self-concepts, capacities, attitudes, and interests. These qualities help them move from play orientation to work orientation. Individuals start understanding the world of work and identify likes and dislikes based on their career choice.

Exploration (ages 15-24). In this stage, individuals' explore themselves and the world. They gather specific and accurate information about themselves and the world around them. They narrow the choice but do not finalize it (Zunker, 2002). They start crystallizing their preferences that lead to specifying vocational preferences.

Establishment (ages 25-44).In this stage, individuals focus on their different career choices and occupational interests. They begin the process of settling down and making the changes if necessary for finding a compatible job.

Maintenance (ages 45-64). In this stage, individuals focus on whether or not their career choices match their self-concept or not. They also decide whether they should continue in their current job. It is an adjustment period when individuals can improve their working situation.

Decline (ages 65 +). In the last stage of Super's career theory, individuals shift from focusing to their self-image and self-concept to an eventual retirement. Often due to health issues, age, or retirement, they start finding other sources of satisfaction (Clawson, 2008).

These stages provide a structure for vocational behavior leading to five vocational

developmental tasks. These tasks are: crystallization, specification, implementation, stabilization, and consolidation.

Crystallization, ages 14-18. In this phase of a cognitive process the individual has formed a general vocational goal through awareness of their interests, abilities, and values.

Specification, ages 18-21. In this phase, individuals move from tentative to more specific preference.

Implementation, ages 21-24. In this phase, individuals complete their education and training. On the basis of their education and training, they enter the world of work or employment.

Stabilization, ages 24-34. This is the phase of making career decisions and confirming career choices, which are based on related work experiences and personality traits.

Consolidation, ages 35+. After making a career decision, in this phase individuals advance their career goals and establish themselves (Zunker, 2002).

Super developed concepts associated with career maturity, which help individuals' cope with their developmental tasks both effectively and cognitively. Super also developed six career development dimensions for adolescents:

- (a) Orientation to vocational choice and attitude of adolescents about their vocational choice.
- (b) Information and planning, including competence concerning specific information individuals have related to career decision-making skills.
- (c) Consistency of vocational preferences related to individuals' knowledge and consistency of career choices and resources.
- (d) Crystallization of traits, including individuals' awareness and forming of self-

concepts.

(e) Vocational independence with which individuals determine their career and work independently.

(d) Wisdom of vocational preferences, including individuals' detailed information about occupations, preferences, and realistic decisions related to their personal tasks (Zunker, 2002).

The Need for Career Guidance: the Student's Perspective

College students make multiple decisions regarding their education and professional direction. These decisions include choosing a college to attend, choosing a major to study, determining the depth of their involvement in their major and pre-professional activities, and selecting a career or professional life after graduation (Gore, 2005). This decision making process is connected with the career development stage theory. This theory separates an individual's vocational career in different stages throughout the life span. Super's five stage model of career development, which is related to career and occupational choices especially helpful for understanding college students career decision-making (Jiyan, 2008). According to Super, college students are in the exploration stage, where they explore themselves and the world around them. They gain experience through different courses, different experiences, diverse populations, and different clubs, organizations, and sports. These experiences help students focus on distinct careers (Benshoff, Kroeger, & Scalia, 1990). However, making a decision regarding a major is often hard for students; they change their majors three or four times on average. Hence, a specific time to focus on and increase their awareness of their interests is essential for many college students. Students should have belief in their ability to make better career decisions (Stacy, 2003).

Many college students make their career decisions for a certain career or major without any knowledge. Students make these decisions due to influences of and pressures from parents, family, and friends. This lack of knowledge about different majors and careers makes students uncomfortable with their chosen majors and career choices. This unpleasant situation usually creates anxiety and discomfort. This anxiety and discomfort leads them to seek help from others to make career decisions. Usually they get help from professionals, using different career interventions, career services, career development courses, and personal career counseling. These career interventions help them to deal with their personal conflicts and anxiety (Bollman, 2009).

The Need for Career Guidance: the University's Perspective

Every year, many students fail to graduate from their universities or take more than four years to graduate. This excessive retention and failure to graduate are alarming issues for contemporary university administration, faculty, and government (Folsom et al, 2002). Hoell observed:

IRAP (2006) describes that student retention involves the way students enroll, stay enrolled, complete their degrees, or drop out. It describes the flow of students through college over a discrete period of time. Retention is often described in two different ways: as degree completion versus non-completion, and as dropping out versus not dropping out. These approaches give somewhat different perspectives on the phenomenon and produce different results in some student subgroups. Student retention analyses consist of graduation rate analyses, examination of retention patterns, investigation of student attrition behavior, historical analyses that lead to an understanding of past trends, and insight into the psychosocial dynamics associated with retention (as cited in Hoell, 2006, p. 32).

Many forces have combined to put pressure on university systems to address retention and graduation rates. Specifically, state and federal governments, parents, and economic factors push colleges and universities to provide career services designed to improve retention and graduation rates (Halasz & Kempton, 2000). Therefore, providing career services is important for college and university administrations. Administrations need to anticipate “how many students need assistance and what kind of assistance they need” (Hoell, 2006). For this purpose, government and higher education systems began programs in colleges and universities to increase vocational awareness and improve retention and graduation rates.

Industrial Revolution and Career Guidance

The industrial revolution also had a significant effect on career guidance. The first funded program was developed for World War I veterans. Many of these career guidance programs failed because their focus was on labor market needs, not on the workers’ needs. But in 1984, a successful period started when the Carl D. Perkins Act provided different vocational guidance programs with a focus on excellence and equality (Stacy, 2003).

In the present era, career education has become an even greater priority within college and university systems (Peng, 2001). Every year large numbers of students enter college as undecided majors. To address this, colleges and universities offer career guidance in the form of one-on-one career counseling or group treatment (Rayman et al., 1993). The main focus of these career guidance programs is the needs of students, different resources, and curriculum of higher education institutions. Focusing on students is essential because some students might get career services but quit before earning their degrees, which costs a college and university thousands of dollars. According to Jed Liston (personal communication, 16th December, 2010), it is very expensive to the university and the student if a student enrolls and then drops out in the middle of

the semester. For example, if a student pays tuition and fees for one semester and leaves in the middle of the semester, the student won't be able to get a refund or any of that back. If the federal government is paying for the student and the student drops out before the 60th day of the semester, the university has to give some of the money back to the federal government. It depends on the earning percentage of the student. However, if the student leaves on the 61st day of the semester, then the university does not have to give anything back to the federal government because the student stayed at college long enough. However, it costs more to an out-of-state student. The decision to leave the school before earning a degree is not only economically harmful to the college but also to the students, who have to repay their loans whether or not they have completed their degrees (Hoell, 2006).

Griff (1987) described important students' needs that college and university administrations should address in their career guidance programs or interventions. Specifically, Griff recommended that colleges and universities establish:

- (a) An academic advising system that can help students in academic planning and refer them to certain provided programs in the college or university,
- (b) Career development courses, peer counseling programs, and career assessments,
- (c) Resources to help students become aware of their interests, abilities, goals, norms, and decisions,
- (d) Activities related to self-recognition and career,
- (e) Informational resources about different available careers and majors, related jobs to those careers, expected annual salary, and future trends, and

(f) Career workshops every semester to help students in developing resumes and interviewing skills.

To address the common career development needs of students, these activities are being used more frequently in contemporary college and university career development programs. (as cited in Stacy, 2003, p. 26).

Undecided Students

According to Gaffiner and Hazler (2002), twenty to sixty percent of students start college as undecided majors. In contrast, Lewallen (1994) claimed approximately 30% of college students are undecided. Regardless of the actual rate of undeclared majors, Hanna & Robinson (1990) recommended that 50% of college freshmen need career assistance. Since many students with declared majors change majors at some point in college, the true number of undeclared majors is less important than the reality that as many as 50% of college students report needing or wanting career assistance. In fact, it is possible that many students would benefit from career assistance even though they might have declared a major or not acknowledge needing or wanting assistance.

The term “undecided” is used to describe the students who are “unwilling, unable, or not prepared to make educational choices” (Lewallen, 1994, p. 6). In educational settings, “undecided” describes students without a declared college major (Bollman, 2009). Undecided students are characterized as having a more external locus of control and anxiety than students with a strong career choice. Undecided students are also under greater pressures from their parents regarding their career choice (Gianakos, 1999), which may be linked to a lack of confidence, low self-esteem, psychological problems, and poor problem solving skills (Tokar et al., 2003). Being undecided makes college students feel inadequate, unhappy, and less satisfied

with their college experience (Serling & Betz, 1990). These factors make it clear that undecided students are at greater risk in their academic progress and career decision-making.

There are two subtypes of undecided students. These include:

(a) Developmentally undecided students. These students have difficulty deciding their careers or majors due to a lack of self-awareness and decision making processes, and

(b) Chronically undecided students. These students have difficulty making other decisions in life due to low self-esteem and look for help from others, even letting others make decisions for them.

In many cases, undecided students can make better career decisions after career interventions and career maturation (Bollman, 2009).

Career Counseling

There are different support services offered by colleges and universities designed to help reduce dropout rates. The University of Montana offers these support services to both American and international students. These services include: American Indian Support Services, Foreign Student and Scholar Services, Counseling and Psychological Services, Disability Services, and Career Services. Colleges and universities also provide career counseling to students.

Career counseling is the application of specific and general interventions that impact an individual's self-understanding, career decisions, career satisfaction, and balance among work, family and leisure (Engels, Minor & Splete, 1995). The direct or indirect changes that occur as a result of career counseling are assessed in terms of immediate effects or an acknowledgment by the client that a specific career has been selected; intermediate effects or change that occurs as a result of career counseling session(s); distal effects or change that occurs through the entire career counseling intervention (Heppner & Heppner, 2002). In addition, career counseling helps

students make decisions about changing or choosing majors, setting proper directions, applying to jobs, and getting resources to support students in choosing career (Crites, 1981, as cited in ethics in career counseling, 2010, <http://www.articlesbase.com/writing-articles/ethics-in-career-counselling-1896703.html>).

The field of career counseling came into existence in the early 20th century with Frank Parson's Trait and Factor Theory to help clients understand themselves and the world of work (Feduccia, 2003). Career counseling and career development became more common in the United States due to the work of Super during the 1950s. Both career counseling and career development began in colleges and universities as a specialty area in 1984, when the National Vocational Guidance Association was renamed the National Career Development Association. In this era, ethical standards and credentials were established for the career counseling field (Feduccia, 2003).

According to Pope (2000), career counseling as a profession grew in the United States during times of societal change. He describes these changes in six distinct stages:

In the first stage of the development of career counseling in the U.S. (1890-1918), placement services were offered for an increasingly urban and industrial society. In the second stage (1920-1939) educational guidance through the elementary and secondary schools became the focal point. The third stage (1940-1959) saw the focus shift to colleges and universities and the training of counselors. The fourth stage (1960-1979) was the boom for counseling, and the idea of work having meaning in a person's life came to the forefront; organizational career development began during this period. The fifth stage (1980-1989) saw the beginning of the transition from the

industrial age to the information age and the growth of both the independent practice of career counseling and outplacement counseling. The sixth stage (starting in 1990), with its emphasis on technology and changing demographics, has seen an increasing sophistication in the uses of technology, the internationalization of career counseling, the beginnings of multicultural career counseling, and a focus on the school-to-job transition (p.194) (as cited in Feduccia, 2003, p.16).

These stages represent major societal changes in the United States and have affected many individuals' lives within American culture. These societal changes have obviously required people to learn new skills, adopt new careers, and learn new ways of thinking about careers (Pope, 1997). A complete career counseling process helps counselors work with a diverse population of clients, including clients of different gender, sexual orientation, disability, ethnicity, or social and economic status. A comprehensive career counseling process addresses the needs of both client and counselor; it gathers resources and information, sets the goals and plans, and implements the program. In the end, both counselor and client evaluate the process and make modifications if needed (Kerka, 1987, <http://www.ericdigests.org/pre-927/adult.htm>).

Evaluation Studies on Career Interventions

The majority of career intervention research has been conducted on college students. Students may have different personality traits and certain images about themselves that influence their occupations and career decisions. Different career interventions and career assistance affect individuals differently. The effectiveness of a career intervention is also based on a client's personality, developmental level, and circumstances. For example, a career intervention may be effective for middle or high school students but may not for college students. Individuals,

university administrations, faculty, and government are stakeholders who invest to get educational outcomes (Hoell, 2006). They demand empirically supported and efficient career assistance or interventions. Oliver and Spokane (1988) defined career interventions as “any treatment or effort intended to enhance an individual’s career development or to enable the person to make better career-related decisions (as cited in Whiston et al., 1998, p.1).” This definition comprised different career interventions, such as individual career counseling, group career counseling, career classes, computer applications, and career workshops (Whiston et al., 1998).

A number of research studies have been conducted to examine which career intervention is better and more cost efficient; however, the outcomes among these studies are slightly contradictory. As a consequence, it is difficult to describe which career intervention is the most effective. Different studies found different effect sizes of career interventions. For example, for career interventions in general, Brown et al. (2000) found an overall effect size of .34; whereas, Cohen (1988) reported the effect size of .82 (Whiston et al., 2003). Oliver and Spokane (1988) reported that career classes are the most effective career intervention; however, in 1989, Oliver and Spokane indicated career counseling is also a beneficial process and an effective intervention. In a review of various intervention approaches, Whiston et al. (1998) found the largest effect size for individual career counseling; whereas, Brown et al. (2000) reported group career counseling as the most effective (Whiston et al., 2003). Whiston et al. (2003) combined the overall outcomes from the above research studies focusing on college students and reported mean effect sizes of 1.17, .92, .10, and .66 for career classes, individual career counseling, counselor free-intervention, and group career counseling, respectively (Whiston et al., 2003).

Individual and group career counseling are the most common career interventions

provided by schools, colleges, universities, and career services. According to a meta-analytic study, participants who sought individual career counseling had better outcomes than those who received individual test interpretations including counselor-free (viewing videos on non-traditional careers) and computer-free (did not involve the use of a computer). This study also found that computer based intervention is a less effective intervention in isolation. The study recommends that combining both individual career counseling and computer based interventions might be more effective (Whiston et al., 2003). In addition, Spokane and Oliver (1983) concluded that group counseling is an effective intervention that demonstrates career outcomes in children and adolescents. Spokane and Oliver also reported that a group career counseling intervention allows students to get support from other struggling students. Group career counseling helps students develop broader perspectives. Group interventions help make positive changes in students' vocational decisions (Brown & Lent, 2005). In contrast to Whiston et al. (2003) review, other research reports that career courses are more effective than individual counseling, but less effective than group counseling (Robert & Miller, 2006). Yet another study shows that career courses are the third most useful career intervention, among eight categories including individual counseling, group counseling, individual test interpretations, group test interpretations, career workshops, computer alone, computer and counselor, and counselor-free interventions (Whiston et al., 1998).

Over the last 18 years all meta-analyses of career intervention outcome show that career interventions are generally effective (Brown et al., 2003). Most of these studies were conducted to examine which career intervention is better than another and whether it is better to provide career assistance to individuals in groups, classes, individually, through workshops, and computers (Whiston et al., 2003). As described earlier, these studies report different results;

therefore, it is hard to say which career intervention is the most useful. It also suggests that there may be unique factors in the delivery of career interventions that make the interventions more or less effective. This further suggests that individual colleges and universities should collect data regarding the effectiveness of the intervention programs offered within their unique settings and evaluate their particular delivery systems. In the present study, a career development course combined with voluntary individual career counseling was used to as an intervention to facilitate career development among undeclared majors at The University of Montana.

Career Development Courses

Based on individual student needs and institutional/government financial funding issues, the potential importance of career counseling for both individual student development and university retention has critical importance. This dilemma raises an important question: If we are trying to balance cost and effectiveness, what then, is the most efficient method for delivering career development guidance to Freshman and Sophomore college students? To address the issue, career counselors and educators are asked to provide effective and less expensive assistance to students in making career and major selections. When every year a large number of undecided students enter colleges and universities, it is expensive and time-consuming for the administration to provide individual services to all students. Providing one-on-one counseling or assistance is not difficult for career counselors but it is time-consuming and cannot cover all students at once, especially when students experience different problems related to their major selection. Counselors and educators try to facilitate students by using group treatment in the form of a career course instead of using one-on-one counseling (Peng & Herr 1999).

There are a variety of career development courses popular in the colleges and universities for the last twenty five years. These courses are designed to improve the ability of undergraduate

students to make career decisions (Smith, Myers & Hensley, 2002). As early as 1960s, academic credit was granted for career courses in thirty three higher education institutions (Folsom et al., 2002). According to a survey conducted in 1994, which examined two colleges from each state in the United States, sixty two percent of colleges in 32 states offered career courses. These courses reportedly have helped in career decision making and job searches (Mead & Korrschgen, 1994).

The main purpose of these courses is to help students explore their life goals, career planning, and to acquire the knowledge they need in their decision making process (Halasz & Kempton, 2000). Career development courses have been used in colleges and universities since the nineteenth century (Folsom & Reardon, 2003). Colleges and universities have been giving hour long demonstrations on career planning to freshmen during freshman orientations since early 1911. The first career development course for women, titled the “Professional Occupations for Women,” was started at Columbia University in 1921 (Maverick, 1926). Carter and Hoppock (1961) reported that Edgar J. Wiley developed the first career course in 1923. Borow (1960) reported that a comprehensive course entitled "Vocational Planning" was offered at the University of Minnesota in 1932 (Vernick, Reardon & Sampson, 2002).

There are several studies which report that the career development courses are considered beneficial for students. There were 31 studies published on career development courses between 1976 and 1989, 11 studies published between 1990 and 1999, and 3 published between 2000 and 2003 (Robert & Miller, 2006). Haney and Howland (1978) reported that they surveyed 916 four-year and two-year colleges and found 40% of these colleges offer career courses, which suggest these courses are often viewed as beneficial, or at least potentially beneficial. Twenty years later, another survey conducted by the National Association of Colleges and Employers found that

more than half of the colleges they surveyed offered a career course. Whereas, offering career courses in colleges are increasing day by day (Robert & Miller, 2006).

Folsom and Reardon (2001) identified over 80 research articles that based on career development, design, and evaluation in their revised 26th technical report. Most of these articles had been written after 1970. In their research, they contrasted outcomes and outputs of career courses. These studies refer to outputs such as learning about values, skills and interests related to different careers. Outcomes are the effects of the completion of the course objectives such as job satisfaction, cumulative GPA, and decided academic major. In these studies, retention was an outcome variable defined as the student returning to the next term (Folsom & Reardon, 2001).

As noted previously, one rationale for the increased need for career development courses is that many first year students enter universities with an academically undecided major (Gordon & Steele, 2003). Another reason is that half of the students with decided majors change their minds at some point during their college years (Robert & Miller, 2006).

According to Herr, Rayman, & Garis (1993), most educators and career counselors have used group treatments, in the form of career courses. Other research suggests out that a college student's level of certainty increases after enrolling in a career development class, and that they make more sober and professional decisions afterward (Davis & Horne, 1986). An additional study in Taiwan, Peng and Herr (1999), indicates that the career development courses in colleges make statistically significant changes in the certainty level among Taiwanese junior college students' career choices.

According to a review of several meta-analyses (Brown & Krane, 2000), there are five components in the most effective career intervention courses:

- (a) it should allow clients to clarify and write their goals and concerns;

- (b) it should provide clients with individual feedback;
- (c) it should provide up-to-date information about different occupations, careers, and majors;
- (d) it should include mentors who give effective demonstrations about careers, e.g., teachers and advisors; and
- (e) it should provide assistance in developing support networks for pursuing career objectives.

According to Davis and Horne (1986), career courses help students make career decisions, occupational goals and gain career maturity. Those students who took career development courses became more academically focused. Students with undecided academic majors can enter a cyclical process. They decide their academic major and then return to being undecided due to lack of interest, information, peer influence, demographic and cultural background, parental pressures, and doubts. Students analyze their personal dimensions, majors, and careers using different plans and strategies (Slowinski & Hammock, 2003). Gordon (1992) identifies four components within these strategies which are self-knowledge, educational knowledge, occupational knowledge, and decision making knowledge.

Often these courses are taught by counseling department faculty or career counselors. Empirical researches have established that career courses have positive outcomes and impacts on students and their cognitive functioning. Reed et al. (2001) studied the impact of a career course intervention on college students and found a career course as effective in reducing negative career thoughts in students. They also suggested that reduction of negative career thoughts in students helps them to develop a better sense of decision-making in choosing a major. Barker (1981) reported the outcomes of her career course: 88% of the students reported a greater

understanding of the career course material, 87% reported a greater understanding of the job market, 84% declared a career plan that fit with their personality and environment, and 81% reported an understanding of career goals. She also reported those students who had completed the career course acquired knowledge about college majors and occupations that helped them in selecting a college major or an occupation (Salter, 2008).

Ninety percent of studies focusing on the efficacy of career development courses showed positive outcomes, while only 4 out of 40 studies concluded no positive impact of career courses (Folsom, Readron & Lee, 2005). Evans and Rector (1978) found in their survey that 73.3% of undecided students were close to declaring their majors at the end of the course, whereas 70.9% students decided on an occupation to pursue (Salter, 2008). Peng & Harr (1999) reported that career education courses make statistically significant changes in the career certainty and career indecision levels among junior college students in Taiwan. These studies suggest that career courses help students in understanding themselves and vocations, career decision-making process, career maturity, and internal locus of control (Folsom, Readron & Lee, 2005).

Rationale of the Current Study

Previous research indicates that different career interventions can be effective. At the same time, different theories, empirical studies, and researchers suggest different perspectives regarding which career intervention, literature, exercises, and treatment are important in a career development class. However, this current study was not based on a critical review of research on different career interventions. In this quantitative research study, the main focus was to evaluate whether the efficacy of a classroom-based career development intervention could be generalized to the students of The University of Montana. The primary purpose of the study was to examine student outcomes related to the career development course (COUN 105). The present study

determined whether a semester long career development class had a positive, neutral, or negative effect on career decision-making, self-efficacy, and other career decision measures among students.

Research Hypotheses

1. Students who completed the COUN 105 course would have a significantly greater increase on their CDSE scale scores (see list below) and total CDSE scores than the comparison group students.
 - (a) CDSE Self-Appraisal
 - (b) CDES Occupational Information
 - (c) Goal Selection
 - (d) Planning
 - (e) Problem Solving
2. Students who complete the COUN 105 course would have a significantly greater decrease on their DPI scores as compared with the comparison group students.
3. Students who complete the COUN 105 course would have a significantly greater decrease on their Career Orientation scores as compared with the comparison group students.

CHAPTER THREE

Methodology

Participants

Participants were undergraduate students enrolled in Career Development (COUN 105), Intimate and Family Relationships (COUN 295), and Introductory Psychology (PSYX 100) at The University of Montana-Missoula. That was a convenience sample and quasi-experimental design with COUN 105 students, served as the experimental group (n = 44) and a combination of COUN 295 and PSYX 100 students, served as the comparison group (n = 48).

It was expected that study participants would primarily be Caucasian (95%), with 5% minority students. This population demographic was similar to the general population at The University of Montana. Most of the participants in the experimental group were in the freshman and sophomore levels (ages 18-20 years) with a few non-traditional students in the sample.

Instrumentation

Materials. Students in the COUN 105 course were exposed to a variety of educational materials and class assignments related to career counseling. The materials included a text book (*Making Career Decisions that Count*, 3rd edition by Luzzo & Severy, 2008) as well as a number of informational hand-outs on career theory. Class instructors used specific assignments including natural talent interviews, career genograms, the “what’s good about you” exercise, career autobiography, career based tests-including the VIA brief strengths test, MBTI, and the Holland type (copies of these assignments are in Appendix A). In addition to the textbook and class assignments, most students in the course received four free career counseling sessions. These counseling sessions were provided by graduate practicum and internship students of the Department of Counselor Education. The purpose of these career counseling sessions was to

provide students individualized guidance and support as they set their career goals and refine their decision making processes.

During Spring and Fall semesters 2010, all participants were administered a battery of career-related questionnaires early and late in the semester. The questionnaire package consisted of five measures including (a) a demographic questionnaire, (b) Career Decision Self-Efficacy Scale (CDSE), (c) Career Orientation (CO) scale, (d) Decisional Process Inventory (DPI) questionnaire, and (e) Career Decision Scale (CDS). Copies of these questionnaires are included in Appendix B.

Demographic Questionnaire. All student participants initially completed a demographic questionnaire as a part of this study. The demographic questionnaire consisted of 16 questions including (i) age, (ii) gender, (iii) race and ethnicity, (iv) year in college, (v) current major (if decided), (vi) level of certainty regarding major (if decided), (vii) career choice, (viii) previous career counseling, (ix) current CGPA, (x) family support regarding career decision, (xi) pressures from family to choose a major, and (xii) financial pressures. The questionnaire is included in Appendix B.

Career Decision Self- Efficacy Scale (CDSE). The CDSE is a career decision-making questionnaire based on Bandura's self-efficacy theory (Bandura, 1977). The CDSE was developed to assess how confident respondents are regarding their specific ability to make career decisions (Reese & Miller, 2006; Creed & Yin, 2005). This questionnaire (the CDSE) was developed by Betz & Taylor in 1983. It is a 50-item questionnaire using a 10 point Likert-type scale ranging from 0 (no confidence at all) to 9 (complete confidence). Betz, Taylor & Klein (1996) revised the CDSE and developed the short version based on 25 items and a 5 point Likert scale, ranging from 1 'no confidence at all' to 5 'complete confidence.'

There are five sub-scales in CDSE-Short Form. These subscales include Occupational Information, Goal Selection, Problem-Solving, Planning, and Self-Appraisal. Total scores range from 25 to 125, with higher scores indicating more self-efficacy. According to Betz et al. (1996) the CDSE has an overall alpha of .94 and alphas for sub-scales ranged from .73 to .83. The CDSE has excellent concurrent validity; it has negative and positive correlations with measures of career indecision and vocational identity, respectively (Betz et al., 1996).

Decisional Process Inventory (DPI). The Decisional Process Inventory (DPI) is based on Gestalt psychotherapy theory model (Hartung & Marco, 2003), and was developed to measure career decision-making comfort and process in respondents (Hartung et al., 1994). The DPI was developed by Hartung in 1994 and includes 70 items. It was analyzed by 10 expert judges (Hartung et al., 2003), and is based on 5 point Likert-type scale with two anchors. A sample item is useful to illustrate the anchor points: “The role of career in my life is: Known 1 2 3 4 5 Unknown.” There are 14 sub-scales in DPI including Sensation, Desensitization, Awareness, Interjection, Mobilization, Projection, Action, Retroflection, Full Contact, Deflection, Assimilation, Egotism, Individuation, and Confluence. The Cronbach’s alpha coefficients for sub-scales ranged from .09 to .85; however, another study by Hartung and Marco (1998) reported that the Cronbach’s alpha coefficient of subscales ranged from -.25 to .92 (Hartung et al., 2003). According to Hartung and Marco (1998) the DPI can provide theoretical ground for counselors and researchers to assess and treat career indecision. Moreover, it may assess three career-decision making elements including career choice readiness, barriers to reaching closure on vocational and educational choices, and involvement in career decision-making (Hartung & Marco, 1998). For the purposes of this study, only 14 questions of the DPI was administered to participants.

Career Decision Scale (CDS). The Career Decision Scale (CDS) is an important scale used to measure career indecision (Peng, 1999). The Career Decision Scale is 19-item scale developed by Osipow et al. (1976) to measure career indecision (see also Wang et al., 2006). The CDS contains two scales, the certainty scale and the indecision scale. The first two items are used to measure the level of certainty in students regarding their majors and career decisions. Item three to 18 measure career indecisions in students regarding their career and academic majors, and item nineteen is a free response item (Peng, 1999). CDS scores range from 16-64 (Wang et al., 2006); higher scores show greater career indecision and career uncertainty in students (Peng, 2001). Peng (1999) reported that CDS test- retest coefficients as ranging from .70 to .90. Similarly, Osipow et al. (1976) reported test-retest reliability coefficients ranging from .90 and .81 on items three to eighteen. The Cronbach's alpha for all 19 items in CDS ranged as .87 and test-retest reliability coefficient ranged as .84 in the English translated Chinese version of Career Decision Scale (Peng, 1999).

Procedure

For the purpose of the current study, data was collected under the supervision of the dissertation chair. The following procedure was used for data collection and was approved by The University of Montana Institutional Review Board (IRB).

Students enrolled in the COUN 105 at The University of Montana were offered extra credit points for participating in this research study. Students enrolled in Intimate and Family Relationships (COUN 295) and Introductory Psychology (PSYX 100) were also offered extra credit for participating. All students were informed that participation in this research study was voluntary and that they could refuse to participate. The IRB approved both an initial and revised informed consent for current study. As the participation were anonymous, students used code

names such as their pet's name, mother's maiden name, or last four digits of their phone number. These code names were used to connect the pre-test and post-test results, rather than using student-participant names.

The demographic questionnaire, the CO scale, DPI questionnaire, CDS, and CDSE were distributed to participants in the first two weeks of the Spring and Fall, 2010 semesters. Unfortunately, the CDS was only administered during the Fall, 2010 semester. Volunteer students (receiving extra credit) enrolled in the PSYX 100 and COUN 295 (Intimate and Family Relationships) were also given pre-tests because they constitute the comparison group in this study. Introductory Psychology students were given two extra credit points, one at the time of the pre-test and the other at the time of the post-test at the end of the semester. Participants from the Intimate Relationship class received five extra points by the instructor of the class.

Students of the experimental group were tested once in their class to analyze the progress and understanding of the presented materials during the semester. Students were also asked to make a portfolio, and to complete career based tests including the Holland test, MBTI, VIA Brief strengths test, talent interviews, and a career genogram. In addition, they were asked to find a peer in the class to read and discuss their portfolios. They were also asked to write their peer's biography. This biography was based on the person's personal interests, skills, abilities, and career interests. Peers gave feedback to each other and suggested three or four different careers and majors; they think would fit with their peers' personalities. Students were also asked to write a one page summary on their career counseling experience, including what they learned about themselves, their career interests, and future goals.

During the final week of spring and fall semesters (2010), both the experimental and comparison groups completed the same assessments as a post-test. Data were compiled from

both comparison and experimental groups based on the pre-test/post-test assessments. As the primary researcher, the researcher was the only person having access to the data (other than the dissertation chair).

Data Analysis

All statistical analyses in this research project were conducted using the Statistical Package for the Social Sciences (SPSS). For the first step in data analysis, an analysis of missing data was conducted. That helped to ensure that the data had been accurately input into the SPSS program to analyze the data both descriptively and inferentially.

A Multivariate Analysis of Variance (MANOVA) was used to evaluate the significance of each of the described hypothesis of the current study. MANOVA assessed the effects of the career development course on the students' career decision- making skills as measured by the CDSE (Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem-Solving), CO, DPI, and CDS. A Multivariate Analysis of Covariance (MANCOVA) was also used to evaluate the effects of gender, family pressures, and financial pressures on each hypothesis. The reason MANCOVA was used because the researcher believed gender, family pressures, and financial status may moderate the effectiveness of the COUN 105 intervention. Additionally, the effects of career counseling as a covariate were evaluated.

Multivariate analysis of variance (MANOVA) is a generalized form of analysis of variance (ANOVA). MANOVA is used, when multiple dependent variables analyzed together. It is used to compare the difference between two or more than two groups along with two or more than two dependent variables. It helps to answer the interactions among dependent variables and independent variables. MANOVA design also requires the correlation between dependent measures. Usually MANOVA design used to control the Type 1 error.

In MANCOVA, dependent variables were normally distributed in each group and before comparing the groups, the effect of covariates on dependent variables are separated. Moreover, data were analyzed to test the assumptions of homogeneity of variance-covariance, homogeneity of regression slopes, linearity of dependent variables, and covariates. The SPSS MANCOVA table provided tests such as Wilkes' Lambda and Pillai's Trace to interpret the homogeneity of variance-covariance and homogeneity of regression slopes. In addition, homogeneity of regression slopes signified which covariate(s) and factors are affecting the dependent variables and their interaction. If this interaction was significant then the full MANCOVA could not be used (Mertler & Vannatta, 2005).

CHAPTER FOUR RESULTS

as described in previous chapter, data were collected and analyzed using a Multivariate Analysis of Variance (MANVOA). A Multivariate Analysis of Covariance (MANCOVA) was also used to evaluate the effects of gender, family pressures, and financial pressures on each hypothesis. An alpha level of .05 was used to determine the significance for all statistical tests. Dependent variables in this study included an array of career decision-making scores as measured by the CDSE, CDS, CO, and DPI scales.

Demographic Information. Demographic information (table 1) was collected from participants using a demographic questionnaire (see Appendix B). Descriptive statistics indicated that a majority of the participants (77.1 %) were females in comparison group whereas; an equal number of (50 %) males and females were in the experimental group. Two-third participant's (85.6 %) were Caucasian (White) Americans in both comparison and intervention groups. The average age of the participants were 19-22 years-old in both groups. A majority (27.1 %) of comparison group participants was in their junior year; however, there were (43.2 %) freshmen were in the experimental group. Participant demographic information is described below in Table 1.

Table 1
Demographic Information

		Experimental Group		Comparison Group	
		N	Cumulative %	N	Cumulative %
Gender	Male	22	50	11	22.9
	Female	22	50	37	77.1
Ethnicity	Caucasian American	35	79.5	44	91.7
	African American	2	4.5	2	4.2
	Native American	4	9.1	1	2.1
	Other	1	2.3	1	2.1
	International Student	2	4.5	-	-
College Year	Freshmen	19	43.2	11	22.9
	Sophomore	16	36.6	8	16.6
	Junior	4	9.1	13	27.1
	Senior	5	11.3	13	27.1
	Post-Bach	-	-	3	6.25
Total		44	100	48	100

In the pre-test demographic questionnaires, COUN 105 students were asked if they had ever sought career counseling. Out of 44 students only 4 (9.1 %) Career Development (COUN 105) participants had previously sought career counseling.

It was an option for COUN 105 students to had either four or five free career counseling sessions from practicum and internship Master's degree students in the Counselor Education Department or had a final exam. A majority of the intervention group students' (86.4 % of the experimental group) preferred to have career counseling. In the post-test demographic questionnaire, two questions were added to ask students, whether they sought the five career counseling sessions and were they helpful? On the post-test demographic questionnaire participants were asked to rate their career counseling experience on a 5-point Likert scale with 1

= “Not Helpful” and 5 = “Very Helpful.” These ratings showed the mean rating was 3.6; 21 of 40 participants rated their career counseling experience as either “Helpful” or “Very Helpful.”

Results for Hypothesis I

Students who completed the COUN 105 course will have a significantly greater increase on their CDSE sub-scales scores and total CDSE scores than the comparison group students.

CDSE Self-Appraisal Sub-Scale. A Multivariate Analysis of Variance was conducted to examine the effects of completing the COUN 105 course on students’ CDSE self-appraisal sub-scale. The main effect of time was significant [$F(1, 81) = 11.15$], $p < .001$ as well as the interaction between time and group was significant [$F(1, 81) = 11.15$], $p < .001$. The COUN 105 students significantly increased their scores on the CDSE Self-Appraisal sub-scale over time, as compared to the comparison group students. Table 2 displays the MANOVA results for CDSE self-appraisal sub-scale scores for students enrolled in COUN 105, PSYX 100, and COUN 295.

Table # 2
Multivariate Analysis of Variance for CDSE Self-Appraisal Sub-Scale

Source	<i>df</i>	<i>F</i> Time	<i>F</i> Time * Group	<i>p</i>
CDSE Self-Appraisal	1	11.15	11.15	.001
Error	81	(4.406)		

Note. Value enclosed in parentheses represents mean square of error. CDSE Self-Appraisal indicates Career Decision Self-Efficacy Self-Appraisal sub-scale scores.

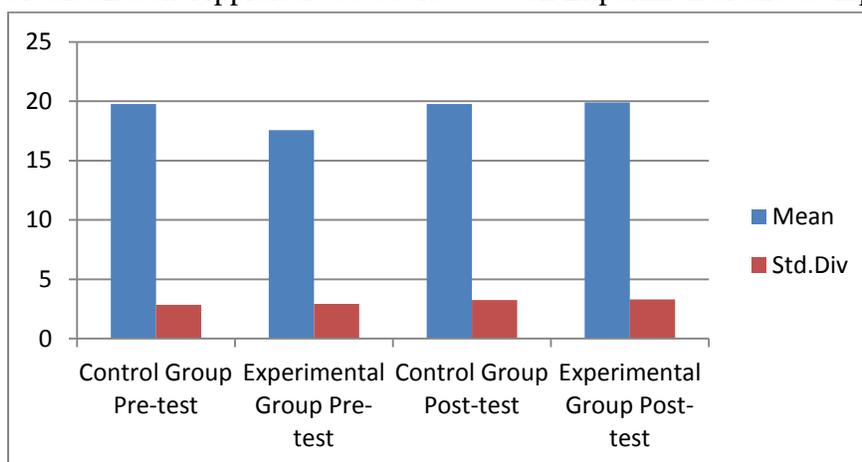
Table 2a displays the mean and the standard deviation differences for both intervention and comparison groups from pre-test to post-test. As can be seen in Table 2a, there was an increase in the intervention group’s mean and scores; however, stable mean scores are reported for the comparison group, which facilitated the experimental group to approach the ceiling scores of the comparison group.

Table 2a
Comparison of Mean and Standard Deviation Differences between CDSE Self-Appraisal for Experimental and Comparison Groups Experimental Group

		CDSE Self-Appraisal	
		Experimental Group	Comparison Group
Mean	pre	17.44	19.84
	post	19.63	19.84
Std. Deviation	pre	2.87	2.88
	post	3.29	3.28

As can be seen in Figure 1, a significant difference between the pre- post-test of the experimental group was found. In addition, although the experimental group scores significantly increased, this increase only brought their scores to approximately the same level as the comparison group.

Figure 1
Comparison of CDSE Self-Appraisal sub-scale between Experimental and Comparison Group



Graph 1 plotting the interaction effects is displayed

Results for CDSE Goal Selection Sub-Scale. The second part of the first hypothesis predicted that there would be a difference between the comparison group and experimental group students' goal selection scores from pre-test to post-test. A Multivariate Analysis of Variance was conducted to examine the effects of completing the COUN 105 course on students' CDSE goal selection sub-scale. The main effect of time was significant [$F(1, 81) = 6.539$], $p < .012$, as was, the interaction between time and group significant [$F(1, 81) = 9.931$], $p < .002$. Participants

from the intervention group significantly increased their scores on their CDSE goal selection scale as compared to comparison group students. Table 3 displays the MANOVA results for CDSE goal selection sub-scale for students enrolled in COUN 105, PSYX 100), and COUN 295.

Table 3
Multivariate Analysis of Variance for CDSE Goal Selection Sub-Scale

Source	<i>df</i>	<i>F</i> Time	<i>F</i> Time * Group	<i>p</i>
CDSE Goal Selection	1	6.539	9.931	.002
Error	81	(4.666)		

Note. Value enclosed in parentheses represents mean square of error. CDSE Goal Selection is representing career decision self-efficacy goal selection sub-scale.

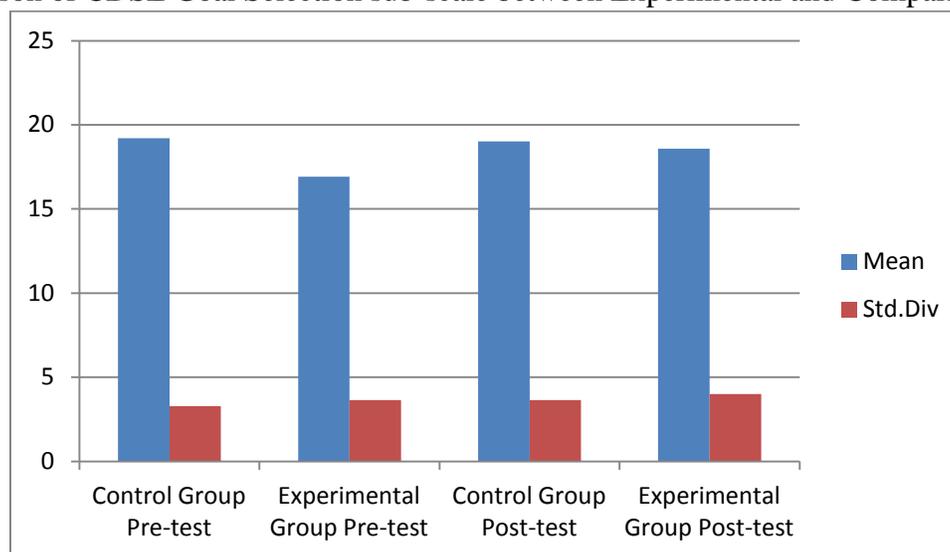
Table 3a displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. It reveals an increase in the intervention group's mean scores but there were no changes in the comparison group average mean scores from pre- to post-test.

Table 3a
Comparison of Mean and Standard Deviation Differences between CDSE Goal Selection for Experimental and Comparison Groups

		CDSE Goal Selection	
		Experimental Group	Comparison Group
Mean	pre	16.91	19.20
	post	18.58	19.02
Std. Deviation	pre	3.637	3.274
	post	4.008	3.637

Figure 2 displays a significant difference between the pre-test and post-test of the experimental group. As described earlier, although a significant increase happened in the intervention group scores, it approximately approached the comparison group's ceiling scores.

Figure 2
Comparison of CDSE Goal Selection sub-scale between Experimental and Comparison Group



Graph 2 plotting the interaction effects is displayed

Results for CDSE Occupational Information Sub-Scale. The third part of the first hypothesis predicted there would be a difference between the comparison and experimental group students' occupational information scores from pre-test to post-test. To evaluate the predicted results, a Multivariate Analysis of Variance was conducted to examine the effects of completing the COUN 105 course on students' CDSE occupational information sub-scale. The main effect of time was not significant [$F(1, 81) = 4.780$], $p < .032$, as was, the interaction between time and group not significant [$F(1, 81) = .392$], $p = .533$. Table 4 displays the MANOVA results for CDSE occupational information sub-scale for students enrolled in COUN 105, PSYX 100, and COUN 295.

Table # 4
Multivariate Analysis of Variance for CDSE Occupational Information Sub-Scale

Source	<i>df</i>	<i>F</i> <i>Time</i>	<i>F</i> <i>Time * Group</i>	<i>p</i>
CDSE Occupation Information	1	4.780	.392	.533
Error	81	(4.420)		

Note. Value enclosed in parentheses represents mean square of error. CDSE Occupinfo is representing career decision self-efficacy occupational information sub-scale.

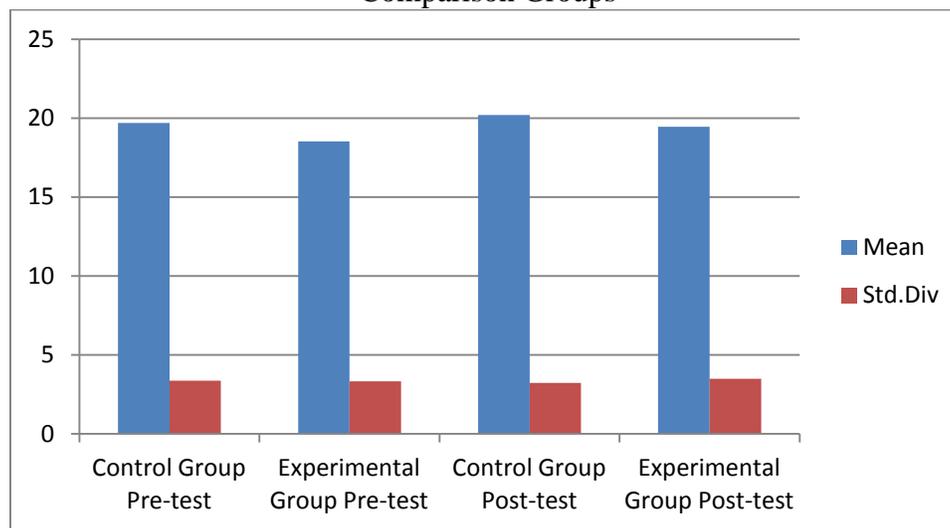
Table 4a displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. As can be seen in Table 4a, there was an increase in the intervention group's mean and standard deviation scores. However, results show that an average alpha is not significant, despite the fact that the average occupational informational scores of the experimental group increased from pre-test to post-test.

Table 4a
Comparison of Mean and Standard Deviation Differences between CDSE Occupational Information for Experimental and Comparison Groups

	CDSE Occupation Information				
		Experimental Group		Comparison Group	
Mean	pre	18.57		19.77	
	post	19.50		20.28	
Std. Deviation	pre	3.40		3.39	
	post	3.48		3.24	

Figure 3 displays a small increase and difference in mean scores of both groups from pre-test to post-test; however, the increase was not found statistically significant for both groups. It also indicates that the mean difference between the comparison group and experimental group was approximately similar at the time of post-test and the average mean score remained stable for the comparison group.

Figure 3
Comparison of CDSE Occupational Information sub-scale between Experimental and Comparison Groups



Graph 3 plotting the interaction effects is displayed

Results for CDSE Planning Sub-Scale. The fourth part of the first hypothesis predicted there would be a difference between comparison and experimental group students' career planning scores from pre-test to post-test. To evaluate the predicted results, a Multivariate Analysis of Variance was conducted to examine the effects of completing the COUN 105 course on students' CDSE planning sub-scale. The main effect of time was not significant [$F(1, 81) = 6.846$], $p < .011$, while the interaction between time and group was not significant [$F(1, 81) = 3.293$], $p = .073$. Table 5 shows the MANOVA results for CDSE planning sub-scale for students enrolled in COUN 105, PSYX 100, and (COUN 295).

Table 5
Multivariate Analysis of Variance for CDSE Planning Sub-Scale

Source	<i>df</i>	<i>F</i> Time	<i>F</i> Time * Group	<i>p</i>
CDSE Planning	1	6.846	3.293	.073
Error	81	(4.557)		

Note. Value enclosed in parentheses represents mean square of error. CDSE Planning is representing career decision self-efficacy planning sub-scale.

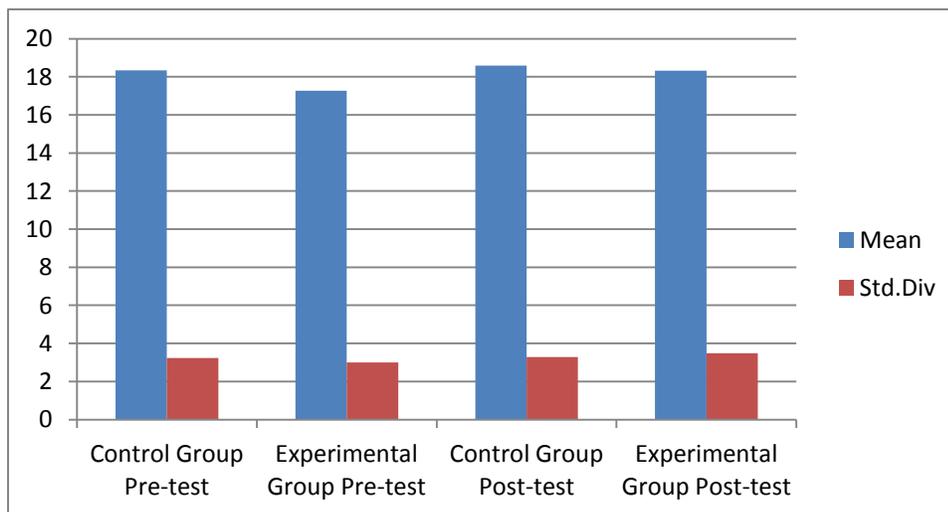
Table 5a displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. As described earlier in Table 4a, there was very little increase in the intervention group's mean and standard deviation scores. Results show that an average alpha is not significant.

Table 5a
Comparison of Mean and Standard Deviation Differences between CDSE Planning for
Experimental and Comparison Groups

		CDSE Planning	
		Experimental Group	Comparison Group
Mean	pre	17.05	18.46
	post	18.52	18.73
Std. Deviation	pre	3.20	3.30
	post	3.42	3.38

Figure 4 indicates that although there is a small difference between comparison group and experimental group mean scores and also that the experimental group post-test scores and pre-test scores have slight differences. The F value and the alpha level of the planning sub-scale indicate no significance.

Figure 4
Comparison of CDSE Planning sub-scale between Experimental and Comparison Groups



Graph 4 plotting the interaction effects is displayed

Results for CDSE Problem Solving Sub-Scale. The last sub-scale of the CDSE predicted there would be a difference between the comparison and experimental group students' problem solving scores from pre-test to post-test. A Multivariate Analysis of Variance was conducted to examine the effects of completing COUN 105 course on students' CDSE problem solving sub-scale. The main effect of time was not statistically significant [$F(1, 81) = 2.885$], $p = .093$, as was, the interaction between group and time [$F(1, 81) = .171$], $p = .680$. Table 6 shows the MANOVA results for CDSE problem solving sub-scale scores for students enrolled in COUN 105), PSYX 100), and COUN 295.

Table 6
Multivariate Analysis of Variance for CDSE Problem Solving Sub-Scale

<i>Source</i>	<i>df</i>	<i>F</i> <i>Time</i>	<i>F</i> <i>Time * Group</i>	<i>p</i>
CDSE Problem Solving	1	2.885	.171	.680
Error	81	(3.996)		

Note. Value enclosed in parentheses represents mean square of error. CDSE Problem Solving is representing career decision self-efficacy problem solving sub-scale.

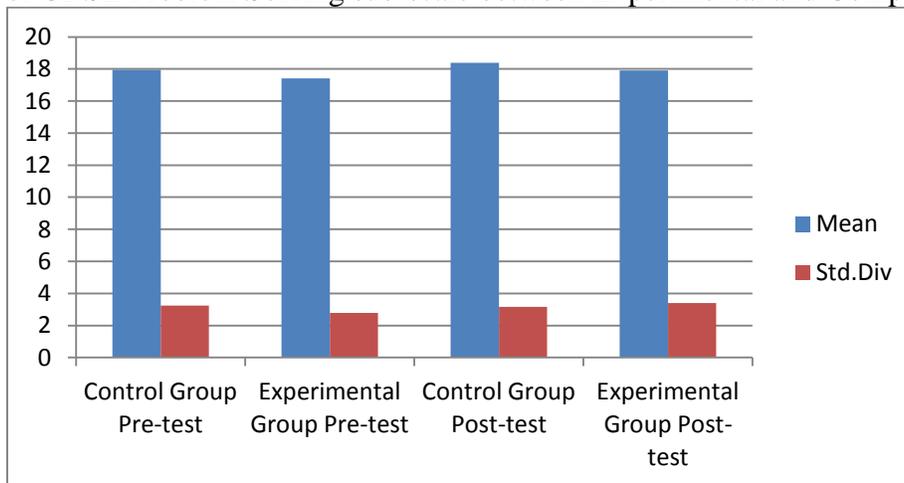
Table 6a displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. Results show that the average mean scores of both comparison and experimental group were almost same on the pre-test, a little increased happened; however, the increase remained same for both groups on the post-test.

Table 6a
Comparison of Mean and Standard Deviation Differences between CDSE Problem Solving for Experimental and Comparison Groups

		CDSE Problem Solving	
		Experimental Group	Comparison Group
Mean	pre	17.42	18.11
	post	18.07	18.51
Std. Deviation	pre	3.0	3.37
	post	3.30	3.23

Figure 5 displays an increase and difference in mean scores of both groups from pre-test to post-test; however, the increase was not found statistically significant for both groups.

Figure 5
Comparison of CDSE Problem Solving sub-scale between Experimental and Comparison Groups



Graph 5 plotting the interaction effects is displayed

Results for CDSE Total Score. Following analysis of Hypothesis 1, it was predicted that students, who completed the COUN 105 course would have a greater increases on their CDSE total scores than the comparison group students. To evaluate the predicted results a Multivariate Analysis of Variance was conducted to examine the effects of completing the COUN 105 course by students' CDSE total scores. The main effect of time was significant [$F(1, 81) = 10.178$] $p < .002$, as was, the interaction between time and group was significant [$F(1,81) = 5.873$] $p < .018$. Table 7 displays the MANOVA for CDSE scores for students enrolled in COUN 105, PSYX 100, and COUN 295.

Table 7
Multivariate Analysis of Variance for CDSE Total

Source	df	F Time	F Time * Group	p
CDSE Total	1	10.178	5.873	.018
Error	81	(66.988)		

Note. Value enclosed in parentheses represents mean square of error. CDSE Total is representing career decision self-efficacy total score scale.

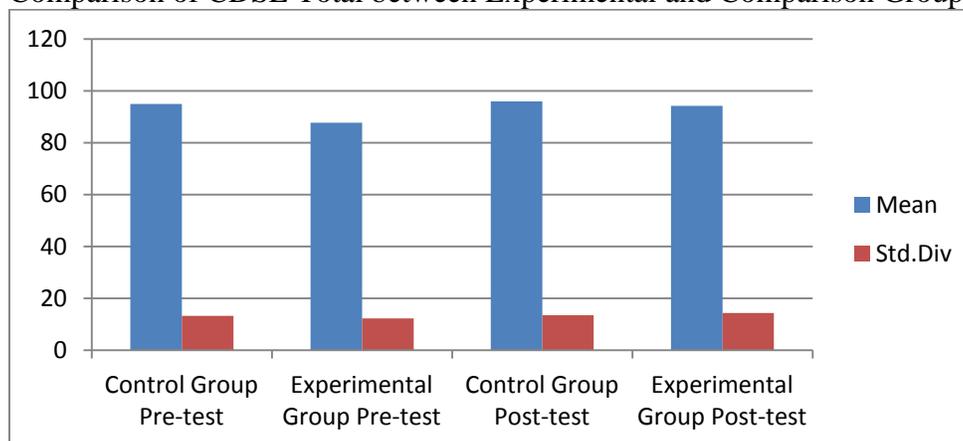
Table 7a displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. As can be seen in Table 7a, there was a huge difference in the average mean scores between both comparison and experimental groups; however, a significant increase occurred in average mean scores of the intervention group. This increase simply approached to the high scores of the comparison group.

Table 7a
Comparison of Mean and Standard Deviation Differences between CDSE Total Scores for Experimental and Comparison Groups

		CDSE Total	
		Experimental Group	Comparison Group
Mean	pre	86.92	95.51
	post	94.07	96.48
Std. Deviation	pre	12.51	13.67
	post	13.96	13.73

Figure 6 displays a significant difference between the pre-test and post-test of the experimental group. It also indicates that the mean difference between the comparison group and experimental group was remarkably large at the time of pre-test. Experimental group students' decision-making self-efficacy scores increased significantly at the time of post-test.

Figure 6
Comparison of CDSE Total between Experimental and Comparison Groups



Graph 6 plotting the interaction effects is displayed.

Results for Hypothesis II

Students who complete the COUN 105 course will have a significantly greater decrease on their DPI scores as compared with the comparison group students.

It was predicted that students, who completed the COUN 105 course would have a greater decrease on their decisional process inventory (Hartung et al., 2000) total scores than the comparison group students. To evaluate the predicted results a Multivariate Analysis of Variance was conducted to examine the effects of completing COUN 105 course on students' DPI total scores. The main effect of time was not significant [$F(1, 76) = 1.959$], $p = .166$, whereas, the interaction between time and group was significant [$F(1, 76) = 13.512$], $p < .000$. Table 8 shows the MANOVA for DPI scores for students enrolled in COUN 105, PSYX 100, and COUN 295.

Table 8
Multivariate Analysis of Variance for DPI Total

Source	<i>df</i>	<i>F</i> Time	<i>F</i> Time * Group	<i>p</i>
DPI Total	1	1.959	13.51	.000
Error	76	(16.158)		

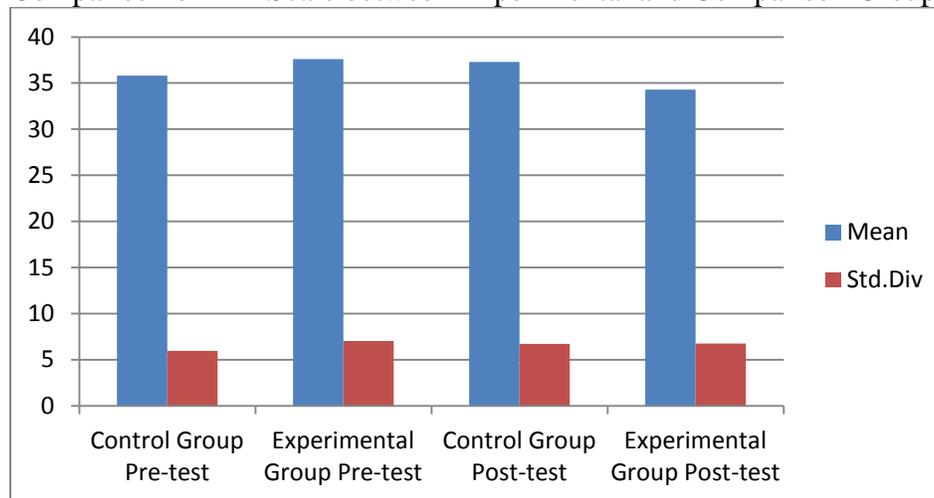
Note. Value enclosed in parentheses represents mean square of error. DPI Total is representing decision process inventory total score.

Table 8a displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. This indicates that there is a significant decrease in the average mean of the intervention group compared to the comparison group students. It also indicates that the average mean of the comparison group students was increased by the end of the semester as compared to the experimental group. In addition, graph 7 also indicates the significant decrease in intervention group towards decision making process.

Table 8a
Comparison of Mean and Standard Deviation Differences between DPI Total Scores for
Experimental and Comparison Groups

		DPI Total	
		Experimental Group	Comparison Group
Mean	pre	37.58	35.81
	post	35.29	37.29
Std. Deviation	pre	7.024	5.973
	post	6.757	6.711

Figure 7
Comparison of DPI Scale between Experimental and Comparison Groups



Graph 7 plotting the interaction effects is displayed.

Results for Research Hypothesis III

It was predicted students who completed the COUN 105 course would have a significantly greater decrease on their career orientation scale total scores than the comparison group students. To evaluate the predicted results a Multivariate Analysis of Variance was conducted to examine the effects of completing COUN 105 course on students' CO total scores. The main effect of time was significant [$F(1, 78) = 70.450$], $p = .000$, whereas, the interaction between time and group was not significant [$F(1, 78) = 3.415$], $p < .068$. Table 9 shows the MANOVA for CO scores for students enrolled in COUN 105, PSYX 100, and COUN 295.

Table 9
Multivariate Analysis of Variance for CO Total

Source	<i>df</i>	<i>F</i> <i>Time</i>	<i>F</i> <i>Time * Group</i>	<i>p</i>
CO Total	1	70.45	3.415	.068
Error	78	(26.84)		

Note. Value enclosed in parentheses represents mean square of error. CO Total is representing career orientation scale total score.

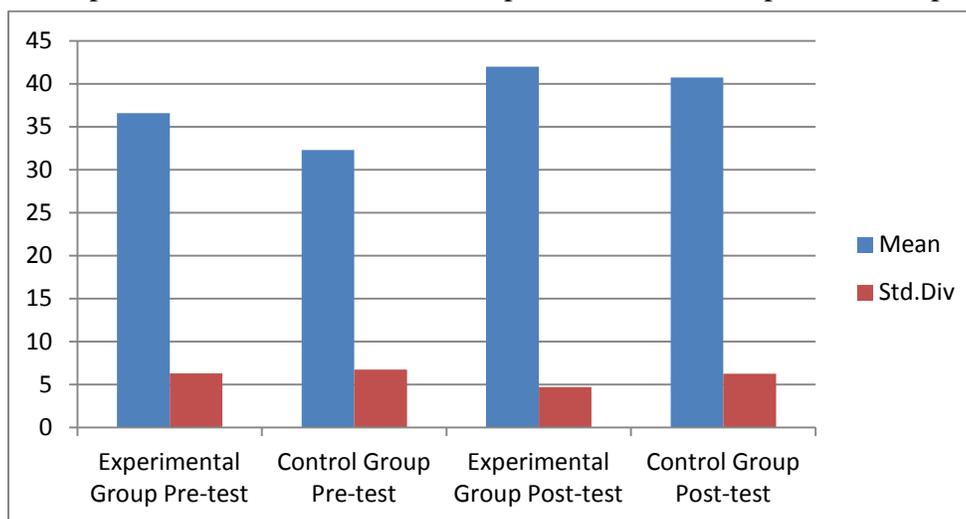
Table # 9a displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. This indicates that there is an increase in the average mean of the intervention group, whereas; an increase can be seen in the comparison group post-test average mean in table 9a.

Table 9a
Comparison of Mean and Standard Deviation Differences between CO Total Scores for
Experimental and Comparison Groups

		CO Total	
		Experimental Group	Comparison Group
Mean	pre	36.58	32.29
	post	41.97	40.72
Std. Deviation	pre	6.317	6.729
	post	4.711	6.277

Figure 8 displays an increase in COUN 105 students' career orientation scale total from pre-test and post-test of the experimental group. It also indicates an increase on the comparison group average mean scores at the time of post-test. Figure 8 plotting the interaction effects is displayed.

Figure 8
Comparison of CO Scale between Experimental and Comparison Groups



Graph 8 plotting the interaction effects is displayed

Results for Career Orientation sub-scale I. It was predicted students who completed the COUN 105 course contribute to significantly greater increases on their career orientation scale total scores than the comparison group students. To evaluate the predicted results a Multivariate Analysis of Variance was conducted to examine the effects of completing COUN 105 course on students' CO sub-scale scores. The main effect of time was significant [$F(1, 78) = 22.667$], $p < .000$, as was, the interaction between time and group significant [$F(1, 78) = 12.393$], $p < .001$. Table 9b shows the MANOVA for CO sub-scale I scores for students enrolled in COUN 105), PSYX 100, and COUN 295.

Table 9b
Multivariate Analysis of Variance for CO Sub-Scale I

Source	<i>df</i>	<i>F</i> Time	<i>F</i> Time * Group	<i>p</i>
CO Sub-Scale I	1	22.66	12.39	.001
Error	78	(224.59)		

Note. Value enclosed in parentheses represents mean square of error. CO sub-scale I is representing career orientation sub-scale score.

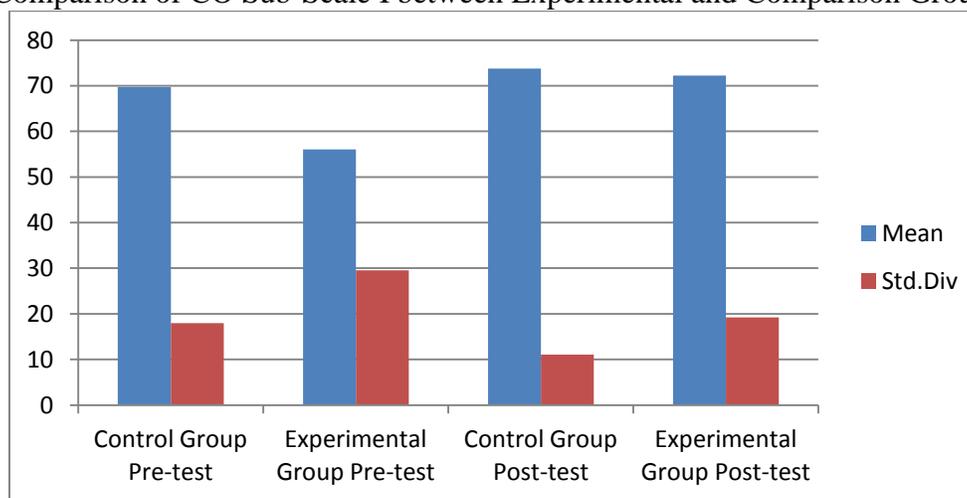
Table 9c displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. As can be seen in table 9c, significant increase happened in the intervention group average mean, as well as the comparison group.

Table 9c
Comparison of Mean and Standard Deviation Differences between CO Sub-Scale I for
Experimental and Comparison Groups

		CO Sub-Scale I	
		Experimental Group	Comparison Group
Mean	pre	63.63	88.52
	post	83.36	91.47
Std. Deviation	pre	29.55	17.99
	post	19.20	11.09

Figure 8a displays a significant increase in COUN 105 students' career orientation sub-scale I from pre-test to post-test of the experimental group. It reveals that the mean difference between the comparison group and experimental group had a statistically significant difference at the time of pre-test, experimental group students' career orientation scores increased significantly at the time of post-test.

Figure 8a
Comparison of CO Sub-Scale I between Experimental and Comparison Groups



Graph 8a plotting the interaction effects is displayed

Results for Career Orientation sub-scale II. It was predicted that students who completed the COUN 105 course contribute to significantly greater increases on their career orientation scale total scores than the comparison group students. To evaluate the predicted results a Multivariate Analysis of Variance was conducted to examine the effects of completing COUN 105 course on students' CO sub-scale II scores. The main effect of time was significant [$F(1, 78) = 20.511$], $p < .000$, whereas, the interaction between time and group had a lack of significance [$F(1, 78) = 7.319$], $p < .008$. Table 9d shows the MANOVA for CO sub-scale II scores for students enrolled in COUN 105, PSYX 100, and COUN 295.

Table 9d
Multivariate Analysis of Variance for CO Sub-Scale II

Source	<i>df</i>	<i>F</i> Time	<i>F</i> Time * Group	<i>p</i>
CO Sub-Scale II	1	20.51	7.319	.008
Error	78	(197.98)		

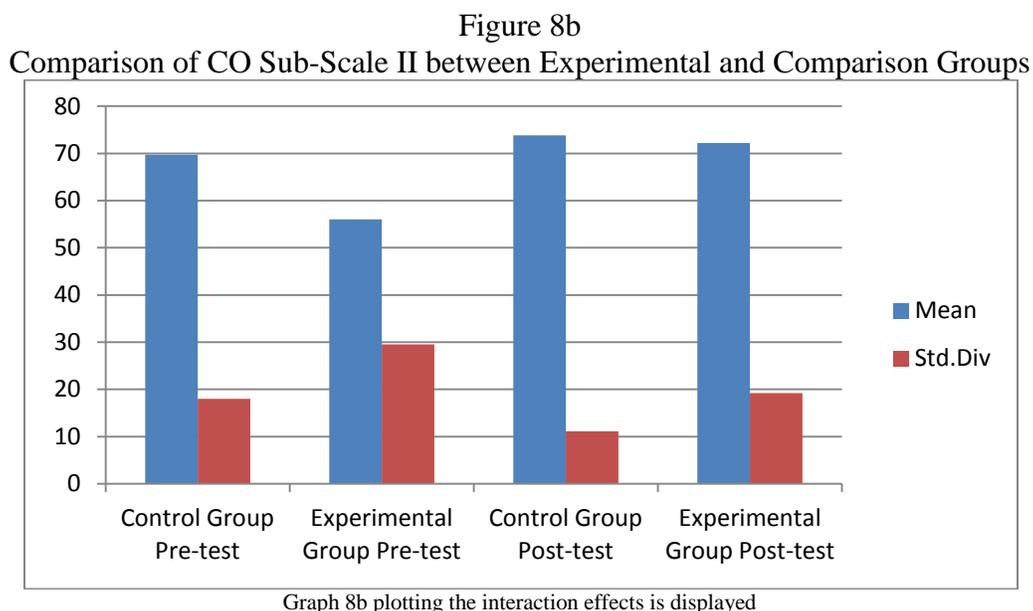
Note. Value enclosed in parentheses represents mean square of error. CO sub-scale II is representing career orientation scale total score.

Table 9e displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. This indicates that there is a significant increase in the average mean happened in both comparison and experimental group students.

Table 9e
Comparison of Mean and Standard Deviation Differences between CO Sub-Scale II for
Experimental and Comparison Groups

		CO Sub-Scale II	
		Experimental Group	Comparison Group
Mean	pre	56.05	69.72
	post	72.19	73.79
Std. Deviation	pre	26.69	25.54
	post	22.79	18.47

Figure 8b displays a significant increase in COUN 105 students' career orientation sub-scale II from pre-test and post-test of the experimental group. It also indicates that the mean difference between the comparison group and experimental group was remarkably large at the time of pre-test, experimental group students' career orientation sub-scale II scores increased significantly at the time of post-test as compared to the comparison group scores.



Additional Findings

Overall, results displayed in the above tables and graphs show significant differences between experimental and comparison groups on their career decision-making and self-efficacy level and attitude. For the purpose of analyzing the effects of COUNS 105 on students' decision-making and self-efficacy with covering out the effects of gender, family and financial pressures, a Multivariate Analysis of Covariance (MANCOVA) was also used on each hypothesis. An interesting finding of this study was that even though the effects of COUN 105 on students' decision-making and self-efficacy was analyzed by co-varying with gender, family pressures, and financial pressures, the F value, degree of freedom (*df*), and the level of significance were

found to have no difference from the results attained after using Multivariate Analysis of Variance (MANOVA).

After analyzing each hypothesis to examine the effectiveness of COUNS 105 course, I also analyzed the Career Decision Scale (sub-scale I and sub-scale II) and the level of career certainty of both groups from pre-test to post-test by using the MANOVA design.

Results for CDS Certainty Sub-Scale. It was predicted COUN 105 class would help students to improve their career decisional certainty level by the end of the semester. To evaluate the predicted results a Multivariate Analysis of Variance was conducted to examine the effects of completing the COUN 105 course on students' CDS certainty sub-scale scores. The career decision scale was not used for a contrast between comparison and experimental groups. It was only used on the intervention group; therefore, there was no interaction found between time and group. However, the main effect for time was significant [$F(1, 21) = 18.730$], $p < .000$. Table 10 shows the MANOVA for CDS certainty sub-scale scores for students enrolled in Career Development (COUN 105).

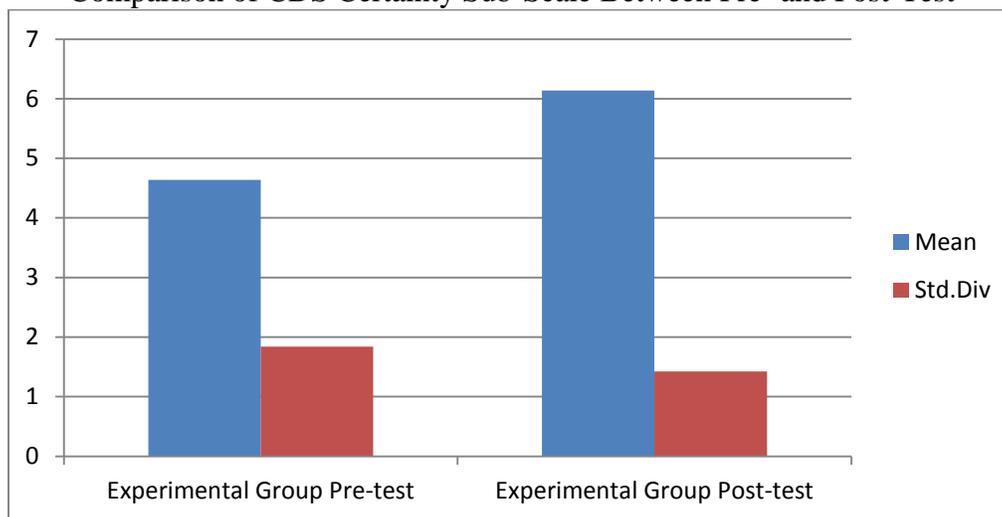
Table 10
Multivariate Analysis of Variance for CDS Certainty Sub-Scale

Source	<i>df</i>	<i>F</i> Time	<i>p</i>	Mean	SD
CDS Certainty Sub-Scale	1	18.73	.000	pre 4.636	1.839
Error	21	(1.321)	-	post 6.136	1.424

Note. Value enclosed in parentheses represents mean square of error. CDS Cer Sub-Scale is representing career decision scale certainty sub-scale scores. SD is representing standard deviation.

Figure 9 displays the significant increase in COUN 105 students' CDS career certainty level.

Figure 9
Comparison of CDS Certainty Sub-Scale Between Pre- and Post-Test



Graph 9 plotting the time effects is displayed

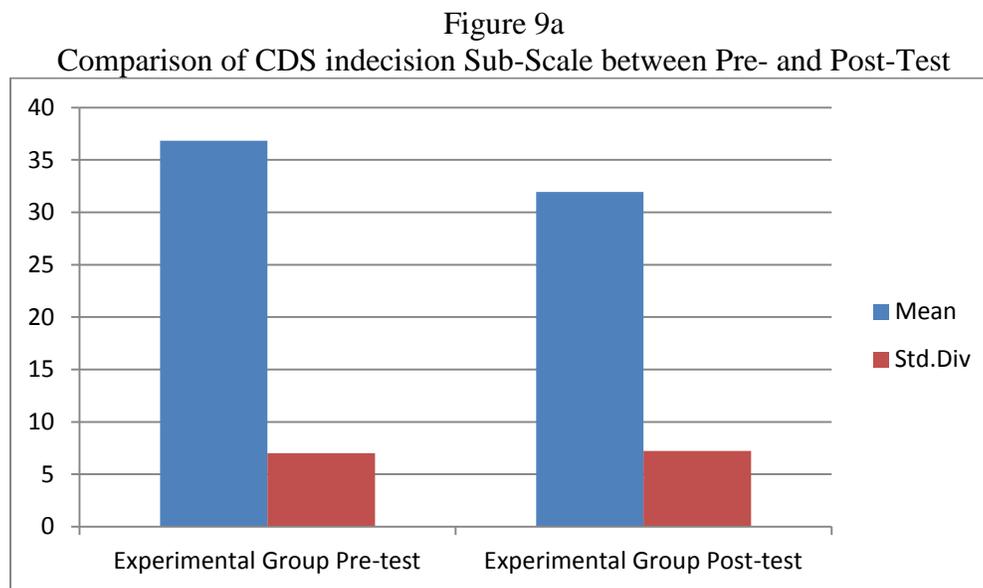
Results for CDS Indecision Sub-Scale. It was predicted the COUN 105 class would help students to improve their career indecision by the end of the semester. To evaluate the predicted results a Multivariate Analysis of Variance was conducted to examine the effects of completing the COUN 105 course on students' CDS indecision sub-scale scores. The career decision scale was not used for a contrast between comparison and experimental groups. It was only used on the intervention group; therefore, there was no interaction found between time and group. The main effect for time was statistically significant [$F(1, 21) = 13.221$], $p < .000$. Table 10a shows the MANOVA for CDS indecision sub-scale scores for students enrolled in COUN 105.

Table 10a
Multivariate Analysis of Variance for CDS Indecision Sub-Scale

Source	df	F	p	Mean	SD
CDS Indecision Sub-Scale	1	13.22	.002	pre 36.81	7.02
Error	21	(19.681)	-	post 31.95	7.24

Note. CDS Ind Sub-Scale is representing career decision scale indecision sub scale scores. SD is representing standard deviation.

Figure 9a displays here the significant increase in COUN 105 students' CDS career indecision level.



Graph 9a plotting the time effects is displayed

Results for Level of Career Certainty. It was predicted that students who completed the COUN 105 course would develop a significantly high level of certainty and make a current career choice or at least come close to deciding by the end of the semester. A Multivariate Analysis of Variance was conducted to examine the effects of completing the COUN 105 course on students' level of certainty total scores. The main effect of time was significant [$F(1, 90) = 14.702$], $p < .000$, as was, the interaction between time and group [$F(1, 90) = 9.769$], $p < .002$. Table 11 shows the MANOVA results for certainty level for students enrolled in Career Development (COUN 105), Introductory Psychology (PSYX 100), and Intimate and Family Relations (COUN 295).

Table 11
Multivariate Analysis of Variance for Career Certainty Level of Students

Source	<i>df</i>	<i>F</i> <i>Time</i>	<i>F</i> <i>Time * Group</i>	<i>p</i>
Certainty	1	14.70	9.769	.002
Error	90	(.159)		

Note. Value enclosed in parentheses represents mean square of error. Certainty level is representing the level of career certainty scores of students.

Table 11a displays the mean and standard deviation differences between the comparison and experimental groups from pre-test to post-test. As can be seen in table 11, the level of certainty had been increased in the intervention group students as compared to the comparison group students.

Table 11a
Comparison of Mean and Standard Deviation Differences between Career Certainty Level for Experimental and Comparison Groups

	Certainty Level		
	Experimental Group	Comparison Group	
Mean	pre	.9091	.3125
	post	.5000	.2708
Std. Deviation	pre	.7721	.5518
	post	.7313	.5355

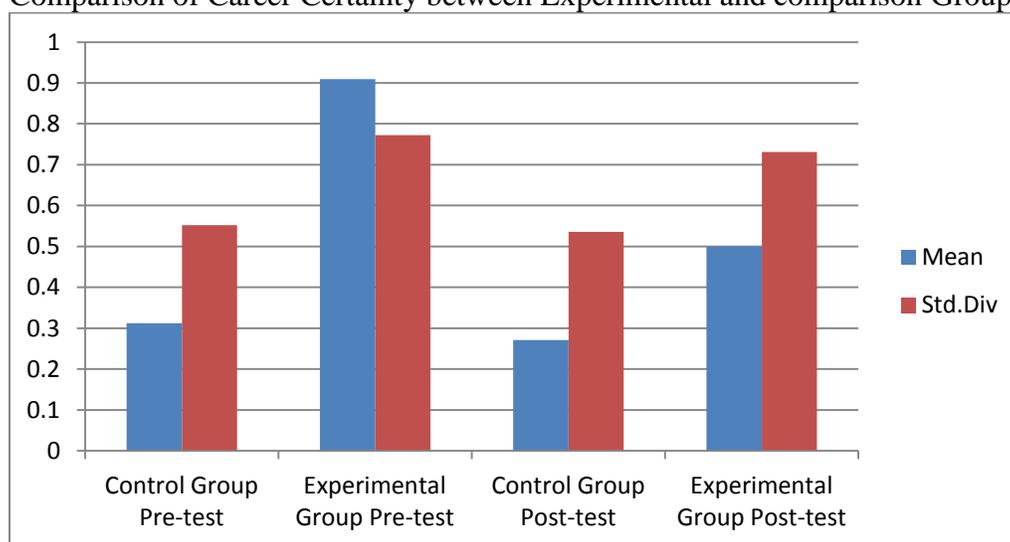
Also Table 11b and 11c display the frequencies of experimental and comparison group students' career certainty from pre-test to post-test, respectively. In their pre-test, out of 44 students of experimental group, 34.1 % students reported their level of certainty as 'high' and 25 % students reported a 'low' certainty. In their post-test, experimental group students' level of certainty went as 'high' as 63.6 % and 13.6 % percent reported still 'low' certainty.

Table 11b
Level of Career Certainty

		Certainty Level			
		Experimental Group		comparison Group	
		Frequency	Cumulative Percent	Frequency	Cumulative Percent
High	pre	15	34.1	35	72.9
	post	28	63.6	37	77.1
Neutral	pre	18	40.9	11	22.9
	post	10	22.7	9	18.8
Low	pre	11	25	2	4.2
	post	6	13.6	2	4.2
Total		44	100	48	100

Figure 10 indicates that the average mean increased for intervention group in the end of the semester. This increase brought the intervention group approximately the same level of comparison groups.

Figure 10
Comparison of Career Certainty between Experimental and comparison Groups



Graph 10 plotting the interaction effects is displayed

CHAPTER FIVE

Discussion

The main purpose of the study was to investigate the effectiveness of a career development course (COUN 105) on career decision-making self-efficacy outcomes for students who were enrolled in this class. These students were also compared with a comparison group to determine whether there were differences in outcomes among the experimental group and comparison group participants from pre-test to post-test. The major findings of the current study are supported by many other earlier and recent research studies on the positive impacts of career courses on college students' decision-making self-efficacy (Whiston et al., 2003; Peng & Herr, 1999; Peng, 2001; Salter, 2008; Feduccia, 2003; Reed et al., 2001; Folsom et al., 2005; Oliver & Spokane, 1998).

The comparison group in this study was not exactly similar to the experimental group. As described in the results, the majority of the comparison group students (27.1 %) was in their junior year and had already decided their majors. In contrast, the majority of the intervention group students were freshmen, struggling with career decision-making processes. In the pre-test, experimental group students scored as having more distress and less confidence about their major and career decision-making as compared to the comparison group students. However, after taking the COUN 105 course, the MANOVA results generally showed that statistically significant changes occurred from pre-test to post-test on the outcome measures. These significant changes generally raised the experimental group scores to approximately the level of the comparison group; therefore, in the end, there were no significant differences between two groups in terms of distress and confidence in their major and career decision-making. This provides general support for indicating the effectiveness of the COUN 105 class on experimental group students' decision-making and self-efficacy outcomes. Below, results are described briefly

associated with each hypothesis, recommendations for future research, and limitations of this study that might have affected the findings.

Hypothesis I (Career Decision Self-Efficacy)

Hypothesis one predicted that students who completed the COUN 105 course would have a significantly greater increase on their CDSE-sub-scale scores and total CDSE scores than the comparison group students.

CDSE Self-Appraisal Sub-Scale. On the self-appraisal sub-scale of CDSE, results indicated that mean scores increased from pre-test to post-test for the experimental group; in contrast, mean scores remained stable for the comparison group. The fact that the comparison group self-appraisal scores remained stable may be accounted for by two different explanations. First, it may be that comparison group students did not show any changes on this measure because they were not exposed to the experimental conditions. Second, it may be that comparison group students already were sufficiently competent in this area and therefore the self-appraisal scores were not likely to change. This second explanation implies that a ceiling effect prevented the comparison group from showing any increases on their self-appraisal scores. In fact, comparison group participants had an average score of “4” or “Much Confidence” at both pre- and post-testing. This suggests that although their initial scores were high, they could have obtained even higher scores they had obtained in that area. In comparison, although mean scores for the experimental group increased from about “3.5” to about “4” which is statistically significant, clinically speaking these may not be very substantial changes. Overall, the good news is the COUN 105 intervention appeared to move participant scores in a positive direction.

The CDSE self-appraisal subscale measures an individual’s confidence in his/her ability to appraise or assess their own abilities or preferences. For example, item #22, a self-appraisal

item, reads: “Define the type of lifestyle you would like to live.” As you can see, this item focuses on a personal self-assessment process. Based on the significant MANOVA results, it appears that the COUN 105 class experience improved participants’ confidence in their ability to evaluate or appraise themselves, their job skills, and preferences. This finding is important because COUN 105 students might have initially less confidence in their self-assessment abilities in contrast to the comparison group. However, after experiencing the COUN 105 course, the COUN 105 students no longer perceived themselves as having a confidence deficit with regard to their ability to engage in self-analysis.

CDSE Goal Selection Sub-Scale. On the goal selection CDSE sub-scale significant differences were noted between comparison and intervention group mean scores. The average mean for COUN 105 students increased over the course of the semester: in contrast, these scores remained almost stable for the comparison group (see Table 3a). One possible explanation for this stability is that a majority of comparison group students had already decided their majors and knew the ins and outs in this area; therefore, scores remained steadfast in the goal selection sub-scale. Another possible reason is the consistency between items on each sub-scale that sustained the scores stable. For example, item # 22, self-appraisal item, reads: “Define the type of lifestyle you would like to live” and the item # 11, goal selection item, reads: “Choose a career that will fit your preferred lifestyle”. As you can see these items focus on self-assessment and decision-making according to that self-assessment on different sub-scales. As described earlier, the comparison group students more likely knew the ins and outs; therefore, responses remained similar as “Much Confidence” at both pre- and post-testing.

The significant MANOVA results demonstrated that the COUN 105 students improved their self-confidence. Average mean scores suggested that COUN 105 students start focusing on

what major they want and how to set a better career goal for their professional lives by the end of the course. The findings also indicated that the COUN 105 students might have no confidence at all or very little confidence in their decision-making abilities and in setting the goals compared to the comparison group. However, the experimental group had significantly increased their confidence level and approximately approached the comparison group's ceiling scores ($p < .010$) after experiencing COUN 105 course. Results also suggested that COUN 105 students make a career decision that fits their interests and lifestyles without worrying whether it was right or wrong.

CDSE Sub-Scales 3-5. Although the goal-selection scores supported the hypothesis, the results for occupational information, planning, and problem solving sub-scales of CDSE indicated no support. Although, mean scores increased from pre-test to post-test for both experimental and comparison groups, hypotheses were not supported in this current study. There are a few possible factors that may have influenced the lack of support for these three sub-scales. First, it might be possible that materials, assignments, and activities presented in COUN 105 course primarily focused on decision-making and self-efficacy process, and very little attention was given to information about occupations, ideal job, building resume, job interviews, graduate schools, ask an alum, and average yearly earnings. Therefore, students did not show more interest in occupational information and planning. It is also possible that a one semester long career course may not provide enough time to cover all career contents and career beliefs (Peng & Herr, 1999). Second, it might be possible that the primary goal of COUN 105 students was to decide a major and limited consideration was given to five or ten years career planning and collecting the relevant information. Based on MANOVA results, little average mean score differences were found between comparison and experimental group from pre- to post-testing.

Moreover, in comparison, although mean scores for the experimental group increased and appeared to move toward positive direction, which is a good indication, but statistically not significant and hypotheses were not supported. It may imply that the comparison group of this current study was not a perfect match with the experimental group, since the majority of the participants in the comparison group were in their junior year and had already decided majors or had career focus. In addition, it might be the small sample size because only COUN 105 students participated in this current study. If there had been a larger sample and students were selected randomly, there may have been larger experimental effect for the significance.

CDSE Total. Following analysis of hypothesis one, it was predicted that students, who had completed the COUN 105 course would demonstrate greater increases in their CDSE total scores contrasting to comparison group students. Overall CDSE scale results supported the hypothesis. Significant differences were noted between comparison and intervention group mean scores. In their pre-test, the experimental group mean scores were very low on this measure, which had been increased over by the course of the semester; in contrast, the scores remained consistent for the comparison group (see table 7a). As previously discussed, several possible factors were associated with these stable comparison group scores. First, it may be possible that comparison group students did not show any changes on this measure because they were quite satisfied and determined with their decided majors. Second, they might have no accurate information about different majors, offered in the university. Third, it might be possible they scored the same on both pre- and post-testing because they were not exposed to the contents of the experiment.

In fact, most students of the comparison group scored a “3, or Moderate Confidence” or “4” or Much Confidence” on their pre-post-testing that could be increased; in contrast, the

experimental group students scored ‘1 or Little Confidence’ or ‘2 or Very Little Confidence’ on their pre-testing, which had directed them toward ‘4 or Much Confidence’ or ‘5 or Complete Confidence’ at the end of the course. This indicates that after experiencing the COUN 105 course, the intervention group students experienced a significant improvement in their decision-making and self-efficacy outcomes. These results also indicated that although there was a small sample size and a non-perfect matched comparison group, the overall course - including the activities, readings, materials, career counseling, and assignments - successfully helped students become more knowledgeable and more confident in their abilities to make decisions, engage themselves in self-analysis, and set goals in their academic and professional lives.

Hypothesis II (Decisional Process Inventory)

Hypothesis two predicted that students who had completed the COUN 105 course would display significantly greater decreases on their Decisional Process Inventory (DPI) scores when contrasting with the comparison group students. Results indicated a statistically significant interaction between time and group by approaching a p value of .000. Results revealed that mean scores decreased from pre-test to post-test for the experimental group; in contrast, an increase occurred in the comparison group post-test mean scores. These findings revealed that all the information related to deciding a major and career during the course was beneficial to the students. The mean scores of COUN 105 students from pre-test to post-test indicated that the course helped students reduce anxiety while also helping them overcome negative thoughts and beliefs about their future education and careers (see table 8a). For example, the DPI measure asked participant in item #5, to respond to the following statement ‘As I think about my work and career options I feel. Their choices ranged from 1 to 5, with 1 representing Energized and 5 representing Exhausted. As you can see this item focuses on the negative attitude to the positive

attitude on one's career options. Based on the significant MANOVA results, it demonstrated that the experimental group scored "4" or "5" in their pre-testing, which had decreased to "2" or "1" by the end of the course. These findings suggested that COUN 105 class helped students to reduce their negative attitudes toward their major selections and career options.

In addition, the mean scores of the comparison group displayed an increase in their average mean scores from pre-test to post-test. This suggested that although their initial scores were less than the experimental group, they had increased their level of consciousness regarding their current majors and career choices (see table 8a). Based on the stable and consistent MANOVA results of the comparison group on hypothesis one, they could have obtained even lower scores in that area. The possible explanation for the fact that the comparison group scored higher may be accounted for by their feeling pressured, exhausted, uncomfortable, or criticized in their current career options. Moreover, thinking about their current majors made them more curious and tense as they might make a wrong career decision. Again, the small sample size and dissimilar comparison group are notable factors that could impact these results.

Hypothesis III (Career Orientation Scale)

Hypothesis three predicted that students who had completed the COUN 105 course would display a significantly greater decrease on their Career Orientation (CO) scale scores as compared with the comparison group students. The hypothesis was not supported and was focused on career anxiety and negative thoughts about careers and self. Although the Decisional Process Inventory scores supported the hypothesis and indicated that the experimental group students reduced their anxiety and negative thoughts about self and career after taking the COUN 105, results showed for CO scale that mean scores increased from pre-test to post-test for both experimental and comparison groups, hypotheses were not supported in this current study (see

table 9a). As described earlier, different explanations may have accounted for both experimental and comparison group's increased scores. It may be possible that although experimental group students increased their self-confidence on DPI scale but as they are in the process of making an important decision in their lives that can make them conscious, which increased their scores in CO scale. Another reason can be the small sample size and inconsistent responses, which can easily, flawed the results. On the other hand, it may be that comparison group was not exposed to the experimental contents and conditions. It may also be possible that the comparison group students failed to maintain their self-confidence about the future success of their decided career. For example, the Career Orientation scale asked participants on the item # 8, to respond to the following statement "I am unsure of my future career success". Their choices ranged from 1 to 5, with 1 representing "Strongly Agree" and 5 representing "Strongly Disagree". As you can see, this item focuses on the certainty and uncertainty of the future success of the decided career.

Based on the MANOVA results, it appears that the average comparison group class switched from certainty to uncertainty; however, COUN 105 class experience improved participants' surety in their career decision by the end of the course.

In addition, a change occurred in both of the CO sub-scales. Both groups increased their scores and reported more focused thinking about their majors and careers. The sub-scale findings demonstrated that the students in the experimental group significantly increased their positive attitude toward the major and career selections. The course helped the students become more focused and knowledgeable about careers they might pursue after college (see tables 9c and 9e).

Additional Findings

After reviewing the findings by using a MANOVA analysis for each hypothesis of this current study, the author of this dissertation also statistically analyzed the Career Decision Scale

(CDS) scores for the experimental group and the level of career certainty of both groups from pre-test to post-test. In addition, the effects of career counseling on the COUN 105 students were also noted. These additional findings included:

1. As the course helped the experimental group, students became more focused and improved confidence in their abilities, interests, and preferences. Results also suggested that on their Career Decision scale, COUN 105 students increased their career certainty. For example, on item # 2, reads: “I have decided on a major and feel comfortable with it. I also know how to go about implementing my choice”. Based on MANOVA results, the COUN 105 class scored “3 or Like Me” to “3.5” on their post-testing. This suggests that the COUN 105 class experienced more persuaded, certain, and encouraged in career decision-making. For example, on item #4, students were asked to respond if they have several career choices and if it is hard for them to decide among them. Results indicated that COUN 105 students scored “1” or “Not like me” on this item at the post-testing. This suggests that COUN 105 intervention appeared to move participant’s scores in a positive direction.
2. After analyzing the career certainty differences between both experimental and comparison groups, increased mean scores were found from pre-test to post-test for the experimental group: in contrasting to the comparison group’s certainty level (see table 11a). Results showed that, the experimental group reported very low career certainty on pre-test, which increased by the end of the course. On the other hand, the comparison group students reported high career certainty on their pre-test; however, they could not sustain this positive assurance by the end of the class. Therefore, their scores decreased on post-test. In addition, although the experimental group’s level of certainty had been

increased and comparison group's had been decreased, the experimental group approximately approached to the comparison group's level of certainty.

3. A majority of the students reported 'neutral' for the career counseling, which indicated that students found counseling as 'helpful' but not 'more helpful'. There are two possible explanations could account for this; (a) the counselors were practicum and internship students and were not fully trained as a career counselors, (b) the participants might choose career counseling option to avoid the final exam but did not take this option seriously.
4. The comparison group was not equivalent as the experimental group. Most of the comparison group students already had a decided major or a certain career to follow. Therefore, they scored high as compared to the experimental group students, who were not familiar with the certain opportunities and seeking for help. Consequently, results showed a significant difference between both groups in the pre-test scores. However, after taking the COUN 105 class, experimental group students scored as high as the comparison group in the end of the semester. Although, these results showed the positive effects of the COUN 105 class, there were no significant difference was found in both groups in the post-test.

Limitations of this Study

As described earlier in the chapter one there are several limitations of this study that should be addressed.

1. There is a need for a larger sample size. Only those students who were enrolled in the COUN 105 course participated in this study, which gave a small effect and not generalized results of this current study to all populations.

2. It might also be possible that students were enrolled in this course because (a) they needed extra 2 credits to be graduated (b) were dropping out another class after the three weeks of the semester and could easily enroll in COUN 105 because this class started in the third week of the semester.
3. As described earlier, the comparison group was not a best fit for the current study because a majority of the comparison group participants were in their junior or senior years; therefore, the findings did not reveal the results as were expected. Moreover, few students from the comparison group (4-7) had taken the COUN 105 course in the past and were familiar with the course objectives.
4. Since, it was pre-post-test study; the author found a lot of missing data while processing analysis. There were many students who did not show up in either pre-test or post-test and also inconsistent and flawed responses were found.
5. Although the most valid and reliable questionnaires were used for this current study, they were based on close-ended and Likert scale questions. For example, students were asked on CDSE about choosing a career on a scale ranging from 1 to 5, with 1 as 'no confidence at all' and 5 as 'complete confidence'. It is possible that students did not respond accurately, did not pay complete attention, or perhaps wanted to give a brief response.

Recommendations for Future Research

1. It is recommended that future studies should have a larger sample size that can be achieved by mandating the COUN 105 course or any other related career courses to all freshmen or sophomores of The University of Montana. Advisers are also strongly encouraged to recommend the career class to those students who have undeclared

- majors. Using the large sample size, random sampling can be used to get reliable results.
2. The comparison group should equal as the experimental group with the same number of students. It is also recommended that the comparison group should not include students, who had previously taken COUN 105 or any other related career course. This could be done by pre-screening of the comparison group participants. For this purpose, students from Writing 101 or PSYX 100 classes can be a good match as a comparison group.
 3. Possible post-research can be happened using current research by gathering the retention and drop-out ratio or data from the enrollment services of those students, who took COUN 105 class, which can give a better emphasis to the course effectiveness and success.
 4. The current study was a quantitative research, which is a comprehensive and genuine way to collect the data and information. However, future research might use both research designs (quantitative and qualitative) in the analysis of the information. It is possible that by using qualitative design along with quantitative design, researchers can get more detailed and complete information. Researchers can choose a few students for brief interviews related to career selection before and after taking the career class.

Conclusion

The comprehensive findings of the current study are not dramatic and do not represent breathtaking changes in the students. The overall results indicated that COUN 105 course was beneficial to the experimental group students in developing decision-making skills and

increasing the self-efficacy level even though the comparison group was not similar to the experimental group. Most of the comparison group students were in their junior or senior years; therefore, they had already decided their college majors, whereas, the majority of intervention group students were freshmen or sophomore with undecided majors. The COUN 105 helped them to make major and career related decisions.

In addition, few comparison group students took the COUN 105 previously; therefore, they had already familiar with the experimental conditions, which affect the results to some extent. On the other hand, despite the fact that the comparison group students had already decided their majors, they spent two or more years in college to make a career or major related decision. But, the COUN 105 helped the intervention group participants to figure it out in one semester. This indicates that career courses are less time-consuming and more helpful for students deciding about their majors.

Furthermore, this class gave students an opportunity to talk and communicate with other undecided students, who had the similar concerns. It was also helpful for students to have career counseling with Counselor Education practicum and internship students and to discuss their career related issues with other personal issues. It also helped them to see the broad range of majors, careers, and other professional opportunities available in the real world of work. Moreover, according to author's personal observation during the teaching of Career Development (COUN 105) class, initially students without a declared major were criticized from family and friends; therefore, they experienced a low self-esteem and self-confidence. However, after experiencing COUN 105 and getting knowledge about different career options, they no longer perceived themselves as having a confidence deficit and low self-esteem. In addition, they become more stable and prepared to make a career decision by the end of the course.

Previous studies also reported that career courses are helpful and effective for helping students to become more confident and stable with their college majors, career planning, and academic and professional lives (Salter, 2003). Moreover, without challenging the importance of career counseling, the findings indicated that career courses are low cost, less time-consuming, and more effective. According to Whiston et al. (1998) it is better to spend dollars on career courses in the colleges and universities. These courses are useful for the students with different demographic, personality, and socio-economic status. Students can also get better assistance and fulfill their needs with these courses, while investing less money and time. These findings are also helping the administration of The University of Montana better understand the effectiveness of this 2 credit career course in its ability to resolve retention issues and to retain previously undecided college students. It also recommends that other universities offer similar career courses or continue offering the existing career courses.

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Appendix A

COURSE ASSIGNMENT DESCRIPTIONS

Assignment 1: Complete the VIA Survey of Character Strengths test online (10 points): To complete this test you must go online and register at the University of Pennsylvania's Positive Psychology (Authentic Happiness) website. The URL is: <http://www.authentichappiness.sas.upenn.edu/register.aspx>. This is a 240 item test. When you finish, print a copy of your results and **put it in your portfolio.**

Then, Conduct three Natural Talent Interviews (10 points): To do this assignment, identify three people whom you respect and trust. Let them know that you have an assignment to get more in touch with your personal strengths and talents. Then, sit down and ask them to tell you what they think are your three greatest strengths or talents and ask for a specific example of each talent or strength. You can take notes if you're comfortable, or just listen and then soon afterwards sit down and document what the person said about you—both your natural talents and examples to support them. Add this summary to your portfolio.

After completing both the Brief strengths Test and the Natural Talent Interviews, write a one-page summary or commentary describing your personal strengths and anything you learned about yourself. **Add this 20 point assignment to your portfolio.**

Assignment 2: Career Genogram (15 pts). Develop a career genogram (as explained in class and enacted in lab) and write a one-page paper explaining/analyzing your genogram. The genogram should identify siblings, parents, aunts/uncles, grandparents and their occupations. Additional information relevant to familial career and educational choices may be included. **Add this to your portfolio.**

Assignment 3: Career Autobiography (20 pts). This assignment will help you determine where you are in terms of Super's five stages of career development.

Write a brief and informal career autobiography. Start with your childhood answers to the question, "What do you want to be when you grow up?" Discuss how your career dreams have influenced your choices in life and then list your volunteer, work, extracurricular, and any other activities you've engaged up to this point in your life. As you examine these activities, rate them using a grading scale (A-F), both in terms of level of enjoyment (A = you enjoyed it very, very much) and level of skill (A = you were very, very good at it). Be sure to consider part-time work and recreational choices in this autobiography. Also, when appropriate, briefly discuss how you made some of the tough decisions between competing activities over the years. And finally, be sure to make a clear list of things you hated and still hate. Take your autobiography to your lab for discussion with your biography partner and then **place it in your portfolio.**

Assignment 4: Exploring Your Holland Type (15 points): Go to www.mtcis.intocareers.org to do a short activity to find your Holland code. The username you will need is **umcotmsla** and the password is **plan7ing**. Review your results and write a one-page reflection on your results and the occupational types associated with your results. More information about Holland codes can be found at: http://www.careerkey.org/asp/your_personality/hollands_theory_of_career_choice.asp. Read the overview on this webpage and the description of Holland's personality types and workplace types. **BE CAREFUL NOT TO PURCHASE ANYTHING. Add these materials to your portfolio.**

Assignment 5: College major and occupational lists (15 points). Make a list of your top college majors and top occupational choices. The lists should be as long or short as you need to make them. Check out at least one of these majors on the Career Services website at <http://life.umt.edu/career/Majors> and one of the occupations on the Dept. of Labor's Bureau of Labor Statistics website at <http://www.bls.gov/OCO/> Print them out and **Place your list and print outs in your portfolio.**

Assignment 6: What do you want? What do you fear? (20 points): After completing this activity during lab, write a one-page commentary/reflection about your goals and fears and add it to your portfolio. **Place this in your portfolio.**

Assignment 7: Peer Biography (25 points): This is your chance to be a career counselor! You should talk with your partner and read his/her Portfolio on or around 4/27. After reading and discussing the Portfolio with your partner, write a 2-3 page paper about your partner. In this biography, pay special attention to (a) the major experiences or influences that have shaped your classmate and his/her personal/career goals and objectives, who he/she hopes to become, and (b) his/her personality traits, likes and dislikes, interests, values, goals, skills, abilities, favorite subjects, and reasons for attending college. This paper should end with a feedback section that links your classmate's background and experiences with potential academic and career choices. In the end, explain why you think your partner would excel in 3-4 different careers and also include possible academic majors that you think are a good fit for your partner. **Place this in your portfolio and give a copy to your partner.**

Assignment 8: Lifeline and Future Planning Autobiography (20 points): Based on your Lifeline and all the information you've experienced in this course, write a brief future autobiography (about 2 pages). In this future autobiography, identify from 1 to 4 different college majors and career paths that you believe will best move you toward your future goals. Use exercise 9.1 in your book as a guide, but please write it in essay format rather than using the pages from the book. **Place this in your portfolio.**

Assignment 9: Career Counseling Exploration Summary (50 points): If you choose to do this assignment instead of the final examination you will need to: (a) have a signed document from

your career counselor-in-training attesting to the fact that you attended four counseling sessions; (b) write a one-page summary on what you learned about yourself and your career direction based on your career counseling experience, including an analysis of what the counselor did that was most helpful and what he or she did that was least helpful. However, we DO NOT need or want to know any of your personal information.

Career Counseling Verification Form

Name of Student _____

Name of Counselor _____

Date _____

By signing below, I am indicating that I have attended ____ sessions _____ of counseling/consultation with a Counselor Education counselor. **In order to receive full credit, you must attend four sessions.**

Student Signature

Counselor Signature

***This form must be signed by student and counselor and turned into instructor no later than Thursday, December 9th. This form is the only evidence that you have completed the consultation requirement and is necessary to earn the 50 points possible.

Appendix B

PARTICIPANT INFORMATION AND INFORMED CONSENT

Title: Exploring College Majors and Career Decisions

Project Director(s): John Sommers Flanagan, Ph.D., 32 Campus Drive, Department of Counselor Education, University of Montana, Missoula, MT 59812, 406-243-5820, john.sf@mso.umt.edu

Sidra Baig, M.A., 32 Campus Drive, Department of Counselor Education, University of Montana, Missoula, MT 59812, 406-243-4205, sidra.baig@umontana.edu

Special instructions: This consent form may contain words that are new to you. If you read any words that are not clear to you, please ask the person who gave you this form to explain them to you.

Purpose: The purpose of this research study is to learn more about how participating in an academic course on Career Development influences students' decisions about their college major and career.

Procedures: If you agree to take part in this research study, you will be given a set of questionnaire to complete early in the semester and toward the end of the semester. In return, you will earn extra credit toward your final grade in your course. The study will take place in your normal classroom or in Skaggs Room 246 and the questionnaires should only take about 15-20 minutes to complete.

Payment for Participation: You will receive 2 extra credit points toward your class grade in PSYX 100OR 5 points toward your class grade in COUN 105 for participating in this research.

Risks/Discomforts: There is no anticipated discomfort for those taking part in this research study and so risk to participants is minimal. If, for whatever reason, you are bothered by taking the questionnaires, you may simply choose not to complete them and ask your instructor for a different extra credit option. Also, if you feel upset by the questionnaires and wish to speak with someone, you're encouraged to contact Curry Health Center 243-4330 or Career Services 243-2022.

Benefits: Although you are unlikely to personally benefit from this study, you may find. The questionnaires interesting and answering the questionnaires may cause you to reflect on your career choices in ways that help clarify your feelings. This research will help college and university personnel better understand what helps college students become more comfortable and more clear about their career and college major decision-making.

Confidentiality: Your name will not be attached to your questionnaire. Completed questionnaires will be kept in a locked cabinet. This informed consent form will be separated from your questionnaires and kept in a locked cabinet separate from the questionnaires. This will assure that your identity remains confidential.

Compensation for injury: Although we do not foresee any risk in taking part in this study, the following liability statement is required in all University of Montana consent forms.

In the event that you are injured as a result of this research you should individually seek appropriate medical treatment. If the injury is caused by the negligence of the University or any of its employees, you may be entitled to reimbursement or compensation pursuant to the Comprehensive State Insurance Plan established by the Department of Administration under the authority of M.C.A., Title 2, Chapter 9. In the event of a claim for such injury, further information may be obtained from the University's Claims representative or University Legal Counsel. (Reviewed by University Legal Counsel, July 6, 1993).

Voluntary Participation/Withdrawal: Your decision to take part in this research study is entirely voluntary and you may refuse to take part in or you may withdraw from the study at any time without penalty or loss of benefits to which you are normally entitled.

Questions: If you have any questions about the research now or during the study contact John Sommers-Flanagan at 406-243-5820 or john.sf@mso.umt.edu. Also, if you have any questions regarding your rights as a research subject, you may contact the Chair of the IRB through The University of Montana Research Office at 243-6670.

Statement of Consent: I have read the above description of this research study. I have been informed of the risks and benefits involve, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

Printed (Typed) Name of Participant

Participant's Signature

Date

Demographic Questionnaire

Please circle your answer for each question or write your answer in the provided place.

Code Name _____
 (Please write your pet name, mother's last name, or last four digits of your phone number).

1. Your age _____
2. Gender _____
 (a) Male (b) Female
3. Your ethnicity _____
 (a)Caucasian American (b)African American
 (c)Asian American (d) Native American
 (e)Other (Please specify) _____
4. Your year in college _____
 (a)Freshman (b)Sophomore
 (c)Junior (d)Senior
 (e)Other
5. When did you start your current studies?
 Fall Spring Year _____
6. Your current major _____ OR Not Declared
7. What is your level of certainty for your major? _____
 (a) High (b) Neutral (c) Low
8. Do you have any current career choice _____
 (a) Yes (b) No
 If YES please specify _____
9. Have you ever sought career counseling? _____
 (a) Yes (b) No
10. Your current CGPA _____
11. Did your parents go to college? (a) Yes (b) No
12. My family supports my decision to be in college.
 Strongly Disagree 1 2 3 4 5 Strongly Agree
13. I feel (or felt) pressures from my family to choose a major.
 Strongly Disagree 1 2 3 4 5 Strongly Agree
14. I feel (or felt) financial pressure to choose a major.
 Strongly Disagree 1 2 3 4 5 Strongly Agree
15. Did you have 5 sessions of career counseling as a part of this course?
 (a) Yes (b) No
16. If yes, how helpful did you find the counseling?
 Not Helpful 1 2 3 4 5 Very Helpful

Last 4 digits of telephone number: _____ Name of first pet: _____

The CO Scale

Please respond to the items below using the following scale:

1 = Strongly Agree

2 = Agree

3 = Neutral

4 = Disagree

5 = Strongly Disagree

1. I get excited when I think about my career _____
2. Thinking about my career inspires me _____
3. Thinking about my career frustrates me _____
4. It is difficult for me to set career goals _____
5. It is difficult to relate my abilities to a specific career plan _____
6. I understand my work-related interests _____
7. I'm eager to pursue my career dreams _____
8. I am unsure of my future career success _____
9. It is hard to discover the right career _____
10. Planning my career is a natural activity _____
11. I will definitely make the right decisions about my career _____
12. I believe I can make a good decision about my major right now _____
13. I'm clear about the top 3 college majors I'd like to choose for myself _____
14. I am very close to choosing a college major _____
15. I am very confident that I'll finish college _____
16. The chances that I'll drop out of the University of Montana are very high

On a scale from 0-100, with 100 meaning that you know exactly what you want to choose for your college major and 0 means that you have absolutely no idea about what you want to choose for your major, how would you rate yourself right now: _____

On a scale from 0-100, with 100 meaning that you know exactly what you want to do with your life after you finish college and 0 means that you have absolutely no idea about what you want to do with your life after college, how would you rate yourself right now: _____

Last 4 digits of telephone number: _____ Name of first pet: _____

DPI Questionnaire

1. Asking me about my career plans make me feel:
 AT EASE 1 2 3 4 5 PRESSURED
2. The career information I have makes me want to:
 TUNE IN 1 2 3 4 5 TUNE OUT
3. The role of work and career in my life is:
 KNOWN 1 2 3 4 5 UNKNOWN
4. As far as the career advice others give me, I am:
 CRITICAL 1 2 3 4 5 UNCRITICAL
5. As I think about my work and career options I feel:
 ENERGIZED 1 2 3 4 5 EXHAUSTED
6. My family/friends/others make choosing a career:
 Difficult 1 2 3 4 5 EASY
7. The energy invest in determining what type of work I want to do is:
 USEFUL 1 2 3 4 5 USELESS
8. The thoughts I have about the types of work I might do, I:
 LET OUT 1 2 3 4 5 KEEP INSIDE
9. As I consider the work I might do, I feel:
 SPONTANEOUS 1 2 3 4 5 INHIBITED
10. Thinking about actually having to make a career decision is:
 INTENSE 1 2 3 4 5 NO BIG DEAL
11. The time and energy I put into trying to make a career decision is:
 ENJOYABLE 1 2 3 4 5 UNENJOYABLE
12. In the “game” of making a career choice, I am a:
 PLAYER 1 2 3 4 5 SPECTATOR
13. The efforts I am putting into deciding on a career, make me feel:
 RESTED 1 2 3 4 5 TENSE
14. That others might disagree with my career choice makes me:
 COMFORTABLE 1 2 3 4 5 UNCOMFORTABLE

CDSE-Short Form

INSTRUCTIONS: For each statement below, please read carefully and indicate how much confidence you have that you could accomplish each of these tasks by marking your answer according to the key, Mark your answer by filling in the correct circle on the answer sheet.

NO CONFIDENCE	VERY LITTLE CONFIDENCE	MODERATE CONFIDENCE	MUCH CONFIDENCE	COMPLETE CONFIDENCE AT ALL
1	2	3	4	5

Example: How much confidence do you have that you could:

- a. Summarize the skills you have developed in the jobs you have held?
If your response was “Moderate Confidence,” you would write the number 3 next to the item.

HOW MUCH CONFIDENCE DO YOU HAVE THAT YOU COULD:

- _____ 1. Use the internet to find information about occupation that interests you.
- _____ 2. Select one major from a list of potential majors you are considering.
- _____ 3. Make a plan of your goals for the next five years.
- _____ 4. Determine the steps to take if you are having academic trouble with an aspect of your chosen major.
- _____ 5. Accurately assess your abilities.
- _____ 6. Select one occupation from a list of potential occupations you are considering.
- _____ 7. Determine the steps you need to take to successfully complete your chosen major.
- _____ 8. Persistently work at your major or career goal even when you get frustrated.
- _____ 9. Determine what your ideal job would be.
- _____ 10. Find out the employment trends for an occupation over the next ten years.
- _____ 11. Choose a career that will fit your preferred lifestyle.
- _____ 12. Prepare a good resume.
- _____ 13. Change majors if you did not like your first choice.
- _____ 14. Decide what you value most in an occupation.
- _____ 15. Find out about the average yearly earnings of people in an occupation.
- _____ 16. Make a career decision and then not worry whether it was right or wrong.
- _____ 17. Change occupations if you are not satisfied with the one you enter.
- _____ 18. Figure out what you are and are not ready to sacrifice to achieve your career goals.
- _____ 19. Talk with a person already employed in a field you are interested in.
- _____ 20. Choose a major or career that will fit your interests.
- _____ 21. Identify employers, films, and institutions relevant to your career possibilities.
- _____ 22. Define the type of lifestyle you would like to live.
- _____ 23. Find information about graduate or professional schools.
- _____ 24. Successfully manage the job interview process.
- _____ 25. Identify some reasonable major or career alternatives if you unable to get your first choice.